2016 HUNGER REPORT

THE NOURISHING EFFECT:

ENDING HUNGER, IMPROVING HEALTH, REDUCING INEQUALITY

bread for the world INSTITUTE

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Joseph Molieri/Bread for the World

26th Annual Report on the State of World Hunger

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Bread for the World Institute provides policy analysis on hunger and strategies to end it. The Institute educates opinion leaders, policy makers, and the public about hunger in the United States and abroad.

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Zach Blum for Bread for the World

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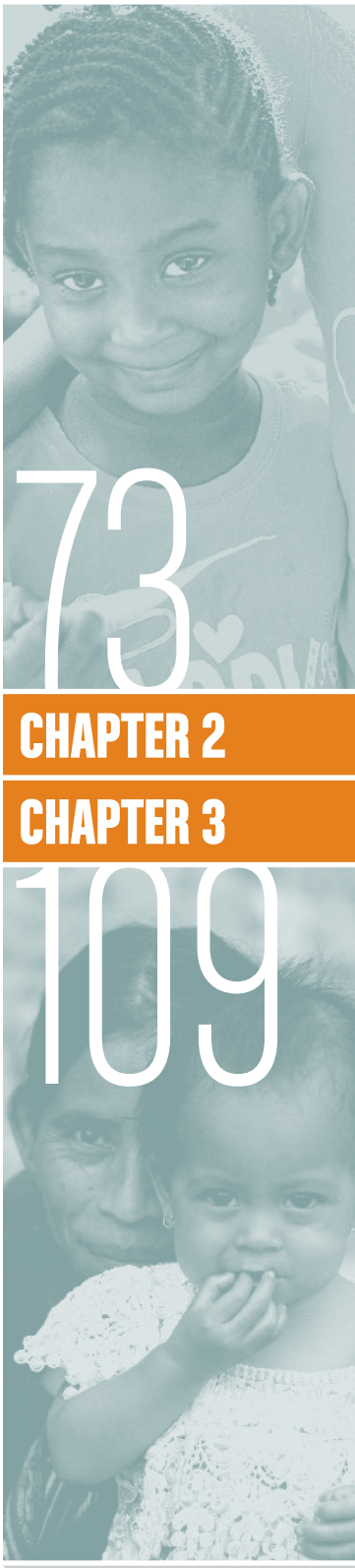

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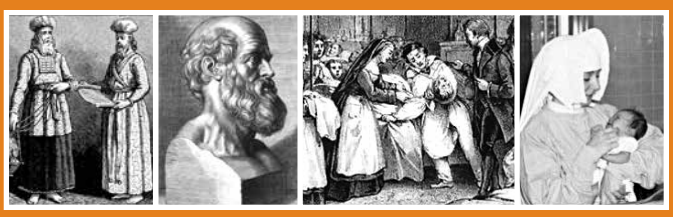

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www.hungerreport.org

Foreword: David Beckmann

In 2015, we learned the child mortality rate around the world has been cut in half in just the past 25 years. Hunger and poverty rates are also falling rapidly in developing countries. Indeed this progress is unprecedented in human history.

Nearly half of all preventable child deaths are linked to hunger and malnutrition. The 2016 Hunger Report reminds us of how hunger, poverty, and poor health are so often interlocking conditions. Hunger and poverty put people at greater risk of poor health by limiting access to nutritious foods that promote good health.

Hunger and poverty take a toll on health in all societies, including right here in the United States. New research discussed in this report shows the effects of stress living day to day and having to choose between paying for food and keeping a roof over one's head. The medical profession calls this toxic stress, and like exposure to any toxin, physical and mental health break down as a result. In children, relentless exposure to toxic stress literally rewires the brain and has permanent effects on physical and mental health.

Poor health is a leading cause of hunger and poverty, especially when people are already trapped in tenuous economic circumstances. A job that does not offer sick leave. A lack of health insurance. One accident, one illness, and suddenly the floor collapses. When an accident or illness strikes a breadwinner, there is collateral damage: children and other dependents.

Despite marriage vows of commitment in sickness and health, we know that poor health can tear families apart. In the United States, the social safety net prevents families from sinking into the most degrading poverty, but it is much more geared to short-term hardships, not the kind that result from chronic illnesses or disabilities that are permanent conditions.

The 2016 Hunger Report is focused mostly on hunger, poverty, and health in the United States, where unlike the progress we've seen in the developing world, hunger and poverty rates soared in the Great Recession and are stuck at an alarming plateau. In recent years, Congress has sought to cut food assistance and other poverty-focused programs. Bread for the World and other church groups have helped to block these cuts, thus avoiding higher rates of hunger and poverty, and as a result higher health costs.

U.S. healthcare spending is projected to reach 20 percent of Gross Domestic Product (GDP) over the next decade. Healthcare costs are the nation's most pressing fiscal challenge. No other high-income country spends as much of its GDP on health care as we do here in the United States. We are not spending more because we are healthier. On the most telling indicators of population health, the United States fares worse than all of our peer countries. On life expectancy, infant mortality, maternal mortality, food insecurity, and obesity, we rank at the bottom, or near the bottom, among our peers.

One reason we are spending more than these other countries is because, as a nation, we tolerate higher rates of poverty and hunger. In 2014, according to research conducted for this report, food insecurity and hunger in the United States added $160 billion to national health expenditures. Fiscal prudence calls for the expansion of efforts to reduce hunger and poverty—not cutbacks in programs essential to reducing the harmful effects of hunger and poverty on health.

"Reducing healthcare costs is an issue that unites people of all political views. If we reduce poverty and hunger, we will save healthcare costs and as a result reduce our debt."

Reducing healthcare costs is an issue that unites people of all political views. If we reduce poverty and hunger, we will save healthcare costs and as a result reduce our debt. If the United States could reduce healthcare costs to the level that other countries at our level of income pay, we would have the money to invest in the kinds of things that lead to more prosperity, such as infrastructure, education and training the workforce to be competitive in the global economy.

Like millions of other people, I was moved by Pope Francis' visit to our country in September 2015. In word and gesture, he shared God's love for all people, and he urged us to respond by reflecting God's love for all people in our personal behavior and in our nation's laws and systems.

When he spoke to Congress and the nation as a whole, he celebrated the progress that the world is making against poverty and urged continued progress. In Pope Francis' own words, "The fight against poverty and hunger must be fought constantly and on many fronts, especially in its causes."

Rev. David Beckmann
President,
Bread for the World and Bread for the World Institute

Lacey Ann Johnson for Bread for the World

The Nourishing Effect: Ending Hunger, Improving Health, Reducing Inequality

"Let food be thy medicine and medicine be thy food."

— Hippocrates, 431 B.C.

KEY MESSAGES IN THE 2016 HUNGER REPORT:

- Nutritious food is essential to healthy growth and development and can prevent the need for costly medical care. Many chronic diseases—the main drivers of cost growth and poor population health—are diet-related.
- The United States spends more per capita on health care than any other high-income country but compares poorly with these others on key population health indicators such as life expectancy and child survival. This is due in part to our tolerance, as a nation, for higher levels of poverty and hunger.
- Socioeconomic inequalities drive population-wide health disparities. Socioeconomic factors such as housing, education, employment opportunities, and access to healthy food have a larger impact on health outcomes than medical care.
- Even as hunger rates decline in every region of the developing world, wide-scale malnutrition from vitamin and mineral deficiencies continues to impose a devastating cost on individuals. In addition, rising levels of obesity and related chronic diseases are imposing a huge burden on weak health systems in developing countries.

Introduction

Health, Hunger, and Inequality

Hunger, food insecurity, and malnutrition ruin health. But good nutrition is preventive medicine.

Hunger leads to poor health and poor health contributes to descents into hunger and food insecurity—especially among people who must choose between paying for food or medicine.

In the United States, the issues of hunger and health have been seen as two separate and distinct challenges. But that is beginning to change as the system adapts to an ambitious reform agenda driven by the Affordable Care Act (ACA). The ACA is moving the U.S. healthcare system to focus on prevention and to address the root causes of chronic diseases.

Courtesy Meals on Wheels

The objectives (or triple aim) of healthcare reform are to improve the patient experience, improve health outcomes for the population, and adopt quality improvements to reduce per capita cost growth. All of these goals will be difficult to achieve as long as hunger and food insecurity rates in the country remain stubbornly high. Every year since 2008, the number of hungry or food insecure people in the country has hovered between 48 and 50 million.

Through the array of federal safety net programs and a vast network of charitable organizations offering food assistance, the health system has an infrastructure to work with to support patients who face the agonizing choice of food or medicine, or who must choose between unhealthy food and running out of food altogether. Every year, the federal nutrition programs save the country hundreds of billions of dollars in additional healthcare costs. For health care, this is a starting point for deeper coordination with a range of partners who are addressing social determinants of health in their communities, unified behind a common understanding of the catastrophic effects of poverty on health.

In 2014, the most recent year we have data, the typical U.S. household spent **$50.00 per person per week for food.**[1]

SNAP

In 2014, the average monthly SNAP benefit per person was **$125.35**, or about **$29.25** per week.[2]

Chapter 1

Hunger and Health throughout the Life Course

A life course perspective on health and hunger illustrates how the effects of hunger on health accrue during a lifetime. A food insecure woman gives birth to a premature, underweight baby. The undernourished infant is more susceptible to infections, requires more medical care, is more likely to be hospitalized, and faces delays in growth and development that may haunt her for the rest of her life.


Laura Elizabeth Pohl for Bread for the World

Growing up poor, she has markedly different experiences than her peers in higher-income households: no high-quality preschool or center-based child care, parents who are overwhelmed with trying to earn enough to keep a roof over their heads, siblings competing for whatever food there is in the home.

In school, she struggles to catch up. She is chronically hungry and relies on the free school meal programs for low-income children for most of her nutrients. Growing up impoverished in a food insecure household exposes her to toxic levels of stress that contributes to early onset of chronic diseases. Toxic stress also makes her more vulnerable to depression and thoughts of suicide, substance abuse, and dropping out of school and, as a result, severely limited employment opportunities in adulthood.

The food insecurity she experienced early in life makes her more prone to overweight and obesity. She is more at risk of becoming disabled at an early age in adulthood, due to the likelihood that her job requires more physical labor than the work of someone with more education. By the time she reaches her senior years, she may well have multiple chronic conditions that are expensive to treat. With limited healthcare options as a younger person, she rarely invested in routine checkups to help diagnose and treat these problems earlier on.

1.9 billion adults worldwide are estimated to be overweight or obese,[3]

and **1 in 12** have Type 2 diabetes.[4]

Only **5 of 193 countries** (Djibouti, Iceland, Malta, Nauru, and Venezuela) have slowed the rise of diabetes.[5]

Chapter 2

Partnering for Collective Impact

Defining the health needs of a community is a collective endeavor involving stakeholders inside and outside of the healthcare sector. Health care must work with community partners who have the necessary expertise in addressing the social determinants of health.

Improving consumers' access to healthy foods in underserved communities is a cost-effective way to reduce the burden of chronic disease in the populations most affected by them. Modest improvements in dietary quality in these communities would have a significant impact on reducing the burden of chronic disease.

Healthcare providers have already begun to engage community partners on strategies to improve access to healthy foods in underserved communities. Strategies include operating food pantries at health centers, writing prescriptions for fruits and vegetables redeemable at farmers' markets, installing food pharmacies on hospital campuses, and subsidizing home delivered meals for seniors and homebound patients. None of these activities would be possible without community partners to prepare and distribute the food, explain and demonstrate to patients how to use unfamiliar foods, or assist in data collection to evaluate the effectiveness of what is being done.

Joseph Molieri/Bread for the World

We need to recognize the value of food to health and the value of health to society. A more just food system would improve health, contribute to ending hunger, and reduce health disparities. The benefits of improving the food system would accrue to all households, making it attractive to policymakers. There is broad concern in the United States—among people of all income levels—about the effects of the food system on health. Improving access to healthy, locally grown foods could also provide direct economic benefits to small and mid-sized farms.

Chapter 3

Hunger, Health, and Inequality in Developing Countries

The global hunger rate now stands at 1 in 9 people—the lowest level in recorded human history. The Millennium Development Goals (MDGs), launched at the beginning of this century, were instrumental in achieving progress against hunger, poverty and other related hardships. As the MDGs expire in 2015, the global community prepares to embark on a more ambitious set of Sustainable Development Goals (SDGs), which include a goal to end hunger by 2030.


Joseph Molieri/Bread for the World

In developing countries, it is clearer how hunger and poor health are bi-directional. Death and permanent disability from hunger occur all too often, especially in vulnerable groups such as women of child bearing age and young children. Even as hunger rates decline in every region of the developing world, wide-scale malnutrition from vitamin and mineral deficiencies and rising levels of obesity remain a huge burden on health systems in developing countries. Malnutrition is the underlying cause of 45 percent of deaths in children under 5, and is one of the main factors of maternal deaths in childbirth.

Economic growth in developing countries has given people more to eat but has also worsened their diets in some respects. Obesity rates in the developing world are climbing rapidly and, as a result, so are noncommunicable disease rates for diabetes, hypertension, and cardiovascular disease. Overall, the numbers of people who are overweight or obese in the developing world exceed the numbers in the developed world by a factor of three to one.

The triple-burden of hunger, micronutrient deficiencies, and obesity presents a major challenge to the capacity of national health systems in developing countries. Capacity development is essential for achieving the SDGs. Looking beyond 2030, countries will be relying mainly on their own capacity to adapt to climate change. The sustainability of ending hunger and malnutrition in an environment where climate is changing unpredictably is above all else a capacity challenge facing every country.

Conclusion

A Transformational Agenda

As in other countries, the United States will be developing plans to achieve the SDGs domestically. In the 2016 Hunger Report, we call on the U.S. government to engage its domestic civil society partners who are working to address the many social determinants of hunger and health in communities across the nation. Achieving progress will depend on leaders rising to the challenge everywhere, so the federal government will need to engage state and local leaders.

The U.S. government will also be looking afresh at its international development assistance programs. Countries and communities around the world have made tremendous progress against poverty and other hardships. We are the generation that could see the end of hunger and poverty. The SDGs provide a bold and ambitious framework that would transform the world we live in for generations to come.

If the question of what do all people need to survive and thrive drove national and global priorities—the world would be a very different place. The SDGs are an opportunity to put that question at the heart of policymaking.

Box ES.1

ESTIMATING THE HEALTH-RELATED COSTS OF FOOD INSECURITY AND HUNGER

U.S. policymakers and the public should understand the devastating toll of hunger and food insecurity on people's health, and they also need to know the economic costs. Individual stories of how hunger ravages bodies and souls are sometimes reported in the media, with little apparent effect on the status quo. Policymakers and the public are less likely to hear about the economic costs.

Hunger and food insecurity cost the United States as a nation much more than we may realize. In 2014, the most recent year for which we have data, the estimated health-related costs of hunger and food insecurity in the United States were a staggering **$160.07 billion.**

John T. Cook of Boston Medical Center and Ana Paula Poblacion of Universidad Federal De São Paulo have updated and built upon a 2011 study by a team of researchers from Brandeis University. Their full-length study, *Estimating the Health-Related Costs of Food Insecurity and Hunger,* is in Appendix 2.

Hunger and food insecurity also cost us dearly in other ways: educational outcomes, labor productivity, crime rates, Gross Domestic Product, and much more. The overall costs of hunger and food insecurity to society may well be incalculable. But this report demonstrates hunger and food insecurity are a health issue, and we are hopeful the solid research to back up the estimate reported here, $160.7 billion of health-related costs in one year alone, will draw attention. We also argue that much more research is needed to fully understand the impact of poverty and hunger on health outcomes. Bread for the World and its advocacy partners will use every opportunity to make this estimate a part of the public conversation about hunger, health care, and the federal budget.

RECOMMENDATIONS

For health care:

- Use the Hunger VitalSign™, a two-item food-security tool, and include results in patients' electronic medical records.
- Promote federal nutrition programs and community-based food assistance whenever food insecurity is a risk factor in patient outcomes.
- Expand medically tailored meal programs for homebound patients with chronic conditions and at risk of food insecurity or malnutrition.
- Build the evidence base for nutrition services such as fruit and vegetable prescriptions and medically tailored meals.
- Build and sustain partnerships with local anti-hunger organizations and others to more systemically and completely understand and address the social determinants of health.
- Advocate for ending hunger and poverty as a cost-effective measure to improve population health and reduce the costs of treating chronic diseases.

For anti-hunger advocates and service providers:

- Strengthen relationships with healthcare institutions such as hospitals and public health departments in your local area to more quickly end hunger and poverty.
- Become familiar with opportunities to collaborate with health care under the Affordable Care Act.
- Participate in the community health needs assessment that all local nonprofit hospitals are required to perform, and participate in developing a community health plan based on the assessment.
- Communicate to your constituency, including policymakers and clients, how hunger is a health issue and why nutrition programming is an underappreciated asset for improving health outcomes.
- Advocate for improving the healthcare system in ways that will end hunger and poverty.

For policymakers:

- Require all healthcare providers to use the Hunger VitalSign™; and aggregate, analyze, and report the data.
- Promote and support research on associations between hunger and food insecurity with adverse health outcomes.
- Maintain strong support for the federal nutrition programs, which save the country billions of dollars per year in additional healthcare expenses and are the main way millions of households are able to afford healthy food.
- Invest in public health and prevention strategies to achieve the triple aim of health care reform: better care of individual patients, better population health outcomes, and lower per capita costs of care.
- Ensure that everyone in the United States has access to health care by enforcing existing anti-discrimination laws and proactively eliminating inequities caused by bias and discrimination.
- Increase support for small and medium-sized farmers, who are essential to increasing the supply of healthy foods in underserved communities and scaling up nutrition services used in health care.
- Ensure that the USAID Multi-Sectoral Nutrition Strategy and the whole-of-government nutrition coordination plan are implemented and resourced, and also monitor food security and global health programs for improved nutrition outcomes.
- Strengthen the capacity of national health systems in developing countries.
- Support the Sustainable Development Goals (SDGs), a global development framework that calls on all countries to cooperate in ending hunger and poverty by 2030, as well as on other goals that address social and economic inequalities.
- Adopt the SDGs domestically, setting goals appropriate for the U.S. context.

Courtesy Meals on Wheels

Hunger, Health, and Inequality

Launching Off Point

"Of all forms of inequality, injustice in health care is the most shocking and inhumane."

— Martin Luther King, Jr., Second National Convention of the Medical Committee for Human Rights, March 25, 1966

KEY POINTS

- Nutritious food is essential to healthy growth and development and can prevent the need for costly medical care.
- Every year, the federal nutrition programs save the country hundreds of billions of dollars in additional healthcare costs.
- Socioeconomic factors such as housing, education, employment opportunities, and access to healthy food have a larger impact on health outcomes than medical care.
- Socioeconomic inequalities drive population-wide health disparities.
- The United States spends more per capita on health care than any other high-income country but compares poorly with others on key population health indicators such as life expectancy and child survival.
- The Affordable Care Act is moving the U.S. healthcare system to shift more resources into prevention to address the root causes of chronic diseases.

In the United States, the issues of hunger and health have been seen as two separate and distinct challenges. That is beginning to change as the system adapts to an ambitious reform agenda driven by the Affordable Care Act (ACA). The objectives (or triple aim) of reform are to improve the patient experience, improve health outcomes for the population, and adopt quality improvements to reduce per capita cost growth. All of these goals will be difficult to achieve as long as hunger and food insecurity rates in the country remain stubbornly high.

Hunger leads to poor health, and poor health contributes to descents into hunger and food insecurity, especially for people who must choose between paying for food or medicine. Up to one-third of chronically ill patients in the United States cannot afford to buy food, medications, or both. Many chronic diseases—the main drivers of cost growth and poor population health—are diet-related. For those who cannot afford it, healthy food is a cost-effective intervention compared to episodic hospital stays.

The ACA encourages healthcare providers to pay closer attention to the social determinants that drive health outcomes. There are many social determinants, and they include

food insecurity and lack of access to healthy food. Through the array of federal nutrition programs and a vast network of charitable organizations offering food assistance, the health system has an infrastructure to work with to support patients who face the agonizing choice of food or medicine, or who must choose between unhealthy food or running out of food altogether. It is a starting point for deeper coordination with a range of partners who are addressing different social determinants of health in their communities, unified behind a common appreciation of the catastrophic effects of poverty on health.

The Double Burden of Hunger and Poor Health

We've seen images of emaciated people, victims of wars, droughts, and famines. Most shocking are those of severely malnourished children, some of whom are brought back from the brink of starvation with therapeutic foods such as Plumpy'Nut. We understand the effects of hunger on human health at once, and there can be little doubt: hunger is deadly.

USDA Photo by Lance Cheung

School meal programs remain one of the most effective means of ensuring children receive the nourishment they need to be healthy.

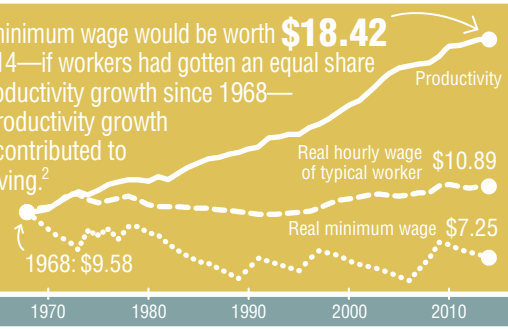
But these scenes always seem to be somewhere else—a long way from home. In the United States, the effects of hunger on health are not as vivid and striking. They are nonetheless real and harmful, from the feast-or-famine cycles that become a way of life for people trapped in poverty, to steady diets of cheap, manufactured junk foods rather than real nutrition. In zip codes less than a few miles apart, average life expectancies are sometimes worlds apart. One reason for differences in life expectancy is the ability to afford or gain access to the foods needed for a healthy life.

Households are food insecure when they do not have reliable and regular access to the foods they need for healthy living.[1] Food insecurity and hunger do not mean the same thing, but they are indivisible. Food insecurity means the specter of hunger is always present, if not on the attack then lurking close by. Food insecurity forces low-income households into

1 in 2 babies

born in the United States is enrolled in the Special Supplemental Nutrition Assistance Program for Women, Infants, and Children (WIC).[1]

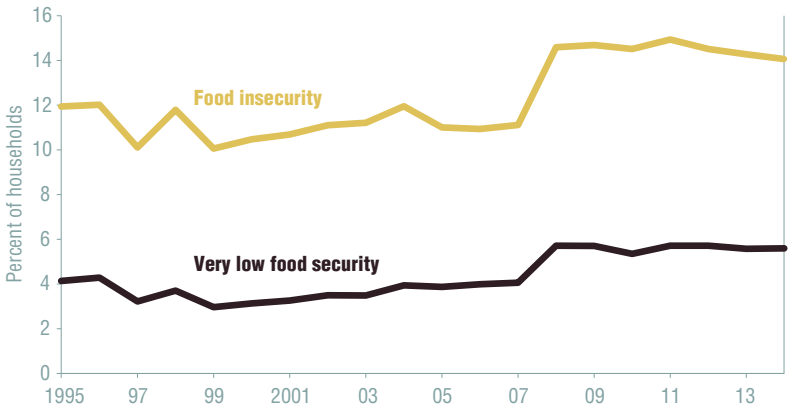
The minimum wage would be worth **$18.42** in 2014—if workers had gotten an equal share of productivity growth since 1968—the productivity growth they contributed to achieving.[2]



making painful decisions, such as paying for medications rather than food, paying the rent, paying to keep the heat on in winter, paying tuition, or paying to fix a car to get to work.[2]

Hunger can damage one's health at any point in life. In Chapter 1, we use a life course lens to show the effects of hunger and food insecurity from the womb through old age. Food insecurity during pregnancy is associated with negative birth outcomes such as preterm and low birth weight and even infant mortality.[3] Food-insecure children are in worse health than their food secure peers, with higher rates of hospitalization, more developmental delays, and educational setbacks; they are more likely to have trouble with anxiety and aggression, setting up early and repeated contact with the criminal justice system.[4]

Figure i.1 **Trends in the Prevalence of Food Insecurity and Very Low Food Security in U.S. Households, 1995-2014**



Food insecurity = Limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways.

Very low food security = At times during the year, the food intake of household members was reduced and their normal eating patterns were disrupted because the household lacked money and other resources for food.

Source: Calculated by USDA, Economic Research Service based on Current Population Survey Food Security Supplement data.

Food insecurity in childhood is a predictor of chronic illness in adulthood. Food insecurity is associated with higher rates of depression, cardiovascular disease, high blood pressure, diabetes, certain types of cancers, and other physical and mental health conditions.[5] People who are food insecure are more likely to be in poor health, and in turn, their poor health increases the risk of being food insecure. This bidirectional relationship of food insecurity and poor health passes from one generation to the next. Parents in poor health may not be able to earn enough income to provide the nutritious food their growing children require for healthy development.

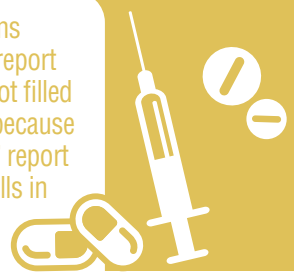
Parents try to protect children from the nutritional impact of food insecurity, skipping meals to ensure children do not have to go without. It is more difficult to protect children against the psychological impacts of food insecurity.[6] Contrary to what parents think their children perceive, studies show that children are well aware their parents are suffering. Dawn Pierce, a

3 percent—the share of federal spending on **nutrition programs**.[3]

24 percent—the share of federal spending on **health care**.[4]

24 PERCENT of Americans who take prescription drugs report they or a family member has not filled a prescription in the past year because of cost. Another **19 PERCENT** report skipping a dose or cutting pills in half because of cost.[5]

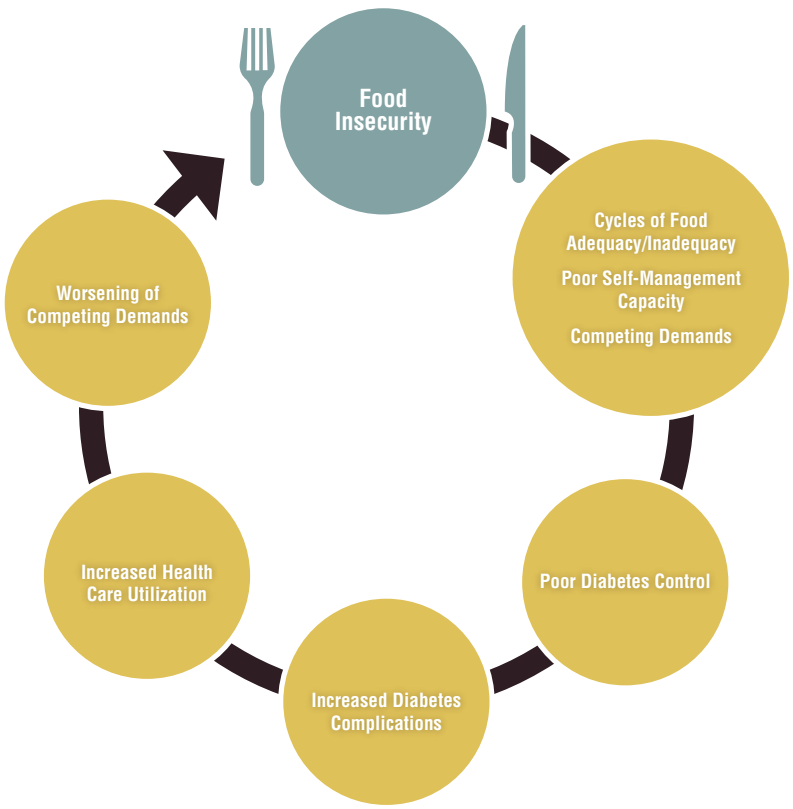
Rx



single mother in Boise, Idaho, struggled against hunger for 14 months after she lost her job as a nurse. See Box i.1. "If I could get three hours of sleep at night it was a luxury," she explained in an interview. Pierce is diabetic and feared the poor quality of food she was consuming would land her in the hospital. Another parent interviewed for this report described how she stared at grocery store flyers left in her mailbox, trying to quell the hunger pangs with pictures of food.

Seniors suffer more severe health effects from food insecurity than younger adults. Food insecurity in older adults lowers resistance to infection, worsening the effects of chronic diseases and making it more difficult to manage their conditions. As the chief beneficiaries of the nation's two largest social insurance programs, Social Security and Medicare, seniors as a group have lower rates of food insecurity than younger adults. Neither of these programs guarantees low-income seniors freedom from hunger, or the loss of independence and spiraling healthcare expenditures that come with it.[7] Out-of-pocket medical costs are a heavy burden on seniors with multiple chronic conditions, and it does not take long to burn through savings to pay for health care.

Figure i.2 **Cycle of Food Insecurity & Chronic Disease: Diabetes**



Source: Hilary K. Seligman and Dean Schillinger (July 2010), "Hunger and Socioeconomic Disparities in Chronic Disease," *The New England Journal of Medicine*, Vol. 363 No. 1.

Food insecurity in the United States, as in the developing world, is closely tied to poverty. The extreme poverty we find in the developing world is rare in the United States. But unlike countries in the developing world, the United States has achieved little progress against domestic poverty. The Millennium Development Goals (MDGs), embraced by all countries in 2000, have helped to spur unprecedented progress against global poverty and hunger, as well as improvements in health and health care. While much still remains to be done, the MDGs have shown that goal-setting works and that poverty reduction and improvements in health are inextricably linked. In 2016, the MDGs will be succeeded by the Sustainable Development Goals (SDGs), which call on all countries to end hunger and poverty by 2030 and to improve health outcomes for all. We will have more to say about these monumental initiatives in Chapter 3 and the Conclusion. As the global community embarks on the SDGs, it is time the United States commits to setting and achieving its own development goals.

Box i.1

"NO WONDER I FELT THE WAY I DID"

by Dawn Pierce

June 8, 2008, I remember the day vividly—the nurse practitioner told me I had Type 2 Diabetes. I argued with her that was not possible. I'm a nurse, I do diabetic counseling, and I don't pig out on junk.

Once I came back to reality, I realized I had to have a plan to manage my condition. For a year and a half things were going well. I lost weight and was on oral medications. Then the recession hit and my employer laid me off: January 10, 2010, another day I remember vividly.

I did receive unemployment insurance, which was helpful, but not enough to replace what I was making—and yes, I was relentlessly looking for a job.

I had stopped seeing the nurse practitioner. She didn't like that, and neither did I, but it didn't seem like I had much of a choice. I couldn't afford to pay her any longer.

I realized that to properly take care of my son, I was going to have to ask for help. When I went to apply for food stamps, I sat in the car for an hour and cried before going in.

I bought the most food I could afford for the $317 per month in SNAP* benefits we qualified for. I most certainly did not want to eat junk, but cans of chili, packs of frozen burritos and frozen pizza are a lot cheaper than a roast, ham, or pork chops.

Dawn Pierce joined Bread for the World activists in June 2013 to lobby on Capitol Hill against cuts to the national nutrition programs.

It took about three months after we started receiving SNAP before I noticed I was feeling cruddy all the time. Eating processed foods is okay now and then. When you make a regular diet of it, they clog your whole body with sludge and drag you down.

I remember lying awake in bed one night, my thoughts scattered and my mind racing. When is the rent due again? I wonder if the power company will take $20 this month and let me pay the rest later? I hope Joel doesn't need something baked or cooked for a school event. What am I going to do about Christmas?

I got out of bed to check my blood sugar. 279—Holy Smokes! I ran through everything I'd eaten that day: Coffee, muffin, pop-tarts, ramen, grilled cheese, and Diet Coke. No wonder my blood sugar was skyrocketing, and no wonder I felt the way I did.

$317 per month in SNAP benefits is $79.25 per week, $5.60 per person per day. Imagine someone handing you five dollars, two quarters and a dime and telling you to feed yourself three meals a day with that, and yes, make sure the food is healthy.

Dawn Pierce lives in Boise, Idaho, where she is currently employed full-time as a nurse. This reflection is an edited version of an interview for the Hunger Report.

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* SNAP is the Supplementary Food Assistance Program, formerly known as the Food Stamp Program.

A Two-headed Pandemic: Food Insecurity and Obesity

The Great Recession of December 2007 to June 2009 was the worst economic slump since the 1930s,[8] and it pushed the number of food insecure Americans to record highs, where they've continued to remain due to the anemic recovery. From 2008 to 2014, no less than 48.1 million people per year in the United States were food insecure.[9] In 2014, 19.2 percent of households with children (7.5 million) reported being food insecure. In about half of these households, only the adults were food insecure.[10] Many of these adults are employed. They are food insecure due to low wages, or they are paying too much for transportation or child care or other necessary costs to hold on to their jobs. The Earned Income Tax Credit (EITC) and the refundable portion of the Child Tax Credit (CTC) are the nation's strongest tools to help working families escape poverty and food insecurity. Improvements to the EITC and CTC that were enacted during the Great Recession are set to expire in 2017. Allowing these to expire would force 16.4 million people, including 7.7 million children, to sink into poverty or deeper poverty than they already are.[11]


Zach Blum for Bread for the World

The Earned Income Tax Credit and Child Tax Credit in 2013 lifted out of poverty or made less poor 13.1 million children.

The U.S. Census Bureau conducts an annual survey to collect national food security data. The Department of Agriculture (USDA) analyzes the data and publishes an annual report, *Household Food Security in the United States*. Since the year 2000, the number of people in the country who were food insecure has never fallen below 30 million.[12] USDA groups food insecure households into one of two categories: "low food security" or "very low food security." Households with very low food security are those experiencing the deepest levels of poverty. Low food security is prevalent in households with incomes two and three times the poverty level.[13] (In 2015, the poverty threshold for a family of four was $24,420.)[14]

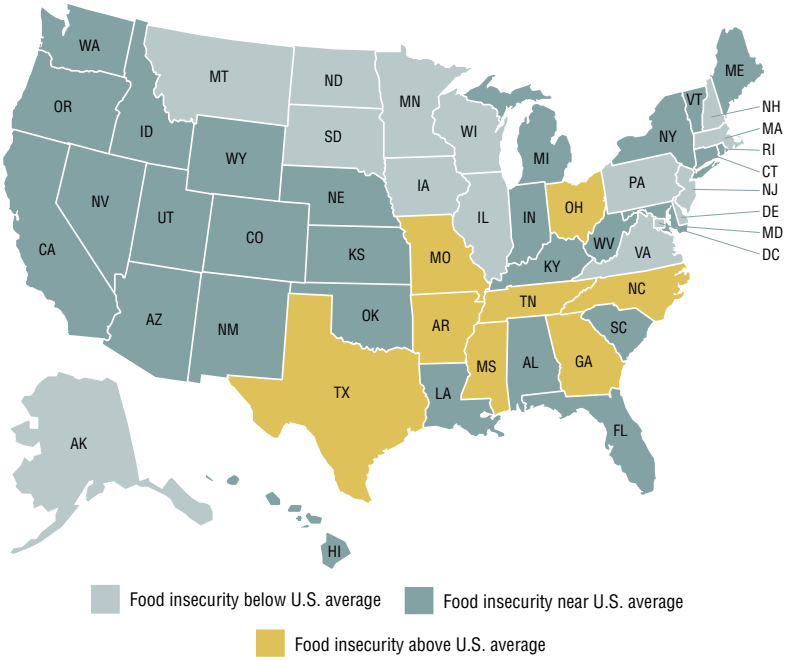
Prior to 2006, households with low food security were categorized as "food insecure without hunger," and those with very low food security "food insecure with hunger." The change in the nomenclature was necessary, according to USDA, to disentangle the physiological state of hunger from indicators of food availability.[15] The survey itself continues to ask respondents whether they experienced hunger. Experts analyzing the data may not like to use the word hunger, but it seems to be impossible to talk about it any other way with experts who know what it feels like to be hungry.

Not everyone agrees hunger and food insecurity are pressing problems in the United States. Skeptics contend the official data overstate the actual levels of hardship in the country.[16,17] But according to Mark Nord and Alisha Coleman-Jensen, very low food insecurity may actually be *understated* among households with children.[18] In USDA interviews with families receiving food assistance, researchers found "adults in the study, including those who are food secure by our survey measure, have skipped meals so often and for such a long time, that it is not described as anything out of the ordinary; in fact, it is seldom even conceived of as a hardship."[19] Mariana Chilton and Jenny Rabinowich explain also, "Caregivers are often reluctant to admit that their children may not be getting enough food due to shame or due to the fear that their children might be removed from the home by authorities."[20]

Households with children are categorized as food insecure if they answer three or more of the survey questions affirmatively. The survey consists of 18 questions (or 10 questions for households without children). Questions include: "In the last 12 months, were the children ever hungry but you just couldn't afford more food?" (Yes/No), and "In the last 12 months, did any of the children ever not eat for a whole day because there wasn't enough money for food?" (Yes/No).[21]

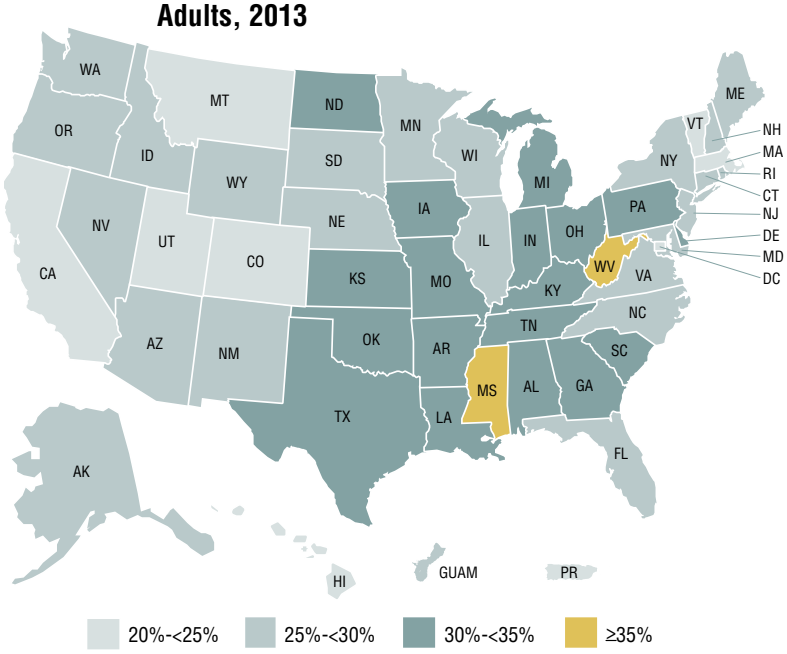
At the World Food Summit in 1996, the international community agreed on the following definition of food security: "when all people

Figure i.3 **Prevalence of Food Insecurity, Average 2011-2013**



Source: USDA, Economic Research Service

Figure i.4 **Prevalence of Self-Reported Obesity Among Adults, 2013**



Source: Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance Systems

at all times have access to sufficient, safe, *nutritious* food to maintain a healthy and active life."[22] The U.S. food security survey focuses on food deprivation due to lack of economic resources. The emphasis on *nutritious* food in the quotation above is ours. Only one question in the U.S. food security addresses diet quality, and it does so indirectly: "(I/we) couldn't afford to eat balanced meals." Respondents are asked to choose "often, sometimes, or never true."

The National Health and Nutrition Examination Survey (NHANES), conducted by the Centers for Disease Control and Prevention (CDC), a division of the Department of Health and Human Services (HHS), reaches a much smaller population but provides the most in-depth analysis about the nutritional status of Americans. About half of the people participating in the survey are children.


Laura Elizabeth Pohl for Bread for the World

Surveys show food insecurity occurring in households with incomes up to two and three times the poverty level.

NHANES is the nation's primary data source on overweight and obesity. Like food security, obesity is associated with increased risk of chronic illness. In 2005, an article published in the *New England Journal of Medicine* reported that the current generation of U.S. children will be the first to have a shorter life expectancy than their parents, and the authors placed the blame directly on the dramatic rise in childhood obesity.[23]

The stove piping of food insecurity data at USDA and obesity data at HHS may inadvertently be reinforcing the perception that food security is primarily about food availability and not a health issue. This could not be further from the truth. The *Dietary Guidelines for Americans*, a joint effort on the part of USDA and HHS, states unequivocally that food insecurity is "an independent risk factor for poor physical and mental health outcomes across the lifespan."[24]

The childhood obesity rate in the United States has more than doubled since the early 1980s.[25] Low-income children and adults have higher obesity rates than their higher income peers,[26] but the majority of obese children and adults are not low-income.[27] Obesity is a complex problem, but one simple fact is that people in the United States consume more calories per capita per day than people in any other country, and diets are higher in saturated fats and lower in fresh fruits and vegetables than in peer countries.[28] Except for young children, the majority of Americans do not consume the recommended daily amount of fruits, and an even greater majority fails to get the recommended amount of vegetables.[29]

Calorie consumption has been declining since the early 2000s, both for adults and children, cutting across all the major demographic groups: whites, blacks, and Hispanics.[30]

The early 2000s was when healthcare professionals in large numbers began to speak differently about obesity, reframing it as a public health crisis rather than a personal problem for individuals to deal with independently. In addition to the article in the *New England Journal of Medicine*, the surgeon general issued a report, *Call to Action to Prevent and Decrease Overweight and Obesity*, which was immediately compared to the 1964 surgeon general's report on smoking and health. That report is credited as being a catalyst for dramatic changes in public attitudes about smoking.

Normally, healthcare leaders leave it for someone else to talk about food insecurity. But there have been prominent exceptions. Pediatrician Sandra Hassink, while president of the American Academy of Pediatrics in 2014-15, spoke out publicly about the triple threat to children of obesity, food insecurity, and malnutrition.[31] It will once again take the healthcare sector speaking in concert for food insecurity to be reframed as a public health problem as obesity has been.

The *Dietary Guidelines for Americans* states unequivocally that food insecurity is "an independent risk factor for poor physical and mental health outcomes across the lifespan."

There is much confusion about the associations between food insecurity and obesity—even in medical, academic, and policy circles. The prevalence of obesity does not discredit the fact that the United States has wide-scale food insecurity: the same person can be suffering from both obesity and hunger. This is because conditions that are common in food insecure households—episodic food shortages, reliance on high energy-dense foods to stretch food dollars, stress and depression—are all risk factors for weight gain. We need to think of obesity and food insecurity as co-occurring health conditions. *Poverty increases a household's vulnerability to both.* A healthy diet is the most effective intervention against obesity—and it is also inaccessible to millions of food insecure families.

The Nutrition Safety Net–A History of Safeguarding the Health and Well-being of Children and Adults

In 1946, Congress established the National School Lunch Program, the first food assistance program available to all of the nation's children, following an investigation that showed malnutrition to be the main reason two out of five draftees had been rejected for military service during World War II.[32] Today, 31 million elementary and secondary school children participate in the program, two-thirds of them qualifying for free or reduced price meals based on household income levels.[33]

In 1961, President Kennedy's first Executive Order was to launch a pilot food assistance program. Kennedy was appalled by the conditions he encountered in West Virginia's coal mining communities while campaigning for the presidency. He promised the miners and their families to provide relief once elected. In 1964, with President Johnson in the White House, Congress enacted legislation to make the pilot version of the Food Stamp Program permanent, and it has been the country's main safety net program against hunger and food insecurity ever since. In 2008, the name of the program was changed to the Supplemental Nutrition Assistance Program (SNAP).

The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) was initiated in 1972 as a two-year pilot and became a permanent program in 1975.[34] WIC

is available to income-eligible pregnant women, post-partum women with a child under six months, breastfeeding women with a child under 12 months, infants, and children under the age of 5. Presently, half of all children born in the United States qualify for WIC based on family income, and the program serves close to 9 million participants per month, most of them children.

The federal nutrition programs were established with the explicit aim of safeguarding the health and well-being of children and adults. In all, there are 15 domestic nutrition programs administered by USDA. One in four Americans participates in at least one of these programs at some time during the year.[35] Descriptions of all the programs are included in Appendix 1. We don't plan to review them all here, other than to note the major ones that serve the most people.

USDA photo

President Johnson signing the Food Stamp Act of 1964, establishing the country's flagship nutrition program, known today as the Supplemental Nutrition Assistance Program (SNAP).

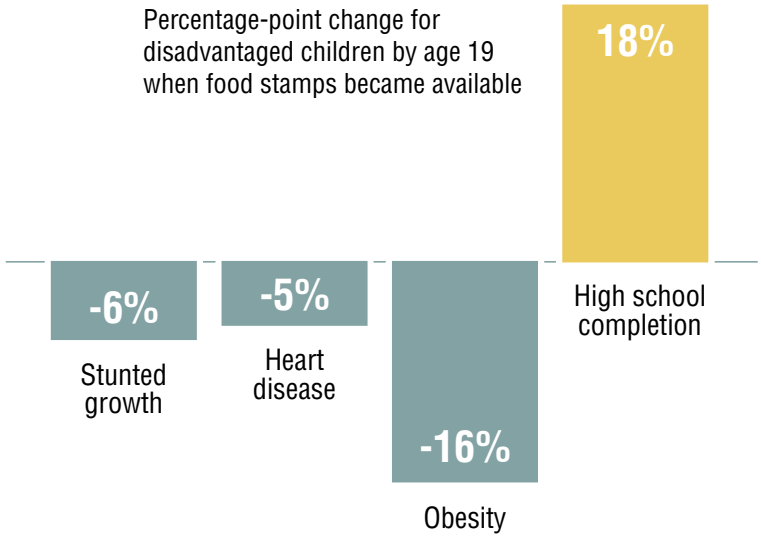
The school lunch program has a long history of improving children's health and reducing food insecurity.[36] The latest research shows the program continues to reduce food insecurity among low-income children who qualify for free or reduced price meals.[37] All meals served in the program must meet strict nutritional guidelines. Multiple studies have shown that on average school lunches are healthier than home-packed meals.[38] The lunches must include at least one-third of the Recommended Dietary Allowances of protein, vitamin A, vitamin C, iron, calcium, and calories. No more than 30 percent of a lunch's calories may come from fat, with less than 10 percent from saturated fat.[39] In 2012, schools began incorporating healthier nutrition standards into their meal programs, as directed by the Healthy, Hunger-Free Kids Act of 2010, and 95 percent of schools are meeting these new standards.[40]

Research leaves little room for doubt that SNAP protects the health and well-being of children and adults who participate in the program. Several studies have shown that SNAP improves the nutritional quality of the foods they consume—and yet studies also have shown SNAP recipients consume less protein, less fiber, less calcium, and less of other key micronutrients than the general population.[41] For reasons unrelated to the program, SNAP recipients tend to be less healthy than eligible non-participants. But this is not a surprise. Those most in need of the program are also likely to be in the poorest health. Adults on SNAP are much more likely than eligible nonparticipants to have chronic conditions such as diabetes, hypertension, and cardiovascular disease. Children are more likely to have been diagnosed with

a learning disability or other developmental delay. And families are also more likely to have had to postpone medical care because they couldn't afford it. [42]

In 2010, the Urban Institute analyzed close to a decade of data and found SNAP reduced food insecurity by roughly 30 percent and very low food insecurity by 20 percent.[43] A more recent study of nearly 3,000 households with children published in *Pediatrics* found child food insecurity rates were one-third lower in households that had been receiving SNAP for 6 months or more than for households recently approved for SNAP but not receiving benefits yet.[44] From 2011 to 2013, USDA conducted a pilot study giving a set of families with children $60 of additional SNAP benefits during the summer months when the children were out of school and no longer receiving free or reduced price lunches. Very low food security among these children decreased by 33 percent.[45]

Figure i.5 **Children With Access to Food Stamps Fare Better Years Later**



Source: Center on Budget and Policy Priorities (2015), Policy Basics: Special Supplemental Nutrition Program for Women, Infants, and Children. Hilary W. Hoynes, Diane Whitmore Schanzenbach, and Douglas Almond (November 2012), "Long Run Impacts of Childhood Access to the Safety Net," National Bureau of Economic Research.

To study the long-term effects of the program, one group of researchers went back to the 1960s, when the Food Stamp Program was being rolled out county by county in rural Mississippi. What is interesting about this study is they were able to compare the effects in communities with nearly identical socioeconomic conditions, the only difference being that some communities had access to the program and others did not. Most studies of the program are not able to control for the inherent selection bias due to the fact that participation is by choice. The staggered rollout of the program provided a control group to overcome selection bias. In the communities where food stamps were available, researchers found the benefits to the children in the program were significant, particularly in areas of health. "Examining adults aged in their thirties to fifties who had differential access to the Food Stamp program during their childhoods in the 1960s and 1970s, we found that adults' health—as measured by self-reported health status, obesity, and reported diagnoses of diabetes and other chronic conditions—was markedly improved if they had access to the safety net during childhood. In particular, we found that access to food stamps mattered most in early childhood, through ages three to five."[46] Access to food stamps also corresponded with increases in education, earnings, employment and income, and a reduction in poverty.[47]

Unlike SNAP and the school lunch program, WIC is not an entitlement program, meaning it does not have to serve all income-eligible families that apply. When a local

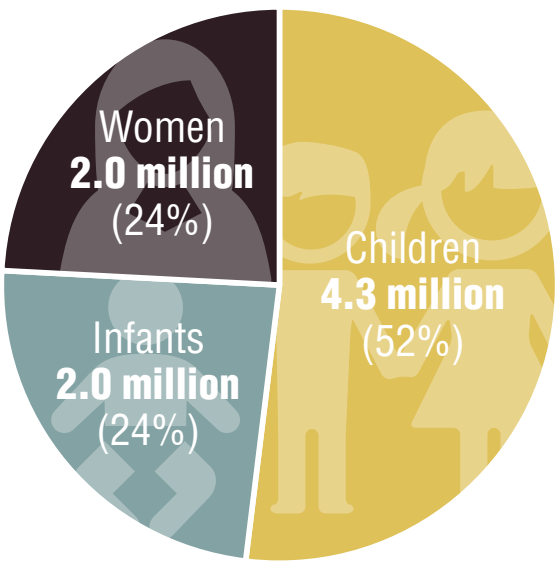
WIC agency reaches its maximum caseload, vacancies are filled according to which applicants are determined to be most at risk nutritionally.[48] WIC has been shown to reduce the prevalence of child food insecurity by one-third and very low food security by at least two-thirds.[49] WIC has also been shown to improve birth outcomes.[50] Pregnant women who experience food insecurity and malnutrition have a much higher risk of preterm birth and delivering a child with low birth weight. The average medical cost for a premature/low birth weight baby is $49,033, compared to $4,551 for a baby born without these complications,[51] while it costs approximately $743 a year for a pregnant woman to participate in WIC.[52]

In 2010, the Urban Institute analyzed close to a decade of data and found SNAP reduced food insecurity by roughly 30 percent and very low food insecurity by 20 percent.

Fighting hunger remains primarily the role of the federal nutrition programs. In recent decades, the mandate has broadened to include fighting obesity. Let's Move, the program developed by First Lady Michelle Obama to fight childhood obesity, has moved aggressively to improve the quality of school meals. Changes to foods allowable in WIC occurred at least partly to fight obesity among low-income preschoolers. Those efforts seem to be paying off, with childhood obesity levels finally leveling off. The convergence of objectives around hunger and obesity was inevitable given how much obesity has increased in recent decades. The problem is that the nutrition programs are carrying a disproportionate share of the load to fight these twin pandemics.

Figure i.6 **WIC Serves More Than 8 Million Low-Income Women, Infants, and Children**

	Number of participants	Share of total participants
CHILDREN		
4 years old	0.7 million	9%
3 years old	1.0 million	12%
2 years old	1.1 million	13%
1 year old	1.5 million	18%
INFANTS	2.0 million	24%
WOMEN		
Pregnant	0.8 million	10%
Breastfeeding	0.6 million	7%
Other postpartum	0.6 million	7%



Source: Center on Budget and Policy Priorities (2015), Policy Basics: Special Supplemental Nutrition Program for Women, Infants, and Children.

Discrimination and the Determinants of Health

The Navajo Nation, the largest reservation in the United States, straddles territory in Arizona, New Mexico, and Utah: 27,000 square miles.[53] There are a total of 10 grocery stores on the reservation, an area the size of West Virginia and home to more than 180,000 people. The food insecurity rate on the reservation is five times the national average,[54] and the obesity rate three times the national average.[55]

The Navajo Nation is a "food desert," an area with limited access to affordable and nutritious foods that is most common in low-income communities.[56] In urban areas, a food desert is defined as a Census tract where at least one-third of the population lives more than a mile from the nearest supermarket or full-service grocery store. For rural areas, that distance is 10 miles.[57] The Navajo Nation may be an extreme example, but all hardships in Indian country are extreme. If we were looking for conditions in the United States similar to the ones we see in developing countries, such as families living without running water or electricity, we would go straight to Indian country.


Joseph Molieri/Bread for the World

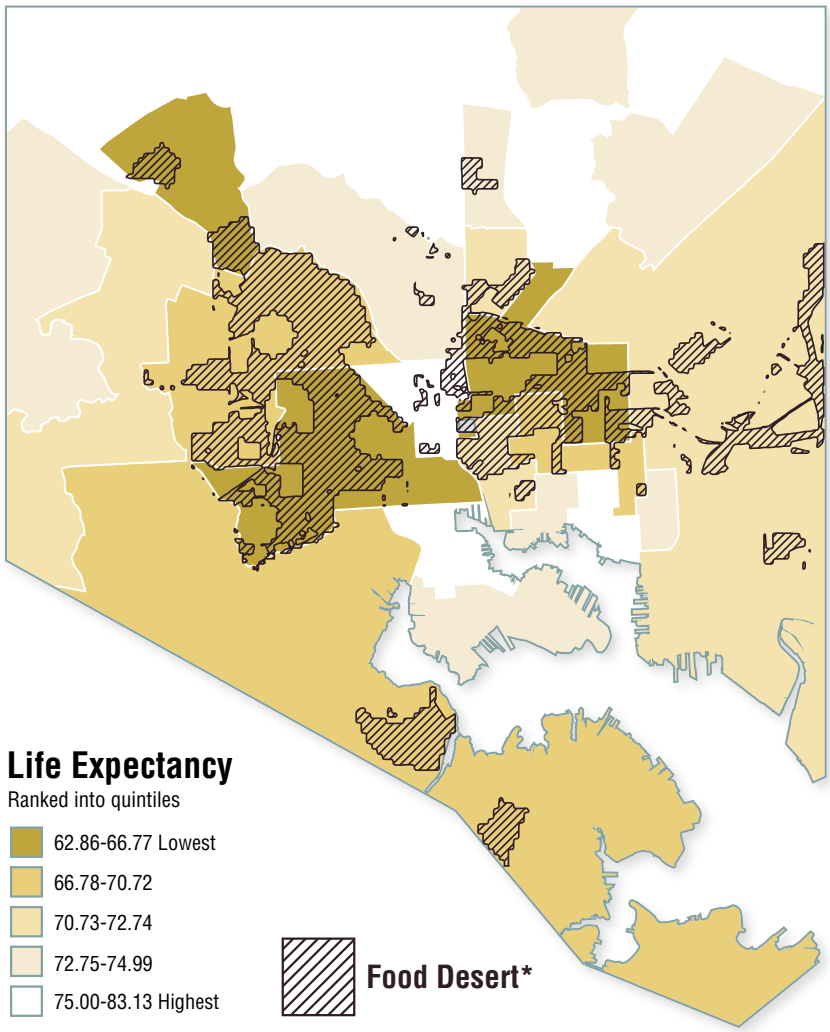
Supermarkets in zip codes with predominantly black residents have been found to charge more for the same products as supermarkets in zip codes with predominantly white residents.

Discrimination is a known factor associated with health disparities.[58] Urban communities of color, regardless of income, have fewer supermarkets or full-service groceries than low-income white communities.[59] Living in a food desert is just one example of how discrimination harms health. Racial and ethnic minorities living in urban areas not only have poorer access to healthy food, for example, but the air they breathe is of lower quality, making them more vulnerable to respiratory illnesses. African American children are more likely to be hospitalized for asthma than white children. Rates of low birth weight are highest among African Americans, and low birth weight babies have weaker lung capacity than heavier babies, thus making them more susceptible to respiratory illness.[60]

In 2015, socioeconomic inequalities in Baltimore captured our attention. The tragic death of Freddie Gray, a young African American man held in police custody, highlighted issues of police violence in the community. A health lens reveals other life threatening inequalities. Gray was exposed to hazardous levels of lead paint as a child.[61] Lead exposure is a housing-related hazard that continues to affect children in high-poverty urban areas. Approximately half a million U.S. children between the ages of 1 and 5 are exposed to toxic levels of lead every year.[62] New research shows that low levels of lead exposure once thought to be safe are harmful to children's cognitive development.[63] In 1978, Con-

gress banned use of lead paint. Two decades later, when Gray's exposure occurred, inner city Baltimore's housing stock was still coated in lead paint. Statistically, the average child growing up in Seton Hill, one of the city's poorest neighborhoods, is not expected to live long enough to begin collecting Social Security. Just three miles away in Roland Park, one of the city's wealthier neighborhoods, the average child can expect to live to be 84.[64] A color-coded map of food deserts in Baltimore does not look very different than a similarly coded map of areas with the shortest life expectancies. See Figure i.7. Fifteen Baltimore neighborhoods, including the one where Gray lived, have lower life expectancies than North Korea.[65]

Figure i.7 **Life Expectancy and Food Deserts in Baltimore City**



*Food Desert: An area where the distance to a supermarket is more than ¼ mile, the median household income is at or below 185% of the Federal Poverty Level, over 40% of households have no vehicle available, and the average Healthy Food Availability Index score for supermarkets, convenience and corner stores is low (measured using the Nutrition Environment Measurement Survey).

Source: Baltimore City Health Department, Johns Hopkins Center for a Livable Future

Cost-related medication underuse is a common problem in low-income communities. A number of studies have noted a relationship between food insecurity and underuse of medication. Lack of health insurance or underinsurance can put the price of the medication out of reach. A study looking at neighborhoods in Chicago turned up another factor to explain medication underuse: residents of segregated black communities had to travel longer distances to fill prescriptions than residents of mixed communities or segregated white communities. Approximately one million people in the city live in what the researchers describe as a "pharmacy desert."[66]

Until the places where people live are conducive to good health, we should not expect that health insurance by itself will be enough to reduce health disparities. Health insurance is necessary, but not sufficient, to ensure good health. Even in countries with universal access to health care, we find signifi-

cant health disparities driven by socioeconomic status. Another limitation is that having health insurance does not mean people understand how to make healthy choices.

Researchers at the University of Buffalo School of Medicine and Biomedical Sciences studied the relationship between infant feeding practices and maternal education. Mothers with fewer years of formal education were found to be feeding their babies diets higher in sugar and fat than more educated women.[67] The American Academy of Pediatrics recommends exclusive breastfeeding for the first six months after birth.[68] College-educated mothers are much more likely to breastfeed the full six months. Many women in low-income households may not be able to breastfeed this long. College-educated women often can because their jobs allow longer maternity leave.

Good jobs. Good schools. Healthy food. Clean air. These are well outside the scope of what most healthcare providers do. A national poll of U.S. doctors found that 4 in 5 believe unmet social needs undermine their ability to provide quality care, and 3 in 4 feel the health care system should be supporting such services when a doctor determines these are essential to improving patient outcomes.[69]

Health and Health Care: Swimming Upstream Towards Prevention

Life expectancy in the United States increased by 30 years over the course of the twentieth century.[70] Five of these additional years were due to improvements in medical care, the remaining 25 to improvements in public health. The landslide achievements for public health include many nonmedical factors, such as new water and sanitation infrastructure, safer workplaces, safer and healthier foods, lower rates of tobacco use, and new technologies that made motor vehicles safer.[71]

Life expectancy did not increase evenly for all. For example, whites live longer on average than blacks, the rich longer than the poor. A considerable body of research tells us that nonmedical factors play a larger role in determining health outcomes than medical factors do.[72] See Figure i.8. Food insecurity, for example, increases a person's chances of becoming a high-cost user of healthcare services within 5 years by nearly 50 percent.[73]

Figure i.8 **What Determines Health?**

Source: J. Michael McGinnis, Pamela Williams-Russo, and James R. Knickman (March 2002), "The Case for More Active Policy Attention to Health Promotion," *Health Affairs* Vol. 21 No. 2.

The most consistent predictor an adult will die in any given year is his or her level of education.[74] In medical jargon, education is a "social determinant of health."[75] Health literacy, as defined by the Robert Wood Johnson Foundation, "is the degree to which individuals have the capacity to obtain, process and understand basic health information and services needed to make appropriate health decisions and adhere to sometimes complex disease management protocols."[76] Virtually every encounter with the healthcare system is a test of a person's health literacy skills, and health literacy is directly related to educational outcomes.

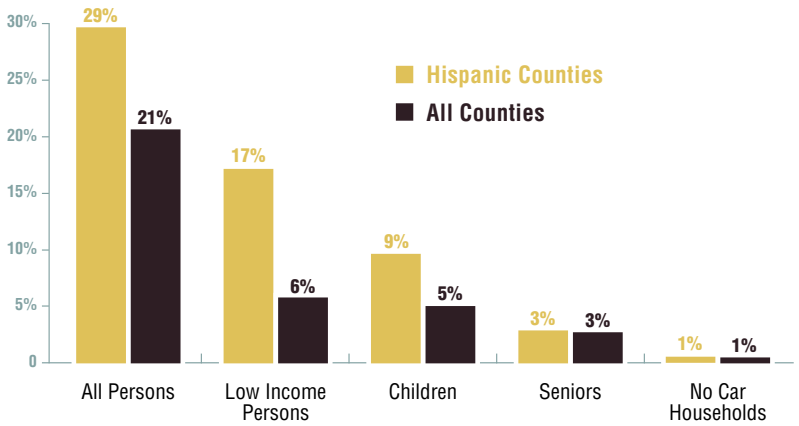
Box i.2

THE FOOD ENVIRONMENT IN LATINO COMMUNITIES

by National Council of La Raza

Healthy food choices are much easier to make in a supportive food environment—where healthier foods, such as fresh fruits and vegetables and foods that are less processed, are available and affordable. Too many Hispanic families do not live in a supportive food environment. Counties with large Hispanic populations have a greater proportion of people with limited access to grocery stores (29 percent) than other counties do (21 percent). Latino children and low-income people are at particular risk (see Figure i.9).[77]

Figure i.9 **Percent of People with Low Access to Grocery Stores, 2010**



Source: Calculations by NCLR based on USDA, Food Environment Atlas, 2010 data set found at http://www.ers.usda.gov/data-products/food-environment-atlas.aspx.

In a national survey, more than 10 percent of Hispanics reported difficulty in accessing affordable fresh fruits and vegetables—a higher rate than any other racial/ethnic group. The survey also found that access to fresh produce is linked with better health: people who reported that they were in poor health were four times as likely to face access barriers as people who said they were in excellent health (20 percent vs. 5 percent).[78]

Research shows that larger chain supermarkets tend to carry more healthy food items, such as produce, at lower prices, while smaller convenience stores tend to carry less fresh produce and more snack foods that are calorie-rich but nutrient-poor. Thus, neighborhood convenience stores typically cannot compensate for the lack of a supermarket that offers healthy foods.[79]

Hispanic neighborhoods, particularly those in nonurban areas, have almost one-third fewer chain supermarkets but more convenience stores than non-Hispanic neighborhoods.[80] Better access to chain supermarkets has been associated with lower adolescent body-mass index (BMI) scores and lower rates of overweight. Greater access to convenience stores, in contrast, has been associated with higher BMI and frequency of overweight.[81] Latino children have high rates of overweight and obesity and are consequently more likely to develop largely preventable diseases such as diabetes.[82] All signs indicate that any discussion of public health should include a look at the local food environment.

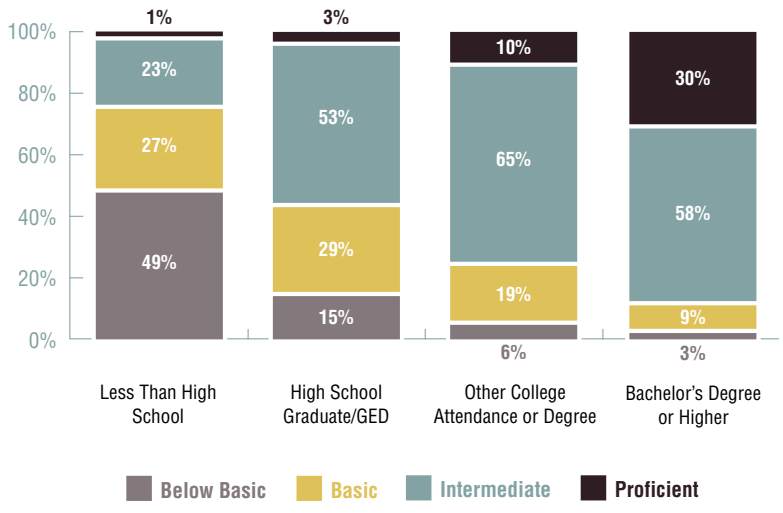
The National Council of La Raza–the largest national Hispanic civil rights and advocacy organization in the United States–works to improve opportunities for Hispanic Americans. Learn more at www.nclr.org.

In turn, educational outcomes are linked to the quality of schools one attended, and the quality of schools to socioeconomic conditions.

Nearly half of adults surveyed with less than a high school education have "below basic" levels of health literacy.[83] A parent without a high school degree is statistically more at risk of raising a child in a hungry household than a parent who finished high school. Without a degree the parent earns lower wages and faces longer spells of unemployment. This means that the family's housing options are limited, their neighborhood is less safe, and the increased stress caused by living under these conditions often creates strife at home. Hunger undermines a child's ability to learn. Falling further behind with each hungry year, the child drops out like mom or dad. Now there are two generations with limited capacity to follow medical instructions.

Today, public health is concerned with the factors that perpetuate population health inequities. "Where people live, work, learn, and play has a greater influence on their health than what goes on in the doctor's office, yet the health-care system bears the brunt of these problems when they ultimately lead to poor health outcomes." [84] This statement appears in a 2015 report, *A Prevention Prescription for Improving Health and Health Care in America*, written by a taskforce of health experts under the aegis of the Bipartisan Policy Center. Their overarching recommendation is telegraphed right there in the title of the report: Invest in prevention.

Figure i.10 **Adults' Health Literacy, By Highest Level of Educational Attainment, 2003**



Source: U.S. Department of Education, Institute of Education Sciences (2006), *The Health Literacy of America's Adults: Results from the 2003 National Assessment of Adult Literacy.*

Time and again research has confirmed the age-old maxim that an ounce of prevention is worth a pound of cure.[85] Prevention strategies take place "upstream" and affect the social determinants of health. Public health departments and the social service providers they partner with work upstream. Medical care is "downstream." By the time a person with a chronic illness arrives downstream, damage control is the best doctors can do. They may have little to offer but efforts to slow down the progression of a disease.

According to one study, a 10 percent increase in public health spending could achieve a 3.2 percent reduction in cardiovascular mortality. For the average metropolitan community, that would free up $312,274 in cost savings each year for other uses. Lowering deaths from cardiovascular disease by 3.2 percent through medical care alone would require hiring an additional 27 doctors, which would cost substantially more than a 10 percent increase in public health spending.[86]

As the U.S. healthcare system evolved over the second half of the twentieth century, technological advances in medicine and an increasing focus on specialization drew attention away from the cost effectiveness of investments in public health. Roughly 80 percent of doctors in the United States are specialists, even though research shows that primary care physicians save more money for patients and the health system.[87]

Health care in the United States has been labeled a "sick care system," overemphasizing treatment at the expense of prevention.[88] This is reflected in the tiny fraction of government health spending that is dedicated to public health activities—in 2012, only 2.7 percent of federal and state health spending combined.[89] The Institute of Medicine states, "The aims of public health agencies (that focus on the health of communities) and healthcare organizations (that typically focus on individual patients) are not aligned, nor are the resources and political visibility associated with them comparable."[90] Public health has none of the lobbying firepower of the pharmaceutical companies or medical-device manufacturers, not to mention that of the alcohol, tobacco, and less-than-healthful food and beverage lobbies, whose products are as severe a problem for public health as antibiotic-resistant disease strains are for medical care.

Rick Reinhard for Bread for the World

The longer children spend in poverty the higher the chances they will develop asthma and other respiratory conditions.

The ACA has authorized the largest expansion in federal public health spending since the 1960s. The ACA remains controversial, partly because the media fixates on the political and judicial battles, paying little attention to what the law has already achieved. The ACA has already reduced the share of the U.S. population without health insurance to unprecedented levels, and lack of health insurance has decreased most markedly for minority groups.[91]

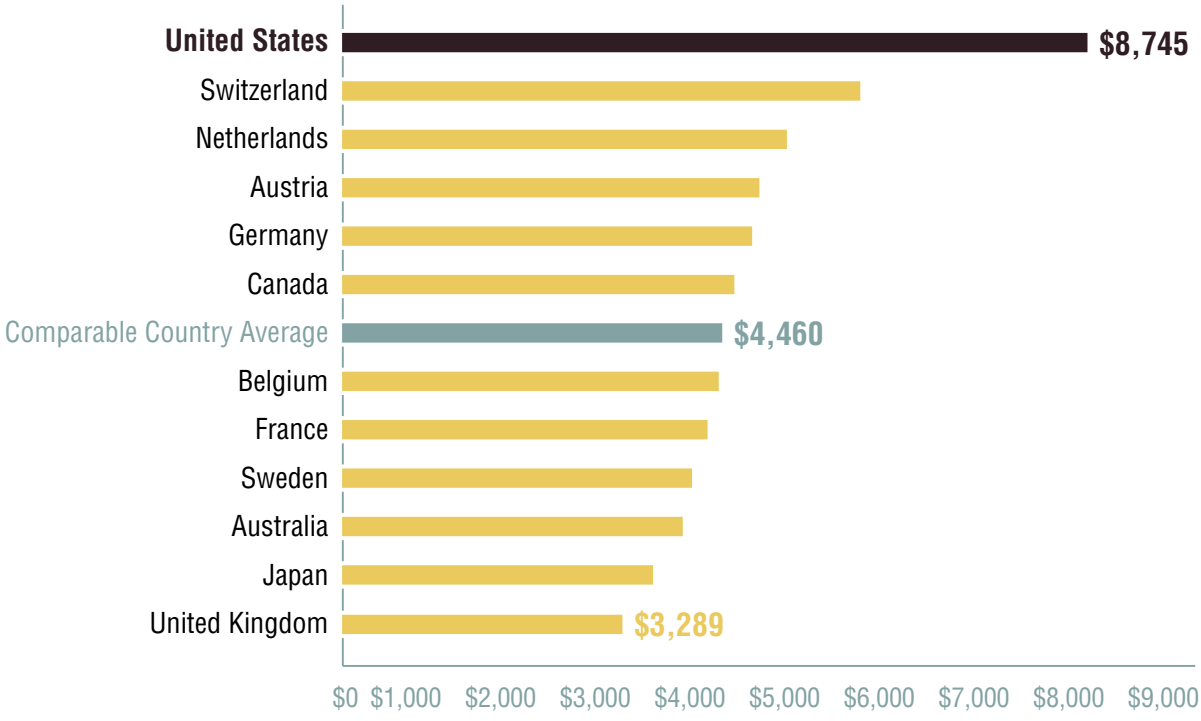
In countries where healthcare costs are lower and health outcomes better, health systems typically place far more emphasis on prevention. The United States spends on average twice as much on health care per capita as peer countries.[92] See Figure i.11. Reducing the rate of growth in healthcare spending will require changes in the basic model of how the U.S. health system has operated for the past half-century. This model is known as "fee for services." Doctors are paid for the services they provide, and whether a patient's health improves is immaterial. This is actually backwards—focused on providing health care rather than on promoting health. If a patient's condition improves quickly and requires fewer services, the doctor receives no compensation for the improvement and the savings it brings both the patient and insurers.

Now, however, the incentive structure is changing. Rather than financial rewards for filling hospital beds, the system sometimes offers incentives to keep them empty. This is why doctors and other health professionals are beginning to pay more attention to the social determinants of health. Medicare and Medicaid are the proving grounds for the reforms in the ACA. Medicare covers 55 million people—predominantly seniors but also younger people with long-term disabilities.[93] Medicaid covers nearly 70 million low-income children and nonelderly adults, dual-eligible seniors who are also covered by Medicare, and people with a range of disabilities. The ACA expanded Medicaid eligibility to low-income nonelderly adults in households earning up to 138 percent of the poverty level. Medicaid expansion has been concentrated in communities with the largest health disparities, so the health care systems that serve these populations have good reason to pay attention to the social determinants of health.

Access to health insurance is a key social determinant of health.[94] At this writing, 20 states have chosen not to accept federal funding to expand their Medicaid programs. Medicaid, unlike Medicare, is a federal-state partnership, which is why the Supreme Court ruled in 2012 that states have the right to reject Medicaid expansion. More than half of adults who would qualify for Medicaid in these states are working full- or part-time. The most common

Figure i.11 **On Average, Other Wealthy Countries Spend About Half as Much Per Person on Health Than the U.S. Spends**

Total health expenditures per capita, U.S. dollars, PPP adjusted, 2012



Peterson-Kaiser Health System Tracker, data provided by Organization for Economic Cooperation and Development.

Box i.3

MASS INCARCERATION: A PUBLIC HEALTH CRISIS

by Barbara T. Baylor, United Church of Christ

All people deserve the opportunity to reach their full potential—and part of this is being able to make choices that lead to good health and quality of life. But the United States has a widening gap between those who have a fair chance to make these choices and those who do not.

As the World Health Organization points out, large differences within countries in health outcomes are not only unnecessary and avoidable, but also unfair and unjust. Poverty, low socioeconomic status, racial discrimination, gender bias, disabilities, and mental health conditions all contribute to today's significant health disparities in the United States.

An individual's resources—such as money and power—most often shape the economic and social conditions he or she lives under. Another influence on people's environments, though, is that of the policies and choices that decision-makers support. Policies that affect food security are one example.

A ban on food assistance for ex-offenders and their families works at direct cross-purposes to the goal of improving family and community safety and security.

In many states, people who have been convicted of a drug-related felony and have served their sentences are banned or restricted from participating in SNAP (formerly food stamps) and TANF (Temporary Assistance for Needy Families).[95] These bans also apply to the formerly incarcerated person's entire household, including children.

People with lower incomes are incarcerated at disproportionately higher rates, and many enter the prison system with chronic illnesses. Health problems are exacerbated by the prison environment, which can include overcrowded and unsanitary conditions, poor nutrition, lack of ventilation, and the impact of violence, trauma, and solitary confinement.[96]

Ironically, people in correctional facilities are the only group in the United States with a constitutional right to health care.[97] But when they return to their communities, they often do not have access to quality health care. It is not difficult to see that declaring people ineligible for assistance to get the food they need is also bad for their health. To a person with a chronic illness, going without food can lead to hospitalization (which, incidentally, costs much more than food assistance). A ban on food assistance for ex-offenders and their families works at direct cross-purposes to the goal of improving family and community safety and security.

The United States has a far higher rate of incarceration than most other high-income countries. Mass incarceration is now a public health crisis that has increased hunger and poverty. Health and human service providers and people of faith must view the problem through a social justice lens. This lens can help us see that often, people's only "choices" range from bad to worse. In addition to enabling us to see situations as they are, a social justice lens can and should help find ways to expand the choices that are actually available to people!

Barbara T. Baylor is currently the Policy Advocate for Domestic Issues at the Washington, DC, Policy Office of the United Church of Christ. She holds a Master's Degree in Public Health.

Few formal research studies have yet to look at the impact of mass incarceration on food insecurity.

Joseph Molieri/Bread for the World

reasons for them not to have health insurance are that their employer doesn't offer it or they cannot afford it.[98] These are also states with some of the highest percentages of the population who report being in fair or poor health.

Medicaid expansion for adults has been associated with reduced mortality as well as improvements in access to care and self-reported health status.[99] People with health insurance are simply more likely to receive timely preventive care. In 2013, only 33 percent of uninsured adults reported visiting a doctor during the past year for a routine check up, compared to 67 percent of adults with Medicaid.[100] Access to primary care is an effective prevention strategy that also saves money.[101] Access to affordable, nutritious food is another cost-effective prevention strategy.

Healthy Food: A Sound Investment for Everyone

1965: Bolivar County, Mississippi. Dr. Jack Geiger, director of the first community health centers in the United States, recognized that malnutrition was the root cause of many of the health problems he and his staff were treating. At the Bolivar County Health Center, they developed the innovative approach of writing prescriptions for patients to purchase food at local stores. The health center paid for the food with funds set aside from the pharmacy budget.

Over the last 30 years, prices for fresh fruits and vegetables have risen at a higher rate than for any other food group.

The Bolivar County Health Center and others around the country were established with funding for the War on Poverty. When the Office of Economic Opportunity, the Washington, DC-based agency in charge of directing the War on Poverty, found out what Geiger was doing, officials told him to stop prescribing food paid for with money set aside for health care. Geiger explained that the patients were sick because they were hungry, and the best medicine he knew for hunger was food.[102] But this was not allowed under program rules.


Joseph Molieri/Bread for the World

Little has changed since then in practical terms. Doctors still cannot routinely prescribe food for patients with conditions related to hunger or malnutrition if they expect insurance to reimburse them. Meanwhile, though, medical researchers have produced reams of studies re-confirming the relationship between nutrition and health.

Researchers from the University of California, San Francisco, found that hospital admissions for diabetic patients were significantly higher at the end of the month than at the beginning.[103] People with diabetes must manage their blood sugar by adhering to a strict dietary regime to avoid acute episodes that could land them in the hospital. Looking at the hospital discharge records of more than two million patients from 2000 to 2008, the researchers noted that the majority of the patients lived in the poorest ZIP code zones.

Anyone who has talked with families that participate in SNAP has heard how difficult it is to stretch the benefits until the end of the month. The California study was published in early 2014, about the same time that Congress and the president agreed on a farm bill that contained $8 billion in cuts to SNAP, making it harder still for diabetic participants to manage their blood sugar levels. Government pays nearly two-thirds of the cost of treating diabetes,

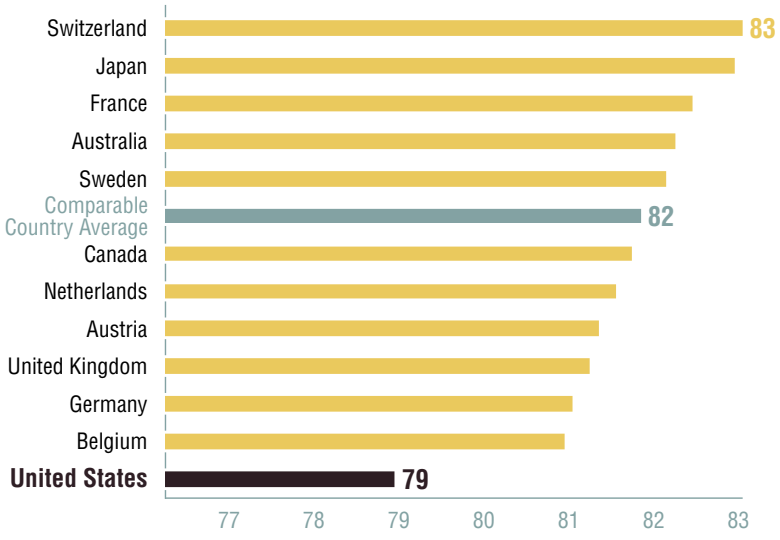
mostly through Medicare and Medicaid.[104] The average cost of a hospital stay in the United States is $2,157 per day.[105] In contrast, a key prevention strategy–SNAP benefits–costs the government about $4.50 per day per recipient.[106]

Studies published in the British medical journal *The Lancet* show that investments in maternal and child nutrition in developing countries are extraordinarily cost-effective, yielding long-term gains in everything from reduced health care costs to lower poverty rates to increases in productivity and Gross Domestic Product (GDP).[107] It is no different in the United States. A 1992 report by the Government Accountability Office (GAO) showed that WIC cost $296 million a year but saved more than $472 million in federal and state Medicaid costs–a net savings of $176 million a year.[108]

The economic arguments for closer coordination between health care and the federal nutrition programs are persuasive even without considering society's moral responsibility to help people who are hungry. The biggest fiscal challenge for policymakers at the federal, state, and local levels is still the rapid growth of healthcare expenditures.[109] As noted earlier, the United States spends more per capita on health care than any other developed country. But on most meaningful health indicators, the United States is doing worse than almost all of these peer countries.[110] U.S. life expectancy is the lowest, infant mortality the highest.[111] See Figure i.12.

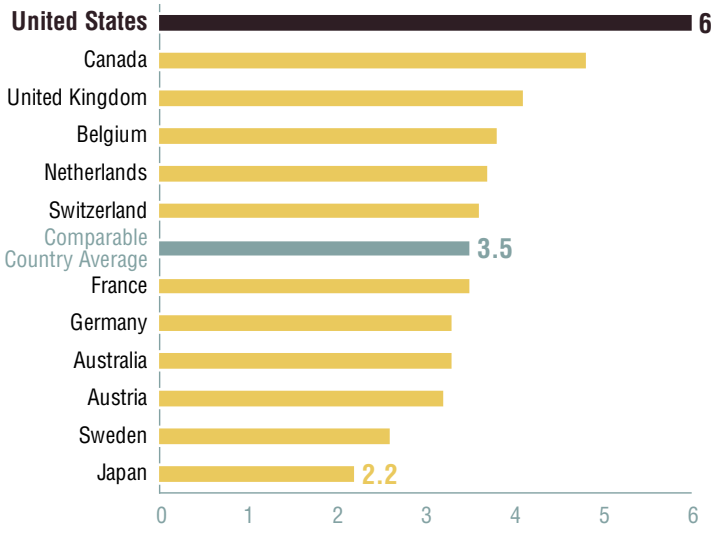
Figure i.12 **The U.S. Has the Lowest Life Expectancy at Birth Among Comparable Countries**

Life expectancy at birth in years, 2011



Infant Mortality is Higher in the U.S. Than in Comparable Countries

Infant mortality per 1,000 live births, 2012



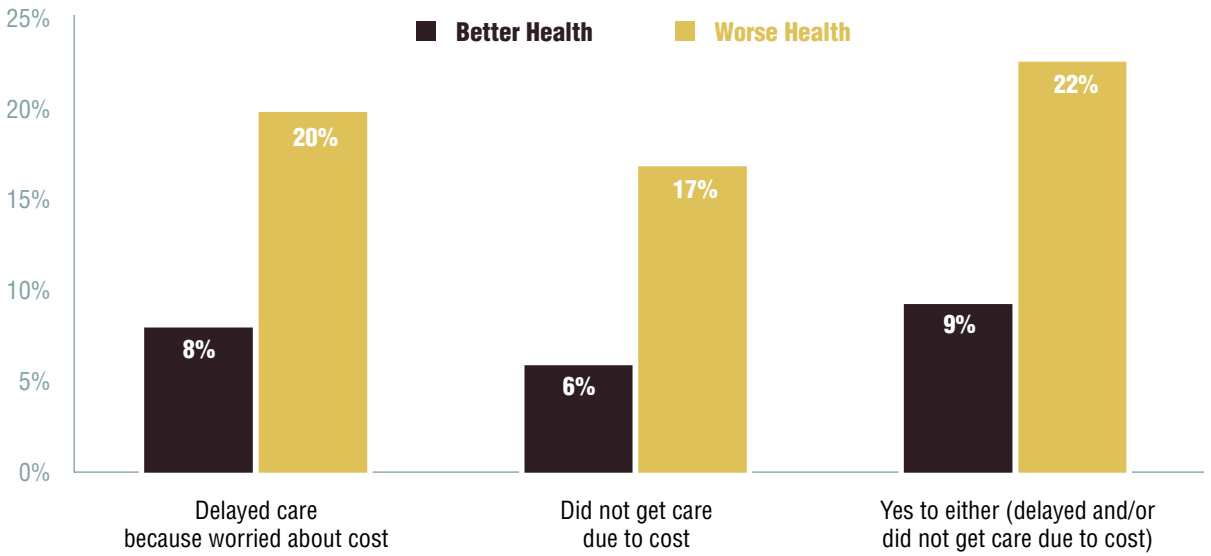
Source: Peterson-Kaiser Health System Tracker, data provided by Organization for Economic Cooperation and Development.

For decades, in both the public and private healthcare sectors, costs have been rising faster than GDP has been growing. In 1965, healthcare expenditures accounted for less than 6 percent of GDP. By 2015, its share had ballooned to 17.4 percent.[112] The rate of growth has slowed in recent years compared to the trend of past decades. This is not expected to last, however, in large part because of an aging population. Older people have higher than average healthcare costs.[113] By 2030, people older than 65 will make up 21 percent of the U.S. population, up from 15 percent in 2014.[114] More than 70 percent of all U.S. health costs are for people with multiple chronic diseases, who tend to be seniors.[115] National healthcare costs would grow at a slower rate if more people were healthier in their senior years—and keeping people healthy has a lot to do with making sure they are eating well.

Beyond the strain on the national budget, rising healthcare costs also, of course, pose a burden at the household level. One in three households struggles to pay medical bills—even though 70 percent of these struggling households have health insurance.[116] Premiums for employer-based insurance have risen by 212 percent since 2000, while wages have risen by just 54 percent over this period.[117] One-quarter of privately insured people do not have enough savings to cover the cost of their deductibles.[118] Medical bills are the leading cause of personal bankruptcy,[119] and more than 11 million people in 2013 were driven into poverty as a result of out-of-pocket medical expenses.[120] Finally, one-third of all chronically ill patients in the United States cannot afford to buy food, medications, or both.[121]

Figure i.13 **Adults Who Are in Worse Health Have More Difficulty Accessing Care Due to Cost**

Percent of adults who reported delayed or going without care due to cost, 2013



Source: Peterson-Kaiser Health System Tracker, National Health Interview Survey

The Shared Agenda

The United States has two food assistance systems that respond directly to people in our country who struggle with hunger. The government system includes the nutrition programs administered by USDA. A private charitable food system, sometimes called the emergency food system, is led by food banks and the agencies they supply.

The two systems are by no means mutually exclusive. USDA provides food banks with millions of pounds of food every year. Charities prepare and serve meals funded by government programs, and they help people enroll in these programs. Earlier, we mentioned the main government programs; here, we briefly discuss the private charitable food system.

Food banks collect and aggregate food supplies from donors and distribute them to community partners, who serve people directly through food pantry and kitchen programs. It is estimated that charitable networks provide between 5 percent and 10 percent of the amount of food assistance supplied by the government.[122] But the strength of the charitable food system goes well beyond the food it provides. In a typical month, two million volunteers dedicate more than 8.4 million hours of service.[123]

Volunteers are the faces of the anti-hunger infrastructure in their communities, while government programs are virtually invisible. SNAP benefits are accessed with the swipe of a debit card; the transaction looks the same as any other involving a debit card. As important as it is to improve efficiency and reduce stigma by using debit cards, this strategy does obscure the magnitude of the problem, the sheer numbers of Americans who struggle to put food on the table. Without the visibility of the charitable volunteers, most people could fall into the trap of underestimating and minimizing the extent of hunger in U.S. communities.

USDA photo

A San Antonio Food Bank employee screens applicants on site for SNAP eligibility as part of a Texas Health and Human Services Commission pilot project.

Volunteers deliver boxes of food to homebound seniors, fill backpacks with food to help low-income schoolchildren and their families get through the weekends, and host summer meal programs. They organize anti-hunger fundraisers and enlist local politicians to speak at those fundraisers. When elected officials wish to show their concern about hunger, it's not surprising that they prefer standing alongside volunteers, serving food, to visiting an office where people are signing up for SNAP and praising taxpayer-supported nutrition assistance programs.

Feeding America, a national network of food banks, is the largest entity in the private charitable food system and supplies food to 46,000 partner agencies nationwide.[124] Faith-based partners make up 62 percent of agencies working with the nation's food banks.[125] The

healthcare system in the United States is deeply rooted in faith-based mission work. Feeding programs are an extension of this work—another way of providing care.

The Feeding America network serves 46.5 million people every year, members of an estimated 15.5 million households.[126] Healthcare reform has created new opportunities for Feeding America, since food banks could become important partners for healthcare providers in their communities. Feeding America is working with its partners to build their capacity to provide a range of health services, from conducting chronic disease screening, to preparing food boxes specially targeted to help manage diseases, to offering nutrition and health education, to referring food bank clients to primary care services.[127]

The Oregon Food Bank offers an example of how this can work. It has created a staff position called a Screen & Intervene Coordinator. Lynn Knox was hired in March 2014. She travels across the state meeting with staff at clinics and hospitals, showing them how to develop protocols to administer a two-question food security screen to patients and then to enter this information into their electronic medical records. Knox has spent most of her career designing and implementing health programs in government, nonprofits, and health-

Joseph Molieri/Bread for the World

Volunteer hands sort through the offerings at the food pantry run out of the St. George's Episcopal Church in Fredericksburg, Virginia.

care organizations. She understands the culture at clinics and hospitals and how to help them adapt to changes brought on by the ACA.

Since she began working for the Oregon Food Bank, Knox has met with more than 200 clinics and hospitals around the state. Oregon has taken advantage of the opportunity under the ACA to expand Medicaid coverage. As a result, the state's patient population has grown significantly. Providers don't have to be sold on the idea of systematically screening patients for food insecurity. The Oregon Health Authority sets performance measures that all providers must meet, and Knox explains that the food security screen has already been adopted in concept and will be codified into policy within the next two years. "I get two basic responses after I initiate contact," she says. "It's either 'we are so swamped right now that we cannot even think about one more new thing,' or 'thank you, we need all the help we can get!'"

Responding to the social determinants of health will require the combined efforts and expertise of a range of community partners.

Of course, healthcare institutions need to go beyond screening for food insecurity to providing assistance to patients who screen positive. The other part of Knox's job is working with healthcare providers to help connect patients to local resources. One of her strategies has been to work with nursing programs, integrating a practical learning module that places nursing students into clinics and hospitals so they can help connect patients with the resources available in their community. Knox believes that these modules will also help sensitize the next generation of healthcare workers to the relationship between hunger and health.

The Oregon Food Bank is not the only U.S. food bank to recognize that hunger and health are interconnected. What is unique about this food bank is how it has reached out to healthcare providers in the state and helped them understand the important role that anti-hunger partners can play in helping patients stay healthy and food secure.

Responding to the social determinants of health will require the combined efforts and expertise of a range of community partners. The ACA is a unique vehicle to bring multiple stakeholders to the table to coordinate their work around a common vision of improving community health. Hunger is a health issue, as is education, housing, job opportunities, and more. Policies tend to address social problems in isolation from each other. Holistic approaches are in short supply, which is what makes health reform such an exciting opportunity.

THE HUMAN RIGHT TO WATER IN THE UNITED STATES

by Patricia Jones and Amber Moulton, Unitarian Universalist Service Committee (UUSC)

Water is essential to life. Humans require it for hydration and hygiene, and it plays a central role in agriculture, food preparation and cooking, and sanitation. Every person must have access to safe, sufficient, and affordable water to meet daily human needs.[1]

The Unitarian Universalist Service Committee (UUSC) works to implement the human right to water and sanitation through support for grassroots partners, advocacy, and a legal strategy in the United States and across the globe.

Thus far, only one U.S. state, California, has enshrined the human right to water in law. In 2012, a coalition led by the Environmental Justice Coalition for Water, the Safe Water Alliance, UUSC, Unitarian Universalist congregations, and other faith-based activists helped make California's human right to water bill, A.B. 685, a reality.

The majority of people living in the United States have a reliable supply of safe water. But that fact conceals serious disparities in access that fall along economic, racial, and ethnic lines. Too often, poverty intersects with race and ethnicity to deny people of color and indigenous communities their human right to water.

Too often, poverty intersects with race and ethnicity to deny people of color and indigenous communities their human right to water.

The main problem in the United States is the "affordable" requirement of the right to water. The international standard is that water bills should not exceed 2.5 percent of a household's monthly income. A recent study by the U.S. Conference of Mayors found that under this standard, large percentages of the U.S. population face water bills that are unaffordable.[2]

By and large, municipal authorities have failed to create adequate affordability plans to help low-income residents maintain access to water. In 2014, the city of Detroit began disconnecting tap water service to about 35,000 residential accounts. City officials claimed that people were simply refusing to pay their bills. But in a city where 40 percent of the residents live below the poverty line, the reality was that poor households could not afford their rising water bills.

Detroit families brought a class action suit, *Lyda et al v City of Detroit*, to stop the shutoffs. The plaintiffs gave harrowing examples of the impact of the shutoffs on small children, elderly people, and people with disabilities. Plaintiff Nicole Cannon was a mother of three living with a chronic illness. Her unpaid water bill had reached $3,000 because of a leak in her rental home that her landlord refused to repair. As she struggled to pay her bills with a monthly Social Security Disability check of $648, Detroit Water and Sewer notified her that to avoid having her water shut off, she must pay $241 a month toward her balance. In her deposition, Ms. Cannon noted that this was unsustainable and that, despite seeking help from various sources, she had found no way to maintain running water in her home.[3] She died in January 2015 at the age of 44.

Detroit Water and Sewer had scheduled another 30,000 shut offs for the summer of 2015. In July, the Detroit City Council passed a 7.5 percent rate increase, while establishing a blue ribbon panel to investigate "affordability" for low-income residents. At this writing, Detroit Water and Sewer has not carried out the scheduled shutoffs.

One measure cities can take is to create water affordability plans that align water bills with people's actual incomes. The city of Philadelphia took a welcome step in 2015, enacting an ordinance that requires the city to research and establish an affordability plan that allows low-income water customers the opportunity to enroll in a payment plan based on their income and individual needs, while maintaining the financial sustainability of the utility.[4] At the national level, the EPA must review its affordability guidelines and develop policies and plans that meet the needs of the country's lowest-income people.

UUSC

Residents of Detroit protesting in 2014 after the municipal government shut off water running to 30,000 residential units.

The insistence in the "right to water" language that water be "safe" is another problem in the United States. Communities are threatened by industrial and agricultural practices that treat water as a resource to be exploited—a commodity rather than a necessity or something everyone should have.

The international human rights community has taken note of U.S. difficulties in making the right to water a reality in practice. In 2011, the United Nations Special Rapporteur for the Human Right to Water conducted a mission to the United States and met with people across the country.[5] In 2015, the U.N. Human Rights Council Universal Periodic Review of the United States recommended stepping up efforts to secure the human right to water, especially to avoid discrimination based on poverty, race, and ethnicity.[6] Efforts such as the planning in Philadelphia offer signs of hope that our country can make progress.

Patricia Jones is Senior Program Leader for the Human Right to Water and Amber Moulton is a Researcher for the Unitarian Universalist Service Committee (UUSC). For more information on UUSC's human right to water program, visit http://www.uusc.org/focus-areas/environmental-justice.

Laura Elizabeth Pohl for Bread for the World

Hunger and Health Over the Life Course*

Launching Off Point

A food insecure woman gives birth to a premature, underweight baby. The undernourished infant is more susceptible to infections, requires more medical care, is more likely to be hospitalized, and faces delays in growth and development that may haunt her for the rest of her life. Growing up poor, she has markedly different experiences than her peers in higher-income households: no high-quality preschool or center-based child care, parents who are overwhelmed with trying to earn enough to keep a roof over their heads, siblings competing for whatever food there is in the home.

In school, she struggles to catch up. She is chronically hungry and relies on the free lunch and free breakfast (if offered) programs for most of her nutrients. Growing up impoverished in a food insecure household exposes her to toxic levels of stress that contribute to early onset of chronic diseases. Toxic stress also makes her more vulnerable to depression and thoughts of suicide, substance abuse, and dropping out of school and consequently severely limited employment opportunities in adulthood.

"The poor get sick more than anyone else in the society… When they become sick, they are sick longer than any other group in the society… At any given point in the circle, particularly when there is a major illness, their prospect is to move to an even lower level and to begin the cycle, round and round, toward even more suffering."

— Michael Harrington, *The Other America* (1962)

KEY POINTS

- Maternal and child health outcomes are worse in the United States than all other high-income countries, and this is due in part to our tolerance, as a nation, for higher levels of poverty and hunger.
- The Hunger VitalSign™, a two-item food-security screen, is an efficient tool to use in clinical settings to identify patients at risk of hunger.
- Investments in early childhood development, including good nutrition, are essential to giving children growing up in poverty the best chance of achieving a healthy, productive life.
- Many working-age adults with disabilities who can work and want to work are deterred from seeking employment due to the fact they could lose their healthcare benefits.
- Hospitals can reduce the rate of Medicare readmissions by ensuring at discharge that seniors have access to healthy food and are aware of available nutrition services.
- Home-delivered meal programs provide frail seniors and people with severe disabilities some measure of independence and can help delay the need for expensive long-term care.

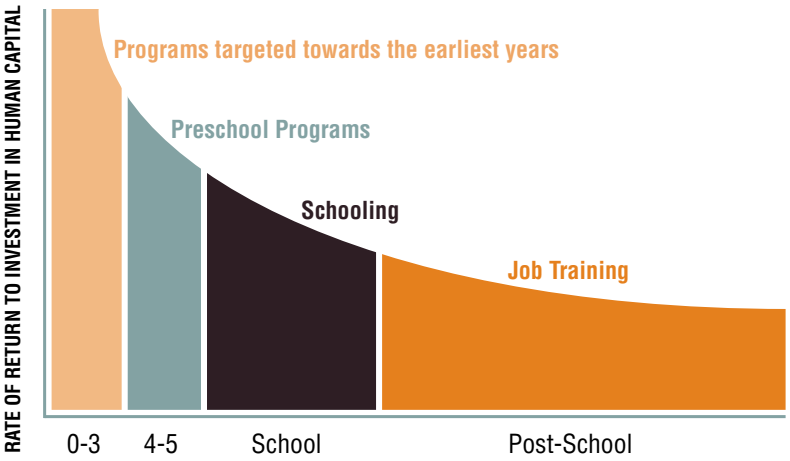
*"*Life course perspective refers to how health status at any given age, for a given birth cohort, reflects not only contemporary conditions but embodiment of prior living circumstances, in utero onwards."*[1]

The food insecurity she experienced early in life makes her more prone to overweight and obesity. She is more at risk of becoming disabled early in adulthood, due to the likelihood that her job requires more physical labor than the work of someone with more education. By the time she reaches her senior years, she may well have multiple chronic conditions that are expensive to treat. With limited healthcare options when she was younger, she rarely invested in routine checkups to help diagnose and treat these problems earlier on.

Underweight at Birth

The early years of life are the most critical period in human development.[2] There is nothing controversial about this statement; it is universally understood that what happens to children during this time will influence their physical and cognitive development for the rest of their lives. The Heckman Curve, named for the economist and Nobel laureate James Heckman, shows the practical value of investing in early childhood development, not only for the children themselves and their families, but also for society. See Figure 1.1. Children whose physical and cognitive development is harmed as a result of food insecurity and malnutrition have diminished human capital, and that has ramifications for everyone. The economy is less productive and less innovative than it could be, affecting everyone's standard of living.

Figure 1.1 **Early Childhood Development is a Smart Investment**
The Earlier the Investment, the Greater the Return



Source: James Heckman

Food insecurity and malnutrition increase the likelihood of preterm birth and/or low birth weight. In 2013, 8 percent of babies in the United States were born at low birth weight (less than 5.5 pounds).[3] Babies born prematurely with low birth weight have a much higher risk of experiencing long-term development delays. Among 17 of the richest countries in the world, only Japan has a higher

percentage of babies born with low birth weight than the United States.[4] Among African American babies, 13.08 percent have low birth weight, nearly double the rate of U.S. whites (6.98) and Hispanics (7.09),[5] and on par with the rates in many developing countries.[6]

"While high-quality schools have the potential to improve the outcomes of all children, they do not reduce the gaps generated by poor neonatal health," says David Figlio, coauthor of a study on neonatal health and its effects on children's cognitive development.[7] Figlio and colleagues found that birth weight had noticeable effects on scholastic outcomes for children in every income group. The earliest, smallest babies are the most at risk, but even children born just weeks shy of full term face a higher risk of complications than children who reach full term.[8]


USDA photo

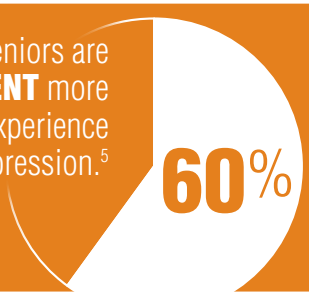
A lactation consultant discusses proper breastfeeding techniques with parents.

Premature birth and low birth weight are also leading causes of infant mortality. In 2013, the United States ranked 51st internationally in infant mortality rates—comparable to countries with one-third its Gross Domestic Product (GDP) per capita.[9] The United States has the highest rate of infant mortality among high-income countries.[10] Japan makes a stunning turnaround from its dismal last-place performance on low birth weight: its infant mortality rate is second lowest among high-income countries. Authors of a study for the American Academy of Pediatrics suggest that Japan's healthcare system is one reason low birth weight babies survive at such high rates. In Japan, all children have access to medical care, regardless of their family income or their region of the country.[11]

Nutritional status during pregnancy is directly related to the mother's own survival as well. The United States has the highest maternal mortality rate among high-income countries, double

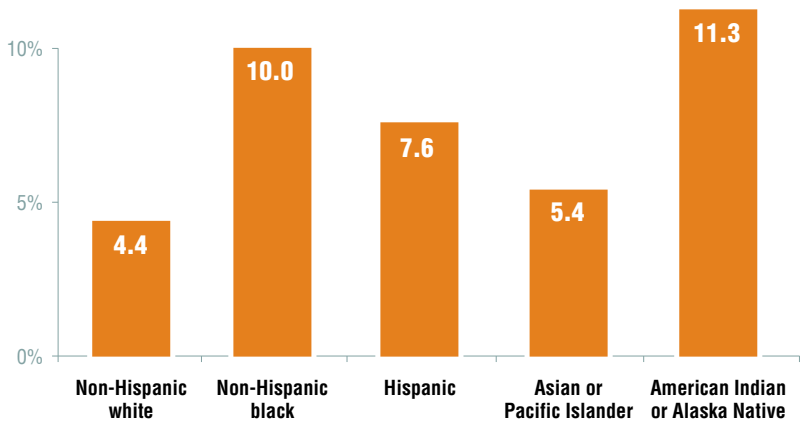
Adults living with disabilities are **3x** more likely to have heart disease, stroke, diabetes, or cancer.[3] They are also more than **2x** as likely to be food insecure as the adult population at large.[4]

Food insecure seniors are **60 PERCENT** more likely to experience depression.[5]



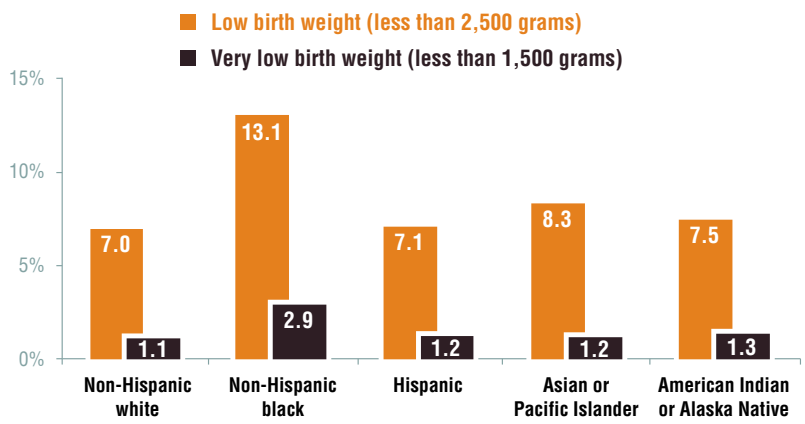
the rate of Canada and triple that of the United Kingdom.[12] One contributing factor is the rising number of pregnant women with diet-related health conditions, such as hypertension and diabetes, which increases their risk during pregnancy and childbirth. The United States is one of only eight countries in the entire world where maternal mortality rates have risen since 1990.[13] African American women are nearly four times as likely as white women to die in childbirth or as a result of pregnancy complications.[14]

Figure 1.2 **Percentage of Mothers Receiving Late or No Prenatal Care, by Race and Hispanic Origin, 2013**



Source: United States Department of Health and Human Services (US DHHS), Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS), Division of Vital Statistics, Natality public-use data 2007-2013, on CDC WONDER Online Database. Available at http://wonder.cdc.gov/natality-current.html.

Percentage of Infants Born at a Low Birth Weight, by Race and Hispanic Origin, 2013



Source: Centers National Center for Health Statistics, National Vital Statistics System. *VitaStats*. 2013 Data by State. Available at http://205.207.175.93/VitalStats/ReportFolders/ReportFolders.aspx.

Participation in the Special Supplemental Nutrition Assistance Program for Women, Infants, and Children (WIC) has been shown to reduce the risk of low birth weight by 29 percent.[15] The Supplemental Nutrition Assistance Program (SNAP, formerly known as the Food Stamp Program) has also been shown to reduce low birth weight, strengthening its association with good health care.[16] During the late 1960s and early 1970s, as the Food Stamp Program was being rolled out county-by-county, researchers found evidence that the program was making a significant difference in birth outcomes. "In particular," they wrote, "we find increases in mean birth weight for whites and blacks, with larger impacts estimated at the bottom of the birth weight distribution (that is, low birth weight and very low birth weight)."[17]

By increasing the number of women with access to public and private health insurance, the Affordable Care Act (ACA) of 2010 could have a significant impact on reducing preterm births and maternal mortality. The ACA makes it much easier for women to get prenatal and postnatal care. In addition, small group and indi-

vidual health plans are required to include a set of specific essential health benefits, including maternity care. Also, insurers are no longer allowed to deny coverage based on a pre-existing condition. Under some insurance plans in the past, pre-existing conditions were defined as including pregnancy, a past C-section, plans to become pregnant, being a victim of intimate partner violence, and sexual assault.[18] The largest impact of the ACA reforms will be in states that are expanding Medicaid to adults with incomes up to 138 percent of the federal poverty level. It is still too early to know the effects of the expansion on birth outcomes, since full implementation only began in 2013.

Policymakers could take advantage of healthcare reform to improve coordination between Medicaid and SNAP. In the states that expanded Medicaid, 97 percent of SNAP recipients will be income eligible for Medicaid.[19] SNAP recipients have already gone through a rigorous comprehensive application process to qualify for benefits. Using SNAP participation to determine automatic eligibility could speed the process of applying for Medicaid, reducing costs and improving efficiency. Families participating in Medicaid are able to enroll automatically in WIC.[20] In interviews with heads of SNAP households who have also used WIC, people say that they appreciate the fact that WIC requires them and their children to get health checkups and treats them more like patients than welfare recipients.[21]

Hunger and malnutrition during early childhood are associated with poor health for the rest of a person's life.

At-risk Families with Children Ages 0-2

For some families, WIC or SNAP may be all they need to cope with the economic adjustment following the birth of a child. For others, these nutrition programs may be one ingredient in the recipe for a successful coping strategy. The most disadvantaged families require more support than just nutrition programs. We do these families—and society—no favors by oversimplifying and minimizing the challenges the parents face, and it is simply not wise or realistic to assume that society can provide for children while ignoring the challenges of parenting. This is especially true for first-time parents, often mothers having to raise children alone without the support of the father or other family members.

Home visitation programs, such as the Federal Home Visiting Program, are unique in that they adopt a two-generation approach to meeting the needs of families, providing both parents and children with the focused attention and care they need during this critical period. First-time parents who are low-income and high-risk receive one-on-one support during monthly nurse-home visits that begin during pregnancy and continue through the child's

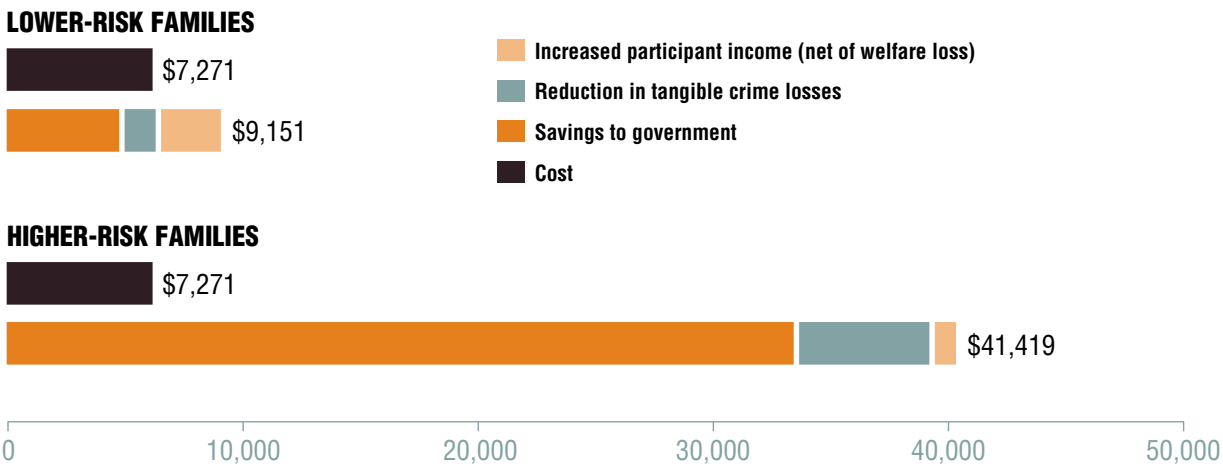
second birthday. In 2014, 115,000 families in 787 counties were served. This program is one aspect of the ACA that appears to have bipartisan support. The Federal Home Visiting Program existed before the new health law but was funded at a fraction of its current level. In FY2009, the program received just $13.9 million. The ACA increased funding to $1.5 billion for five years over 2010-2014.[22] In 2015, Congress authorized $800 million over two years for the Federal Home Visiting Program.

Home visitation programs are unique in that they adopt a two-generation approach to helping at-risk families, providing parents and children with the focused attention and care they need during a critical period.

There are 17 federally approved models of home visitation programs, but the most well-known and the most rigorously evaluated is the longstanding Nurse-Family Partnership (NFP). Founded in 1977, NFP has now been studying its impact on families for decades. Randomized controlled trials show that NFP reduces maternal and child mortality rates.[23] Other proven achievements are higher rates of employment among the mothers, fewer unwanted pregnancies, decreases in child abuse and visits to the emergency room, reductions in behavioral and intellectual problems in children by age six, and fewer arrests of children by age 15.[24] A 2005 study by the RAND Corporation found that for high-risk families, every $1 invested in NFPs yields a $5.70 social return. Government receives the bulk of these savings—for example, through lower expenditures on public assistance to the families.[25] See Figure 1.3

One reason home visits succeed is that the nurse—or social worker, paraprofessional, or other trained provider, depending on the model—goes to the patient. Transportation is one of the costliest items in any household budget, and there is virtually no public assistance to

Figure 1.3 **Monetary Benefits to Society of Nurse-Family Partnership Program**



Source: Center for High Impact Philanthropy, University of Pennsylvania http://www.impact.upenn.edu/early-childhood-toolkit/why-invest/what-is-the-return-on-investment.

help low-income families with transportation costs. For these families, transportation is a major barrier to accessing services. Lack of transportation is often why families miss doctor's appointments, and it helps explain the drop-off in WIC participation after age 1.

Nutrition and feeding practices are an integral part of what home visitation programs focus on with parents. The visitor checks on what the mother and child are eating. She talks with the mother about the importance of breastfeeding, why young children should not be given sugary beverages, and other key points. Healthy Beginnings, a home visitation program based in Australia and similar in concept to U.S. programs, conducted a randomized control trial from 2007-2010 to evaluate the effect of the program on efforts to prevent childhood obesity. At age 2, a statistically significant greater share of the intervention group had a body mass index score within the normal range than in a control group.[26]


Zach Blum for Bread for the World

Studies show that exposing children to healthy foods during infancy can influence a preference for these foods for the rest of their lives.

Infant feeding patterns influence childhood eating habits, which are then carried over into adulthood. Infancy is a critical time to learn various food tastes. "There is substantial research to suggest that if you consistently offer foods with a particular taste to infants, they will show a preference for these foods later in life," says Xiaozhong Wen, lead author of a 2014 study published in *Pediatrics*. "So if you tend to offer healthy foods, even those with a somewhat bitter taste to infants, such as pureed vegetables, they will develop a liking for them. But if you always offer sweet or fatty foods, infants will develop a stronger preference for them or even an addiction to them."[27]

Home visitation programs that last up to two years are an invaluable opportunity to influence healthy eating patterns. Understanding what works best requires investing in evidence-based research and using the findings to inform policymaking. Home visitation programs have been shown to work. Not all families need this kind of intensive focus, but when we know what works, we should not hesitate to allocate enough resources upstream in order to avoid costly downstream consequences—both financial and human.

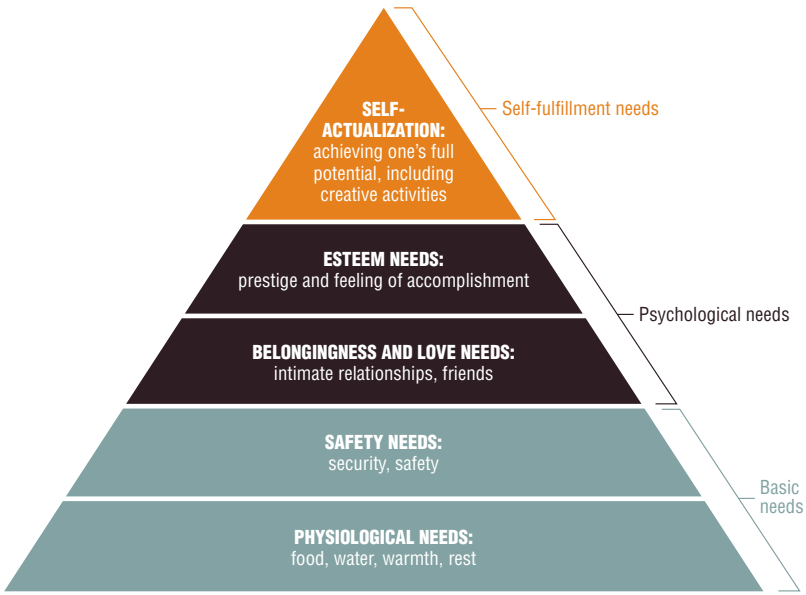
When Children "Fail to Thrive"

Psychologist Abraham Maslow developed a well-known "hierarchy of human needs." See Figure 1.4. Few would argue that food, shelter, and warmth are basic human needs. These are building blocks of good health. Infants and toddlers growing up in poverty show us why.

Food insecurity and malnutrition compromise children's immune systems, making them more vulnerable to infections. Substandard housing compounds the challenges of keeping

children healthy. Cold, damp, and moldy conditions are associated with asthma and other respiratory ailments.[28] Heat or eat is a catch phrase that speaks for itself: pay the energy bill, or pay for groceries. Winter challenges the resourcefulness of even those parents who are most adept at shielding their children from hunger at other times of the year. One study found that children living in poverty consumed an average of 11 percent fewer calories during the winter because of heating costs.[29]

Figure 1.4 **Hierarchy of Human Needs**



Source: Abraham Maslow (1943), "A Theory of Human Motivation," *Psychological Review* 50 (4).

Rapidly developing infants and toddlers in these conditions often "fail to thrive," that is, they don't grow properly, don't gain weight at the same rate as healthy children.[30] Clinicians define this in terms of primary or secondary malnutrition. Primary malnutrition describes children who would have grown normally and been healthy if they had the same amount to eat as economically secure children of their age; secondary malnutrition describes children with a condition (ranging from food allergies to congenital heart disease to neurological disability) that increases their nutritional needs to the extent that these needs exceed the capacity of their environment without specialized interventions.[31]

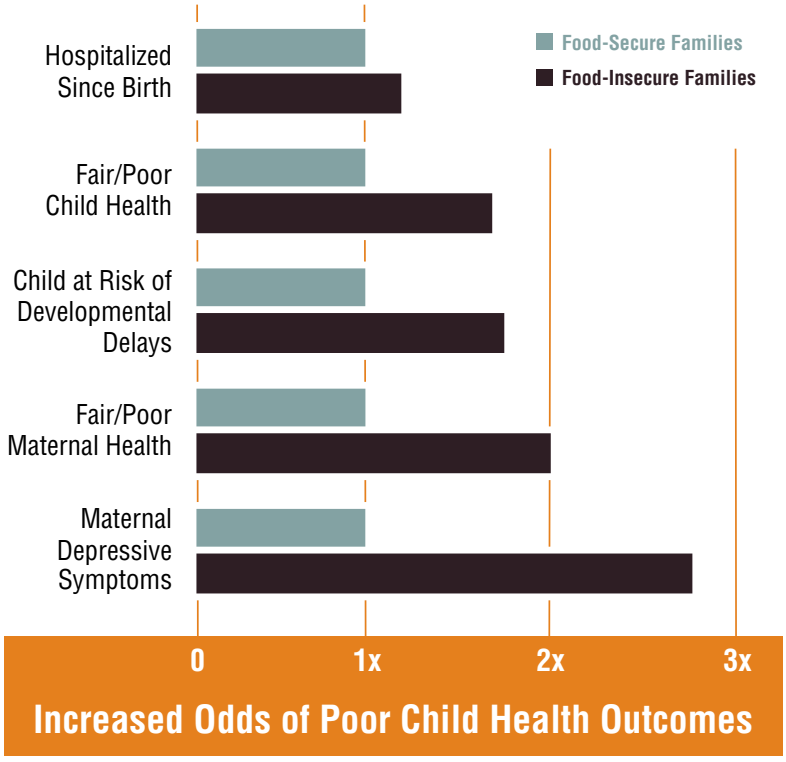
The Grow Clinic at the Boston Medical Center sees children up to the age of 6 diagnosed with "failure to thrive. " Pediatrician Deborah Frank is the head of the Grow Clinic, and, with colleagues from around the nation, one of the founders of Children's HealthWatch. Children's HealthWatch established an ongoing multi-site clinical research program focused on young children in hospital emergency rooms and clinics in low-income areas with high levels of food insecurity. The research Children's HealthWatch has produced since 1998 demonstrates how insecurity in food, housing, and energy are all interrelated and together affect child health outcomes. See Figure 1.5. Children's HealthWatch includes clinicians and public health researchers at urban hospitals in Baltimore, Boston, Little Rock, Minneapolis, and Philadelphia. These are sentinel sites where the child health and developmental consequences of food insecurity and associated hardships become readily apparent before they are noticed in the population at large. They could also be considered the tip of the iceberg: in the 71 largest U.S. cities, child poverty rates average 30 percent.[32]

In 2014, leaders in Congress appointed Frank and her public health colleague Mariana Chilton of Children's HealthWatch's Philadelphia site to a 10-member National Hunger Commission. Frank and Chilton are regularly asked to testify at hearings when Congress

is debating domestic anti-hunger legislation. In a 2012 interview with Greg Kaufmann of *The Nation*, Chilton recalled the time in 2007 that she was testifying before Congress on the importance of the Food Stamp Program for the health and well-being of young children. She was there to talk about the research she and her colleagues at other Children's HealthWatch sites had been doing. "I literally watched the Congress people's eyes glaze over, and I thought, "Well, this isn't doing it."[33]

As her clinical colleagues had found, Chilton realized that policy makers demand numbers, but will not act unless constantly reminded that numbers all have names and faces. When Chilton got back to Philadelphia, she developed a project called *Witnesses to Hunger*, where she provided cameras to mothers living in poverty and asked them to create a visual diary of what hunger looks like in their communities. The images were published on the Internet, where they went viral, and eventually the mothers were invited to display their photographs and discuss them at an exhibition in the halls of Congress. The *Witnesses to Hunger* project is designed to keep eyes from glazing over, and it's been quite successful in doing so.

Figure 1.5 **Families at Risk of Food Insecurity Had Worse Child Health Outcomes and Worse Maternal Mental and Physical Health.**



Source: Children's HealthWatch Data, 1998-2005. All increases statistically significant at p<0.05.

In the mid-2000s, Children's HealthWatch sites began piloting the use of a 2-item food security screening tool. The tool is based on a longer food security survey the U.S. Census Bureau administers annually to the population at large (see more on the U.S. food security survey on pages 16-19 of the Introduction). The objective is to efficiently identify households at risk of food insecurity, so that the research approach of the 18-item USDA Food Security Scale can be translated into a clinically useful tool. The survey asks the parent or caregiver to rate two statements as "often true," "sometimes true," or "never true": "Within the past 12 months, we worried whether our food would run out before we got money to buy more," and "Within the past 12 months, the food we bought just didn't last and we didn't have money to get more."

This tool, the Hunger VitalSign™, has been validated with a sample of 30,000 caregivers. Responses can be recorded in electronic medical records along with other vital signs. Today,

it has been widely adopted as a routine activity in pediatric and other healthcare settings, including newly established electronic health records.[34] The American Academy of Pediatrics (AAP), representing more than 60,000 pediatrician and pediatric medical subspecialists, encourages all its members to promote the use of the Hunger VitalSign™. In 2013, AAP made reducing child poverty one of its strategic priorities as an organization.[35] With half of all babies in the United States born into families with low enough incomes to be eligible for WIC, the AAP could not afford *not* to take a stand on poverty and hunger.


Courtesy Children's HealthWatch

Dr. Deborah Frank, founder and principal investigator of Children's HealthWatch, with a patient and mom at the Boston Medical Center's GROW Clinic.

Children's HealthWatch collects information about household food security, child health and development, parental health, federal assistance program utilization, employment, income, financial literacy, housing, utilities, and child care. At the Boston Medical Center, if children are referred for primary or secondary malnutrition, a clinical team ("the GROW team") conducts a comprehensive evaluation of each child and family. The team includes nutritionists, social workers, and multilingual community outreach workers along with consultants from child development and child psychiatry. Once children are referred to Frank and her colleagues in the Grow Clinic their progress is tracked at least monthly. Most parents know how to shop on a limited budget—but a major problem is they can't afford the better foods.

Boston Medical Center (and another Children's HealthWatch hospital, the Hennepin County Medical Center) maintains a food pantry to help, partnering with the local food bank, philanthropic donors, schools, and religious groups to keep it stocked. Decades ago, Dr. Frank started keeping a small pantry because she could not endure the mothers breaking into tears when she told them what their child should be eating and hearing them tell her they couldn't afford those kinds of foods. At Boston Medical Center, the pantry has become a hospital-wide initiative, since the health of patients of all ages is known to be jeopardized by poor diets.

Outside of a hospital setting, few pediatricians can afford to keep an on-site social worker or other staff trained to address nutritional risks and other social determinants of health. At the very least, pediatricians should know how to direct eligible families to WIC, and they should have information available about local food source hotlines, school meals and summer feeding, and how to get assistance in applying for SNAP. The most important thing every provider needs to do to address food insecurity is to begin screening for it.

Box 1.1

PARISH NURSES MINISTERING WELLNESS IN MILWAUKEE

Columbia St. Mary's Hospital in Milwaukee is a member of Ascension Health, the nation's largest nonprofit health system and its largest Catholic health system. Ascension's call to action is "to provide health care that leaves no one behind." Milwaukee is one of the poorest cities in the nation. With poverty rates higher than 40 percent in parts of the city, many of Milwaukee's neighborhoods have been left behind.[36]

Columbia St. Mary's sponsors a community-based, chronic disease management program (CCDM) located at food pantries operated by churches around the city. Because disease management is so heavily influenced by dietary choices, it made sense to locate the program in food pantries so that it is easy to incorporate nutrition counseling into the health screenings. "The cyclical in control/out of control management of chronic diseases cried out for a model of care different from the office-based, doctor-centric approach," says Bill Solberg, Director of Community Services at Columbia St Mary's.


Columbia St. Mary's Hospital

Julia Means, a parish nurse on staff at Columbia St. Mary's Hospital, brings health services to churches and other locations in underserved communities of Milwaukee.

The program employs two parish nurses who work with churches in some of the city's most disadvantaged African American and Hispanic communities. A parish nurse is a registered nurse who works within a faith community to respond to the health issues of the members and the broader community or neighborhood. What distinguishes a parish nurse is the spiritual side of her work. "We're not just our heart or our liver or our kidneys," says Maureen Daniels of the International Parish Nurse Resource Center. "Part of being a person is that whole dimension of spirit that makes us who we are."[37]

Columbia St. Mary's is a Catholic institution, but parish nursing is not a distinctly Catholic vocation—many prefer the term faith-community nurse. There are approximately 15,000 parish/faith-community nurses in the United States, and it is one of the fastest growing specialty practices recognized by the American Nurses Association.[38]

Julia Means, one of the nurses employed by the hospital, is a member of Ebenezer Church of God in Christ, the site of one of the pantries. Solid partnerships with the churches have been the key to ensuring that the program is sustainable. Charles McClelland, Bishop of the Northwest Wisconsin Jurisdiction of the Church of God in Christ (COGIC), was so impressed with the CCDM program that he invited Means to coordinate the health ministries of all 42 churches that report to him.

The pantries stock the healthiest foods they can get. Healthy items such as chicken breasts, fresh fruit, and vegetables can be purchased from the Feeding America network food bank for a modest fee per pound, which allows the food bank to cover its maintenance costs for transportation and storage. Solberg estimates it costs Columbia St. Mary's about $1,500 per year to support one pantry. That is less than the cost of *one overnight hospital stay.*

The Lasting Effects of a Hungry Childhood

Childhood hunger, especially early childhood hunger, is capable of rewiring the brain. It affects behavioral, educational, economic, and health outcomes for decades.[39] Some people manage to transcend their experience of childhood hunger. Others do not—exposure to hunger in childhood haunts them for the rest of their lives.[40]

When we discuss ways of helping adults at risk of hunger, it seems shortsighted not to consider whether they experienced hunger as a child. The legacy of adverse childhood experiences adds to the load that adults carry while struggling to pull themselves and their own children out of poverty. The term "adverse childhood experience" barely begins to describe the intensity of what some people experience, sometimes for years and years. Jocelyn, a 20-year-old mother of one, experienced hunger so severely as a child that she resorted to eating paint chips off the wall—until it put her in the hospital with lead poisoning. Neglected by her mother, a drug abuser, Jocelyn moved in with her father and stepfamily. Her stepbrother raped her repeatedly starting when she was 10. She endured this abuse initially because it was the first time in her life she was getting enough to eat. [41]


Richard Lord

Residents at a shelter for victims of domestic violence, a leading cause of homelessness among women and their children.

The developing brain of a child is highly sensitive to stress. Toxic levels of stress, such as what is caused by repeated exposure to violence, set off a physiological chain of events that limits the ability of the body's immune system to fight off illness. Adverse childhood experiences are associated with early onset of diseases such as diabetes, cardiovascular disease, and depression.[42] See Figure 1.6. The body is literally aging at an accelerated rate.

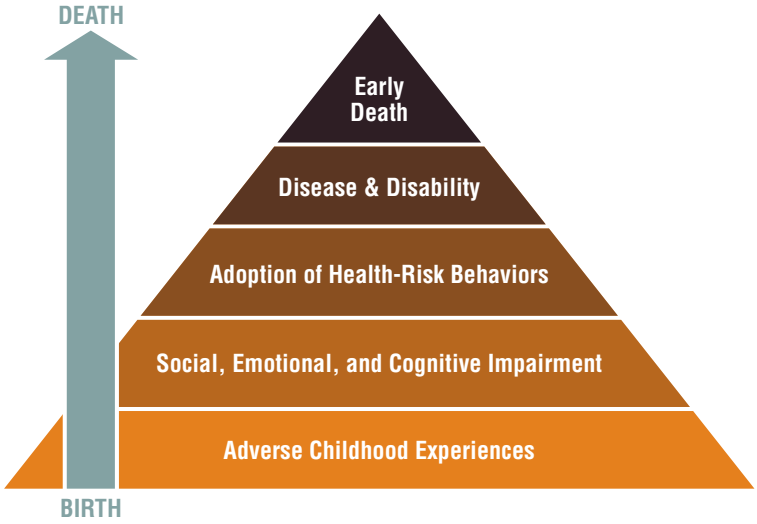
Half of all substance abuse disorders start by the time the person is 14.[43] At least two-thirds of the patients in drug abuse treatment centers report being physically or sexually abused as children.[44] Adolescents with depression who do not receive help are one and a half times more likely to have depressive symptoms in adulthood than their peers who do get help.[45]

Children whose mothers are coping with the legacy of these experiences must cope with it also. Childhood hunger is more prevalent in households where the mother has symptoms of post-traumatic stress disorder. One study found that households where the mother had been sexually abused as a child were more than four times as likely to be food insecure as those where the mother had not been abused.[46] In Chilton's work in Philadelphia with low-income

parents, the mothers she interviewed for *Witnesses to Hunger* described exposure to violence as "the most profound experiences shaping the participants' physical and mental health, earning potential, and food security status."[47]

By age 13, Jocelyn had already been hospitalized for depression, an illness she continues to battle. A substantial body of research has documented an association between maternal depression and household food insecurity.[48] A study of 14,000 children, using data collected at intervals between birth and the start of kindergarten, found that when mothers are moderately to severely depressed, the risk of child and household food insecurity increases by 50 percent to 80 percent.[49] A mother's mental health is a crucial factor in keeping her family from falling into very low food security—where people must skip meals or even not eat for a whole day. Maternal depression has also been linked to failure to thrive by inhibiting mother-infant bonding.[50]

Figure 1.6 **Mechanisms by Which Adverse Childhood Experiences Influence Adult Health Status**

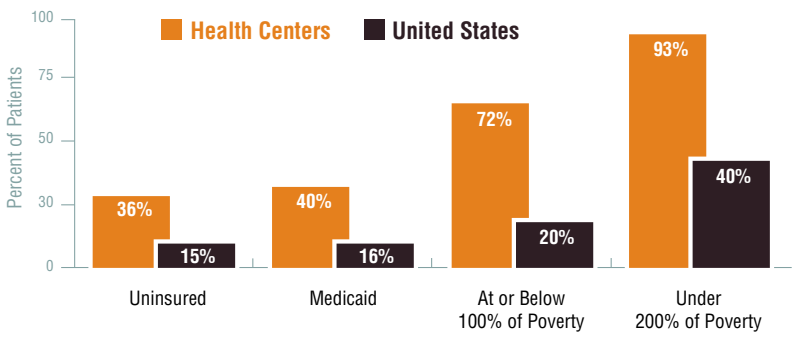


Source: Vincent J. Felitti et al (1998), "Relationship of Childhood Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults: The Adverse Childhood Experiences (ACE) Study," *American Journal of Preventive Medicine* Vol. 14, No. 4.

All of this focus on mothers does not mean we are less concerned about fathers. Those who were exposed to hunger in childhood or have physical or mental health problems often face struggles that can profoundly affect their children as well. But it is mothers who are typically the caregivers and gatekeepers to health services in their families. In a 2013 survey, 10 times as many working mothers as men reported taking time off to care for a sick child.[51] Mothers control the dietary quality of food in the home. Most often, they purchase the food and prepare the meals served at home. A study based in England found that depressed mothers lacked the energy to shop for groceries or cook family meals.[52] A mother's mental and physical health also affects food security by compromising her ability to hold down a job and/or navigate the welfare system. Maternal depression may be one explanation of why some households eligible for SNAP or WIC do not apply.

Because mental health and household food security are so closely connected, AAP recommends that pediatricians screen mothers for depression.[53] Some WIC clinics already do this.[54] Community health centers, which serve one in five low-income women of childbearing age,[55] have stepped up their efforts on mental health. In 2013, 76 percent of such centers provided mental health services, a strong improvement from the 42 percent of 2000.[56] Federally funded community health centers provide care to more than 21 million patients at 9,170 service sites in medically underserved areas across the country. More than 70 percent of patients have incomes below the federal poverty level.[57] See Figure 1.7.

Figure 1.7 **Health Center Patients Are Disproportionately Poor, Uninsured, and Publicly-Insured**



Source: Health Centers data: Based on Bureau of Primary Health Care, HRSA, DHHS, 2012 Uniform Data System. Source for Health Coverage and Poverty data: U.S.: Kaiser Family Foundation, State Health Facts Online, www.statehealthfacts.org. Urban Institute and Kaiser Commission on Medicaid and the Uninsured estimates based on the Census Bureau's March 2012 and 2013 Current Population Survey (CPS: Annual Social and Economic Supplements).

Most states are making efforts to integrate physical and mental health services, recognizing that poorly managed mental healthcare services compromise the effectiveness of treating patients' physical problems.[58] The patient-centered "medical home" is one model of integrated care that Medicare and Medicaid are using. The idea is that a team of providers coordinates the care of a single patient. A nurse who conducts home visits may be one member of a team, led by the patient's primary care physician, which shares information to provide the best care possible. In addition to home visits, other components may include mental health care, pediatric care, and family services to address issues such as domestic violence and custody disputes. The medical-home model attempts to reduce the fragmentation in the health system that contributes to making health care so much more costly in the United States than in other countries.

Countering Toxic Stress

Among adults who have spent more than half their childhood years living in poverty, one-third to half will also be poor throughout their early and middle adulthood.[59] Statistics like these underscore the value of investments proven to be effective in breaking the cycle of intergenerational poverty. Early education is one of the best investments of all. For children from disadvantaged backgrounds, high-quality child care and preschool have been shown to lead to better health and educational outcomes in adulthood.[60] Society benefits as well—every dollar invested in high-quality early education yields $8 to $9 in later productivity gains for the nation's economy.[61]

Head Start and Early Head Start provide some low-income children with access to high-quality preschool programs. Despite growing awareness of the importance of preschool, less than 50 percent of income-eligible children are enrolled in a Head Start program, and less than 10 percent in Early Head Start. See Figure 1.8. In a nationally representative sample of preschool children, researchers found that compared with children cared for exclusively by their parents, low-income preschoolers attending a childcare center had lower levels of both low food security and of very low food security. The authors suggest that this may be due partly to parents being able to work more since their children were cared for at the center.[62] Another reason is that children receive nutritious meals at the centers. A Children's HealthWatch study of children in licensed childcare centers found that those receiving meals were more likely to have healthy weight and height for their age. They were also 26 percent less

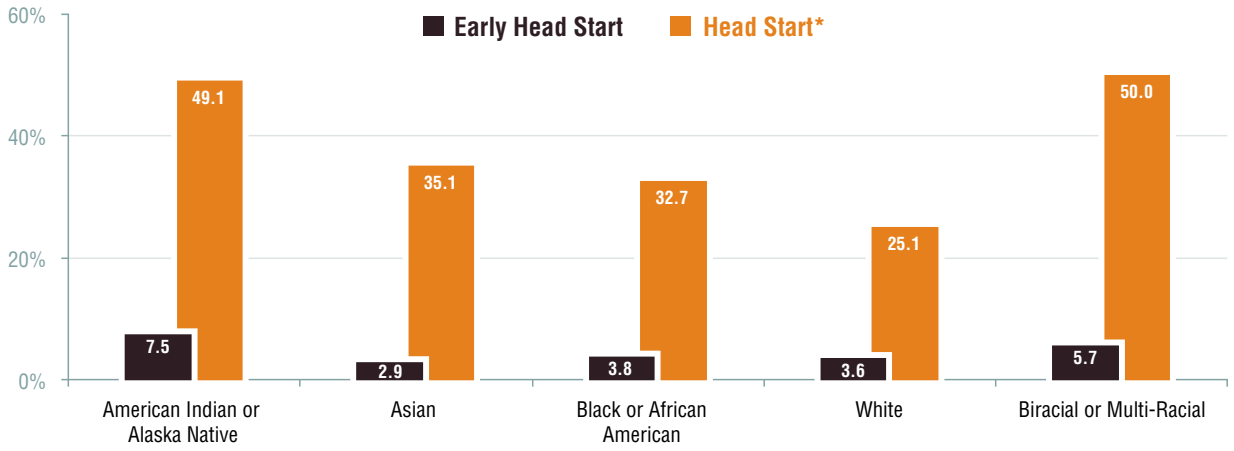
likely to be hospitalized than a similar group of children who were in child care but not receiving meals there.[63]

In policy debates about child nutrition programs, the Child and Adult Care Food Program (CACFP) rarely receives the attention that WIC or the National School Lunch Program does. That may change as national investments increase in early childhood development, which many policymakers recognize are becoming more necessary for the United States to remain competitive in a global economy. CACFP currently serves 3.3 million low-income children every day in early care and education programs.[64] All of the children's meals and snacks must meet strict nutritional requirements. CACFP allows licensed childcare centers, family childcare providers, after-school programs, and Head Start and Early Head Start programs to be reimbursed for the foods they serve.[65]

Like food, shelter is such a basic need that it is little wonder it becomes the all-encompassing focus of a homeless parent's life, crowding out other concerns.

Bright Beginnings, an early education and childcare center in Washington, DC, uses CACFP to provide for the children it serves in its Early Head Start program. Bright Beginnings opened in 1994. It is unique among early education programs because the families it serves are homeless. All Head Start and Early Head Start programs are required to provide parent education and outreach activities related to health and other issues. At Bright Beginnings, the wrap-around services provided take this to a higher level. This is the quintessential two-generation approach to fighting poverty. The families at Bright Beginnings are among

Figure 1.8 **Children Enrolled in a Head Start Program as a Percentage of All Children in Poverty,** by Race, Program Year 2013-2014**



*Head Start includes Migrant Head Start

**Children in poverty, ages 0-3 for Early Head Start and ages 3 to 5 for Head Start

Sources: Data on number and percent enrollment: The Administration for Children and Families, Early Childhood Learning and Knowledge Center. {various years}. Head Start program information report (PIR). Author. Poverty data for percentages: US Census Bureau. (2015). Current Population Survey: CPS table creator. Available at: http://www.census.gov/cps/data/cpstablecreator.html.

the most vulnerable in our society. They are headed predominantly by single mothers who grew up in poverty. A great many were homeless themselves as children.

Like food, shelter is such a basic need that it is little wonder it becomes the all-encompassing focus of a homeless parent's life, crowding out other concerns. Researchers studying the effects of stress on decision-making in the context of poverty describe this in terms of "bandwidth." The more impoverished and disadvantaged people are, the less bandwidth they have available to deal with anything beyond meeting basic needs. "Figuring out how to survive in poverty takes up a huge amount of cognitive capacity," says Princeton psychologist Eldar Shafir, whose research focuses on decision-making among people of all income levels. "When so many moments of the day require your full attention, there's very little of it left to worry about things that are not right in front of your eyes ... and then you start doing things you wish you hadn't done. You don't anticipate things that are going to happen tomorrow."[66]

Todd Post/Bread for the World

Growing recognition about the benefits of early education to children and society has not been accompanied by a significant increase in new resources.

Bright Beginnings helps expand bandwidth for parents with a range of support services. Every parent with a child at the center develops a family-partnership agreement, where she or he establishes goals and a plan for how to achieve them, whether that means going back to school for a GED, enrolling in college, or getting a job. It may be the first job for some. "No one ever talked to them about setting goals," says Tamara Perez, one of the social workers on staff. "Growing up they never dreamed of saying I want a career."

Sherry Watkins, Family and Health Services Specialist, says that what mothers value above all else about Bright Beginnings is the security of knowing their children are in a stable, structured environment—five days a week, up to 12 hours a day if necessary. Structure is what they cannot provide for their children at this point in their lives. Watkins means "security" in a quite literal sense. Almost every child at Bright Beginnings has witnessed domestic violence. One of the main reasons that families are homeless is that a mother's "choices" are either homelessness, or exposing herself and her children to an abusive partner.

Box 1.2

HEALTHCORPS COORDINATORS EMPOWER YOUTH AT THEIR SCHOOLS

by Karen Wilkinson, HealthCorps

"It's a very complicated situation and there's a lot of embarrassment around it," said Alice Curchin, HealthCorps Coordinator at Health Professions High School (HPHS) in Sacramento, California.

At a school where more than 85 percent of the students qualify for the National School Lunch Program, healthy eating seems unrealistic to some. There is simply not enough money for that.

When Curchin discusses incorporating more fruit, vegetables, and whole foods into their diets, many students explain that they're not staples at home, and besides, they're too expensive.

Curchin and 43 other HealthCorps coordinators—recent college graduates with a passion for health—are anchored at high-needs high schools across the country. They work in classrooms and the cafeteria. They lead after-school clubs that incorporate nutrition, fitness, and mental resilience into a comprehensive health education.

HealthCorps Coordinator Alice Curchin and students at Health Professions High School in Sacramento, California.

The coordinators' mission is to empower youth to make informed, mindful decisions about their lives through peer mentoring and sharing skills such as "Grocery Shopping on a Budget."

At HPHS and many other schools in California and across the country, students' access to fresh produce is limited and the convenient options are fast-food restaurants and corner store markets.

"Living in food deserts can leave young adults with the impression that leading a healthy lifestyle is unattainable, something reserved only for those with more income and resources," said Karen Buonocore, Vice President of HealthCorps Programs. "We believe everyone should have the tools and knowledge to create such a lifestyle for themselves, and it's through our HealthCorps Coordinators' teachings and one-on-one mentorship that those seeds are planted."

These lessons are incorporated into students' physical education classes at HPHS, where Curchin interacts with the freshman and senior classes—nearly half the student population. Using a virtual shopping cart on a popular grocery chain's website, students can shop and choose which foods give them the most "bang for their buck."

Simply comparing the price per unit is one element of the challenge. For example, buying rice and beans in bulk proves to be a cheaper price per unit than purchasing such items boxed. Students also learn that shopping for produce that's in season is more affordable, especially when found through farmers' markets. And of course, empty calories found in soda, chips, and alcohol is part of the discussion.

Being a critical consumer is also an element of the lesson, which encourages students to cut through advertising jargon that's meant to entice them into buying into brands before quality.

Students leave with more tools to share with their families, and skills to use when they're out of the house and on their own, Curchin said.

"Even if they don't use this information right now, I'm hoping that everything I teach—remaining active, choosing more fruits and vegetables and less processed food, learning to calm the mind—will be filed away in their brains and pulled out to use down the road when they have the opportunity to make a change," she said.

Founded in 2003 by Dr. Mehmet Oz and his wife Lisa to reverse the childhood obesity crisis, HealthCorps educates teens to take their health into their own hands. The organization works with schools where at least half the students qualify for the National School Lunch Program.

Karen Wilkinson is a HealthCorps communications consultant.

Living with Disability

The poverty rate for people with disabilities is higher than for any other major demographic group: whites, blacks, Hispanics, Native Americans, seniors, children, or female-headed households.[67] Among people who experience persistent poverty (continuous poverty over a 24-month period), nearly two-thirds have a disability.[68] Children who live with a disabled adult are almost three times as likely to experience very low food security (the most severe form of food insecurity—the kind that may mean that one or more family members does not eat for a whole day) as other children.[69]

U.S. Department of Health and Human Services/SAMHSA

In 2013, the poverty rate for non-institutionalized working-age adults (ages 18-64) with disabilities was 28.8 percent, compared to 12.3 percent for working-age adults without disabilities.[70] The Census Bureau began reporting the poverty rate among people with disabilities only recently, and USDA still does not report annually on the food insecurity rates of households or individuals with disabilities. In a one-time study in 2013, the agency found that nearly one-third of food-insecure households included a working-age adult with a disability. Among households with very low food security, 38 percent had a working-age adult with a disability.[71] Working-age adults with severe disabilities are more than twice as likely to experience persistent poverty as those with non-severe disabilities.[72]

Even when they have equal levels of education and postsecondary training, workers with disabilities earn on average less than two-thirds of every dollar earned by their nondisabled peers.

Despite their large numbers and persistent hardships, people with disabilities are largely missing in discussions of why food insecurity is still so common in the United States. But in a report like this one, about the relationship between hunger and health, it is impossible to ignore them.

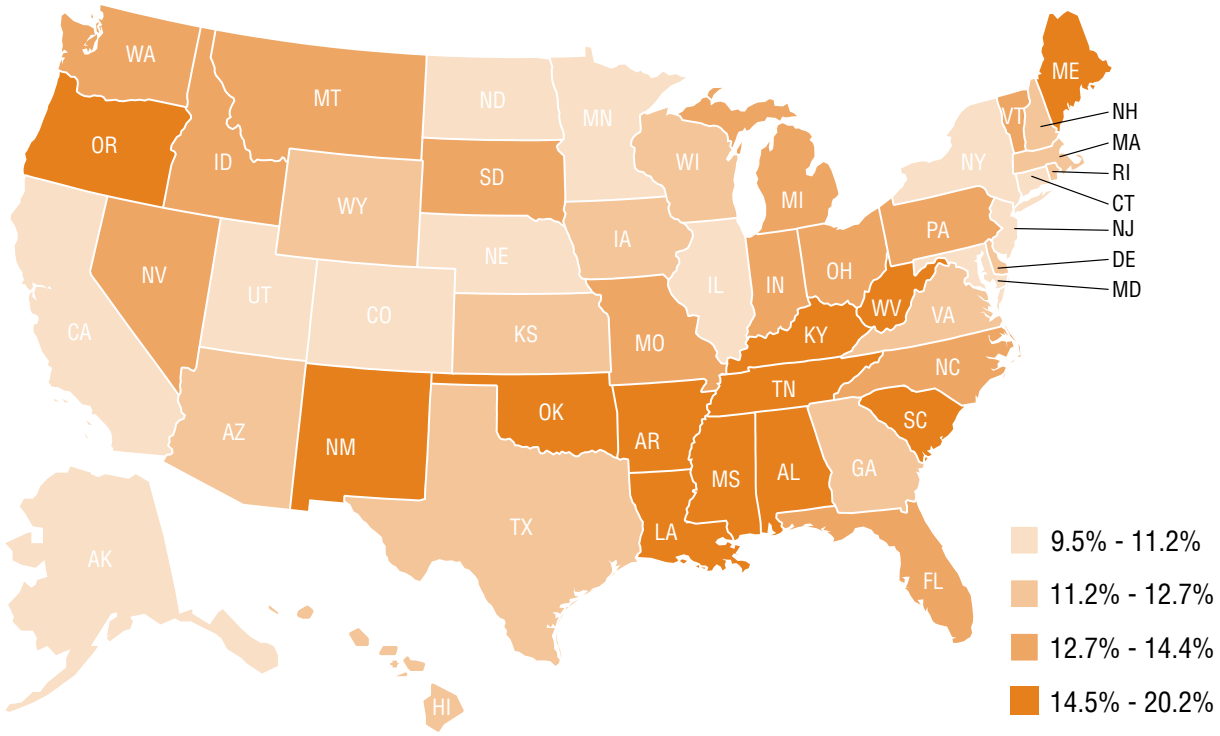
The Americans with Disabilities Act (ADA) defines disability broadly as "a physical or mental impairment that substantially limits one or more major life activities." About 57 million people—19 percent of the population—had a disability in 2010, according to the decennial census, with more than half reporting their disability as severe.[73] "Disability" is often not as straightforward or clear-cut as one might assume. For example, 12 percent of U.S. working-age men and 13 percent of women live with what is called a complex activity limitation, meaning that they have a limited ability to function at work, maintain a household, live independently, or participate in community activities.[74]

The South and Appalachia have higher disability rates than the rest of the country. See Figure 1.9. People in these regions have more risk factors for disability: as a group, they are poorer, older, less educated, and more likely to work in blue-collar jobs.[75] The South and Appalachia are also where we find significant health disparities, including higher rates of food insecurity.[76]

Working-age people with disabilities can apply for income support from two federal programs: Social Security Disability Insurance (DI) or Supplemental Security Income (SSI). In 2014, 9 million people who had become disabled during employment received DI, and another 4.9 million with severe physical or mental disabilities received SSI.[77] The Social Security Act is the law that authorizes these programs, and it defines disability far more narrowly than the ADA: "[The] inability to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment which can be expected to result in death or which has lasted or can be expected to last for a continuous period of not less than 12 months."[78]

The typical DI beneficiary is in his or her late 50s—70 percent are over 50, and 30 percent are 60 or older.[79] People are twice as likely to be receiving DI at age 50 as at age 40—and twice as likely at 60 as at 50.[80] See Figure 1.10. Mortality among older DI recipients is three

Figure 1.9 **Civilians with Disabilities Living in the Community as a Percentage of the Population, by State, 2013**

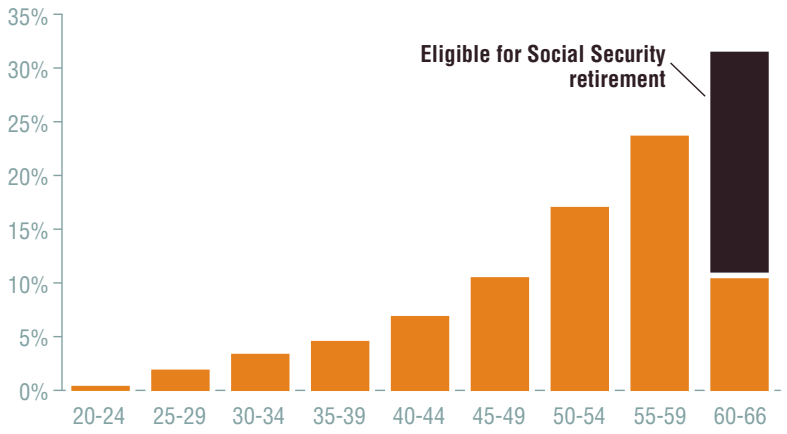


Source: Susan Stoddard (2014), *2014 Disability Statistics Annual Report*, University of New Hampshire Institute on Disability

to six times the average for their age group, and many die within a few years of qualifying for assistance.[81] To qualify, applicants must be suffering from a severe, medically determinable physical or mental impairment based on clinical findings from acceptable medical sources. Essentially, the person must be unable to do any job.

Figure 1.10 **Most Disability Insurance Beneficiaries Are Older, and Many Are Eligible for Retirement**

Share of disabled-worker beneficiaries by age group, December 2013



Source: Kathy Ruffing and Paul N. Van de Water (December 2, 2014), *Boosting Disability Insurance Share of Social Security Payroll Tax Would Not Harm Retirees*, Center on Budget and Policy Priorities.

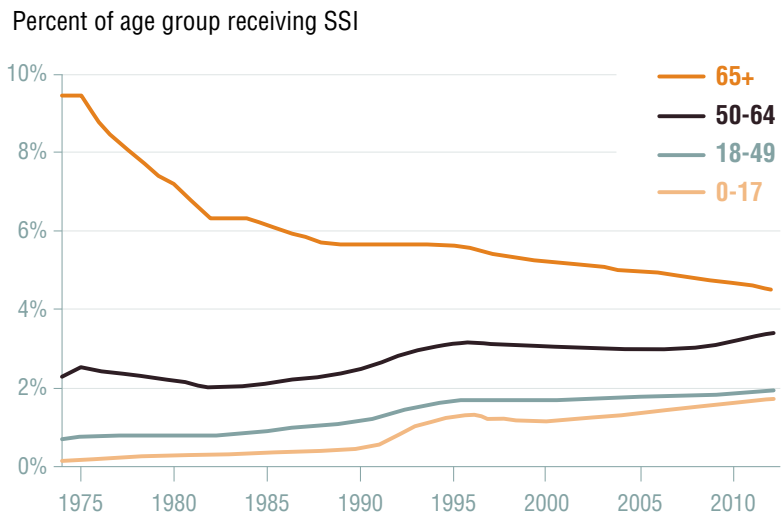
The stereotypical image of someone with a disability remains a person in a wheelchair. USDA's 2013 report, *Food Insecurity Among Households With Working–Age Adults With Disabilities*, reinforces the stereotype by picturing a man in a wheelchair on the cover.[82] In reality, six in 10 people who receive SSI have a mental disability.[83] DI and SSI dominate the policy debates about assistance to people with disabilities, although there are millions of other people living with mental and physical disabilities that aren't severe enough to qualify for benefits under these programs. One place people with a mental disability often turn up is in the nation's jails and prisons. There are more than three times as many mentally ill people in jails and prisons as there are in hospitals. In Nevada and Arizona, it is nearly 10 times as many.[84]

Overall, about one-fifth of all families with a disabled worker are poor; without DI, nearly half would be.[85] In 2015, the average monthly DI payment was $1,165.[86] In 2015, the basic monthly benefit for SSI was $733 for an individual and $1,100 for a couple, or about three-fourths of the poverty level for a single person and slightly over 80 percent for a couple.[87] Most SSI recipients have no other source of income. A Social Security Administration study in 2010 reported that the poverty rate of SSI recipients, with SSI income included, was 43 percent. Without SSI, the poverty rate would have been 65 percent.[88]

Fewer people are joining the ranks of DI beneficiaries. In fact, the number of people enrolled is growing at the slowest rate in 25 years. The growth rate will continue to slow as baby boomers who receive DI get older and transition to Social Security retirement benefits. There is a common misperception that both DI and SSI are growing out of control. This is simply not true. Most applicants for DI are denied benefits, a fact often conveniently overlooked by people who claim that the program is growing out of control. The rate of growth in SSI has been stable since the mid-1990s. See Figure 1.11. The number of recipients continues to rise because the U.S. population continues to rise, but the rate of growth of the SSI population is slower than the rate of growth of the U.S. population as a whole. [89]

DI benefits are financed primarily through the Social Security payroll tax, the same mechanism that finances the retirement program. And like retirement benefits, DI payments are based on how much an individual worker has paid in. The DI trust fund is presently projected to become insolvent in 2016. A simple solution would be to shift money temporarily from the retirement fund to the DI fund as needed to keep it solvent. This is what Congress did the last time that insolvency was imminent, in 1994. So far, the current Congress has rejected a similar fix. The optimal solution would be to shore up funding so that both the DI and retirement programs can pay out benefits in full indefinitely. If Congress fails to act on either option, DI benefits will be cut by 20 percent across the board starting in 2016, with dire consequences for people who are already food insecure or nearly so.

Figure 1.11 **Supplemental Security Income Recipients Have Been Generally Stable or Falling as a Share of Population Since the Mid-1990s**



Source: Kathy Ruffing (March 27, 2014), "SSI Should Be Strengthened, Not Cut," Center on Budget and Policy Priorities.

Working-age Adults with Disabilities

The best anti-poverty program is a good job—one that pays a living wage. This is no less true for people with disabilities as for people without disabilities. Unfortunately, people with disabilities are too often the last hired and first fired. In 2013, the labor force participation rate of working-age people with disabilities was 31.4 percent, compared with 76.2 percent for those without disabilities.[90] This is not because people with disabilities prefer not to work; in surveys, they say that they would like to be employed, just the same as people without disabilities.[91]

Government policy itself may be contributing to employers' lowered expectations of what workers with disabilities can accomplish. According to the Fair Labor Standards Act, it is legal for some employers to pay workers with disabilities subminimum wages.[92] Workers with disabilities earn on average just 63 cents for every dollar earned by their nondisabled peers, even when they have equal levels of education and postsecondary training.[93]

For a 2014 report for the U.S. Senate Committee on Health, Education, Labor, and Pensions (HELP), committee staff interviewed more than 400 people with disabilities, letting them speak for themselves about the barriers they face to employment.[94] A middle-aged man with autism said, "I have had more 15-minute interviews than I can count with people who were impressed with my credentials on paper but were crestfallen to find they belonged to me. Most recently, I failed in a group interview process even though the director personally recruited

me." A woman with a psychiatric disability said, "It is impossible to disclose to a potential employer a need for a reasonable accommodation without revealing that one also lives with a mental health condition. Yet, to do so almost inevitably means we will not get the job."

Many people with disabilities who want to work are deterred by the fact that they could lose their healthcare benefits. In most states, anyone who receives SSI benefits is automatically eligible for Medicaid. DI recipients can get Medicare benefits after a two-year waiting period. Medicare and Medicaid enable people with disabilities to receive health support services that would otherwise be unaffordable. Individuals receiving DI payments are permitted to earn up to $12,840 a year ($21,600 per year for those who are blind) without losing their eligibility for disability benefits or facing reductions in their monthly benefits. SSI benefits are far less generous: each dollar of earned income, from the first dollar on, reduces one's SSI benefit by 50 cents. Children with disabilities are also eligible for SSI since a child's disability often imposes additional costs on his or her caregiver. Personal care attendant services can cost as much as $60,000 a year.[95] When health insurance won't cover these costs, parents of disabled children have little choice but to sacrifice employment to provide the care their children need—but, of course, this can easily plunge the whole family into poverty.


New York City Department of Transportation

Accessible transportation options are crucial to ensuring that people with disabilities are able to participate in the workforce.

In the 25 years since the ADA was passed, society has adapted in many ways to recognize the rights of people with disabilities. Government is responsible for holding employers accountable for respecting the rights of people with disabilities, and it has done an admirable job in many respects. But government also needs to ensure that its policies are not counterproductive. When people with disabilities want to work, be independent, and contribute to society and the economy, the system should not pit these goals against the need to keep the government medical benefits that are essential to their lives and health.

Out-of-pocket medical costs are a significant burden for people with disabilities, regardless of their health insurance coverage. They are nearly twice as likely as people without disabilities to have unpaid medical bills.[96] In a 2014 survey by the National Disability Institute, 70 percent of respondents with disabilities reported that if they had an unexpected $2,000 expense, they would not be able to come up with the money.[97] One major reason: people who receive SSI payments are not allowed to hold more than $2,000 in a savings, checking, or retirement account.[98]

Trapped in a safety net that limits their prospects of finding employment, often isolated in their homes, perhaps it is not surprising that people with disabilities have higher rates of major depression than people without.[99] A woman interviewed for the congressional HELP committee report explained the situation she and others with disabilities are forced to accept: "You cannot try to elevate yourself. If you try then you risk losing services. You would have to start the application all over again. Mine took 6-7 years! I will never go through that again, ever."[100]

The Medicare Years

In 1960, one-third of all seniors lived in poverty,[101] and two-thirds had no health insurance.[102] Today, less than one-tenth live in poverty. Nearly all seniors qualify for Medicare, and 4.6 million low-income seniors are eligible for Medicaid as well.[103] Social Security deserves the credit for much of this improvement. Although its retirement benefits are modest compared to public pension programs in other high-income countries,[104] the senior poverty rate would be five times as high without them. That means that *half of all seniors* would be living in poverty today.[105]

Today, social welfare policies that worked to reduce economic hardship among seniors for the past half-century are coming under increasing stress. Between 2001 and 2013, the threat of hunger among seniors increased by 45 percent, according to James Ziliak and Craig Gundersen

Through the Senior Farmers' Market Nutrition Program, low-income seniors receive coupons to use at farmers' markets.

USDA photo by Lance Cheung

Box 1.3

COMMUNITY SERVINGS: IS IT NUTRITION PROGRAMMING, OR IS IT HEALTH CARE? AND DOES IT MATTER?

Community Servings provides medically tailored, home-delivered meals to people with acute life-threatening illnesses. Medically tailored meals are at the very top level of food assistance. While less specialized efforts such as the national nutrition programs and emergency food assistance are determined to provide the most nutritious foods they can, the quality of medically tailored meals can be a matter of life and death. Community Servings and other organizations that provide meals tailored to their clients' medical conditions could be considered a nexus between nutrition programs and health care.

Medically tailored meals are carefully constructed by dieticians and created by specially trained chefs, whose challenge is not only to meet the specific dietary guidelines required for each disease or condition, but also to make the meals tasty. This is vital since a common side effect of the medications that people with life-threatening illnesses are taking is loss of appetite. Chefs also do their best to take into account the unique characteristics of their clients/patients, such as cultural backgrounds, using comforting flavors to remind them of pleasant times spent with family and friends, when none of these may now be within reach.

Community Servings operates a state-of-the-art nutrition facility in Jamaica Plain, a neighborhood outside Boston, producing and delivering 9,600 lunches and dinners per week to individuals and families across 300 square miles in Massachusetts. Clients are enrolled through physician referral. More than 90 percent are living in poverty. All are critically ill, too weak to leave their homes or stand at the stove to cook. Without these meals, they could literally starve to death in their homes.[106]

Community Servings was founded in 1990 while the HIV/AIDS pandemic was raging in the United States. The first generation of antiretroviral drugs had recently arrived, but they were less effective than the ones available today, and they required strict compliance with complicated medication protocols. And, as it turned out, lack of proper nutrition and food insecurity posed a major barrier to metabolizing them. Community Servings was launched by AIDS activists, faith groups, and community organizations to deliver dinners to patients who were too weak to shop or cook for themselves. Other organizations soon formed to do the same. All got a boost when the Ryan White CARE Act was passed in 1990 since it set aside funds for home delivery of medically tailored meals.

Studies show that patients receiving medically tailored meals adhere more closely to their medication regimens, miss fewer medical appointments, and are readmitted to the hospital at lower rates.

Now, more than 25 years after it started, Community Servings has expanded its operations to provide 25 different meal regimens based on clients' medical conditions. The largest share of meals still goes to people with HIV/AIDS, followed by meals for people with cancer, renal failure, diabetes, cardio and lung diseases, and multiple sclerosis.

"In the continuing debate about how to control soaring healthcare costs, poor nutrition and lack of access to healthy food are routinely ignored," write David Waters, CEO of Community Servings, and Robert Greenwald, director of the Center for Health Law and Policy Innovation at Harvard Law School.[107] Public and private insurers spend millions of dollars on health care for critically ill patients, but if the patients do not have the right food, there is much less chance of a lasting recovery.

Today the demand for medically tailored meals far outstrips the supply of service providers. Community Servings is one of fewer than a dozen nonprofit organizations across the country that are able to deliver complex, medically tailored meals to critically ill patients. Nursing homes and hospitals can and do provide such meals, but organizations like Community Servings can produce and deliver them at a fraction of the cost. Yet nursing homes, hospital stays, and prescriptions are covered by insurance, while medically tailored meals are not.

Todd Post/Bread for the World

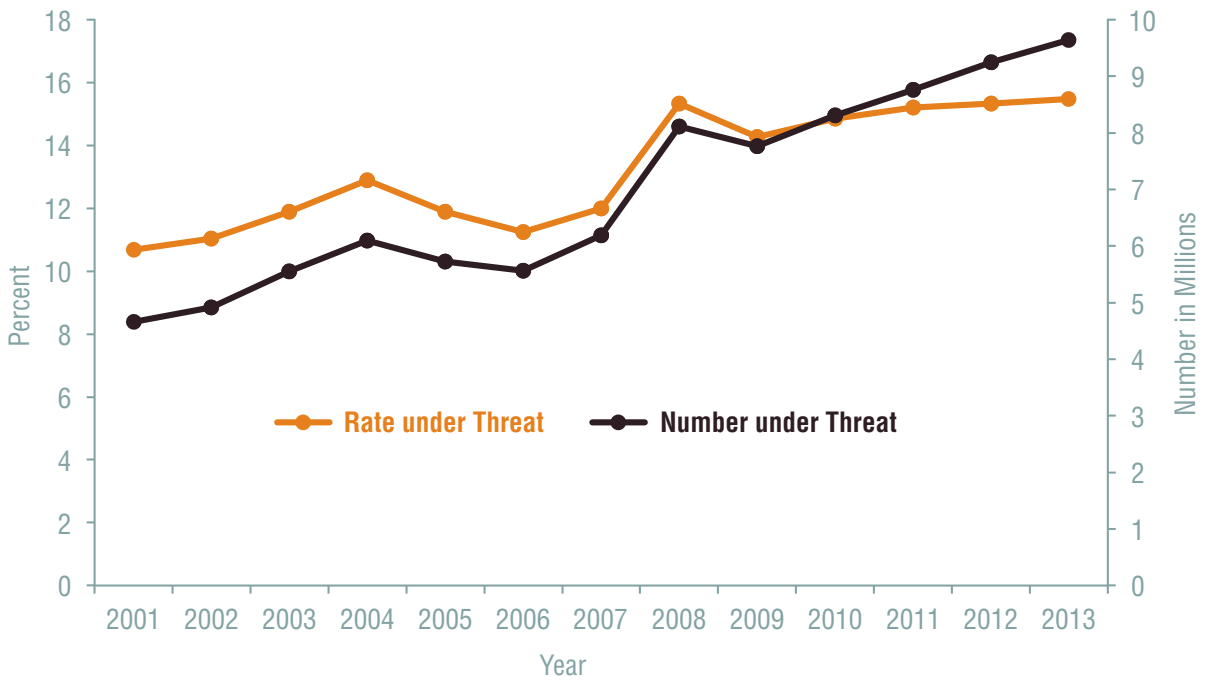
David Waters, CEO of Community Servings, displays one of the medically tailored meals prepared and delivered by the organization to chronically ill clients.

As part of healthcare reform, state Medicaid programs could seek permission to experiment with medically tailored meals. As noted above, the vast majority of Community Servings' clients are income-eligible for Medicaid. The cost savings alone should be enough to grab policymakers' attention. Researchers found that the monthly healthcare spending on patients who were receiving medically tailored meals was 37 percent lower than the expenditures for those with comparable conditions who were not receiving these kinds of meals.[108] Studies also show that patients receiving medically tailored meals adhere more closely to their medication regimens, miss fewer medical appointments, and are readmitted to the hospital at lower rates.[109] Ninety-six percent of the healthcare workers surveyed by Community Servings reported that the home-delivered meals improved patients' health.

in the most recent edition of the annual report *The State of Senior Hunger in America*.[110] See Figure 1.12. The report relies on the 18-item food security survey administered by the Census Bureau, and its findings are consistent with USDA's annual report, *Household Food Security in the United States*. But Ziliak and Gundersen include a category—"marginal food insecurity"—that USDA does not. Although they do not appear in USDA's data on the prevalence of food insecurity, marginally food insecure people have more in common with food insecure people, both in terms of socio-demographic characteristics and food purchasing patterns, than they do with those who are food secure.[111] When marginal food insecurity is included in the analysis, the percentage of seniors threatened by hunger jumps from 8.7 to 15.5 percent.

Economic security in old age used to be described in terms of a three-legged stool: an employee pension, personal savings, and Social Security. The savings and pensions legs are wobblier than ever. For the most part, employee pensions have been replaced by 401(k)/IRA accounts. But the typical household with 401(k)/IRA holdings is projected to receive post-retirement monthly payments of less than $500 from these sources.[112] Nearly one in five adults ages 55-64 has *no* retirement savings, according to a 2013 Federal Reserve survey.[113] That leaves Social Security. For 20 percent of retired men and 30 percent of retired women, Social Security provides at least 90 percent of their total income.[114] The average Social Security benefit for men 65 and older is about $17,600 per year, and for women only $13,500.[115] These seniors are over the poverty line, if not by much, but another complication is that as people get older, healthcare costs consume a greater share of their incomes. See Figure 1.13.

Figure 1.12 **Trends in Threat of Senior Hunger**

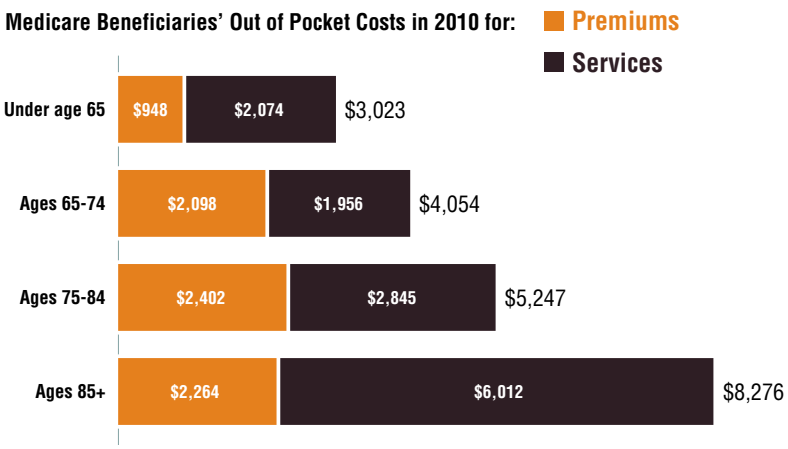


Source: James P. Ziliak and Craig Gundersen (April 2015), The State of Senior Hunger in America 2013: An Annual Report, National Foundation to End Senior Hunger and National Association of States United for Aging and Disabilities.

Thus, not surprisingly, the risk of food insecurity among older adults increases as medical expenses increase.[116] Out-of-pocket costs rise with age for everyone, but at a faster rate for women because they live longer than men. From 2000 to 2010, average out-of-pocket costs increased 44 percent for Medicare beneficiaries.[117] In a national survey of cancer patients, one in four reported using up all their savings to pay for treatment, and one in 10 said they had to cut back on food and other basic necessities.[118] This is a senior issue because most cancer patients are over the age of 65. Like heat or eat, "treat or eat" is an expression that speaks for itself. Cutting back on food to pay for medical treatment is clearly at odds with successful treatment of disease. Hunger and malnutrition are debilitating conditions at any age, but in older adults, 92 percent of whom have at least one chronic disease,[119] hunger is potentially deadly.

SNAP participation rates among seniors are low: three out of five who qualify do not apply for SNAP.[120] One of several reasons is misinformation about the amount of the benefit they would receive. Program rules allow seniors to deduct monthly medical expenses over $35 from their gross income. For seniors with high medical expenses, this can significantly increase their monthly SNAP allotment. Fifty-five percent of SNAP participants who are seniors qualify for the medical deduction, yet only 14 percent use it.[121]

Figure 1.13 **Affording the Rising Costs of Health Care**



Note: Analysis excludes beneficiaries enrolled in Medicare Advantage plans. Premiums includes Medicare Parts A and B and other types of health insurance beneficiaries may have (Medigap, employer-sponsored insurance, and other public and private sources).

Source: Kaiser Family Foundation analysis of the Medicare Current Beneficiary Survey 2010 Cost and Use file.

Nutrition programs, particularly SNAP, look like a bargain compared to the cost of a hospital stay. Among seniors eligible for both Medicare and Medicaid, an estimated 25 percent of hospitalizations are potentially preventable. [122] People 65 years and older are hospitalized at much higher rates than younger adults or children.[123] One in three seniors admitted to a hospital in the United States is malnourished.[124] Malnourished patients have longer hospital stays and respond less well to treatment, their risk of developing surgical-site infections is three times as high as those who are not malnourished, and 45 percent of the patients who fall while in the hospital are malnourished. [125] When a child or younger adult falls, the result may be nothing more than a bruise. But when seniors fall, they may break bones, and a fall may even prove fatal. The costs associated with falls during hospital stays amount to nearly $7 billion a year, [126] and under the ACA, hospitals can no longer bill Medicare and Medicaid for the costs of treating conditions that were acquired in the hospital.[127]

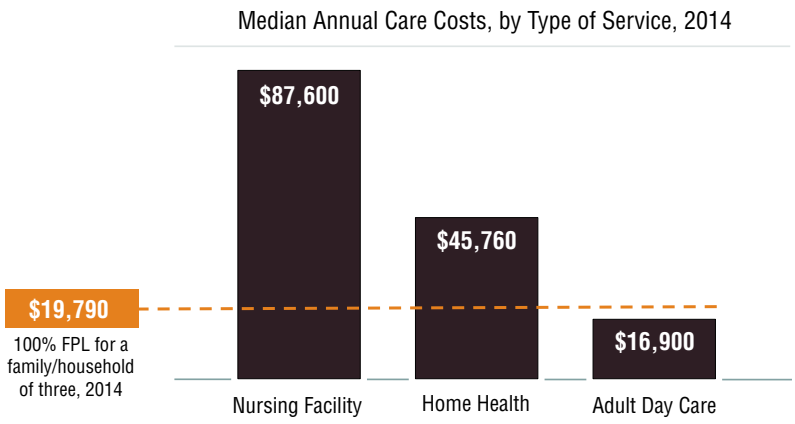
Hospitals should make sure at discharge that patients are aware of available nutrition services and have access to healthy food. They have a financial as well as a moral incentive to do so. Under the ACA, hospitals with high rates of Medicare readmissions are penalized–they receive lower reimbursements. Nearly 20 percent of Medicare patients discharged from a hospital are readmitted within one month.[128]

Old Age and Disability

Senior participation in SNAP may also be low because of mobility constraints. Unfortunately, the research literature has not addressed the subject—but it is not hard to imagine an older person living alone with no transportation to the grocery store. We saw earlier how disability rates climb with age. A 2011 study by the Government Accountability Office (GAO) on the unmet needs of seniors "found that people who were age 80 or older, female, or living below the poverty threshold were more likely to need services than people without these characteristics."[129] And approximately 62 percent of local agencies surveyed by GAO reported transportation to be among the most requested of all support services.

In 2011, the first wave of "baby boomers" reached retirement age. From now until 2030, an estimated 10,000 people in the United States will turn 65 every day.[130] The number of older people with a disability is expected to double during this period. A large share of these seniors will become "dual eligibles" in Medicare and Medicaid.[131] Seniors currently make up 9 percent of Medicaid beneficiaries, but they account for 21 percent of program costs.[132] Close to 7 million seniors need long-term care, services, and supports. Unpaid family members shoulder most of this responsibility. Based on 2011 and 2012 data, a team of economists at the RAND Corporation estimated at $522 billion the wages lost because workers were instead doing unpaid elder care during those hours.[133]

Figure 1.14 **Long-Term Services and Supports Are Expensive, Often Exceeding What Beneficiaries and Their Families Can Afford**



Sources: Genworth, Genworth 2014 Cost of Care Survey (Richmond, VA: Genworth Financial, Inc., March 2014), https://www.genworth.com/dam/Americas/US/PDFs/Consumer/corporate/130568_032514_Costof-Care_FINAL_nonsecure.pdf; U.S. Department of Health and Human Services, 2014 Poverty Guidelines, http://aspe.hhs.gov/poverty/14poverty.cfm.

Medicare does not cover the long-term care of seniors. "Middle-class families just aren't prepared for these costs," says Joe Caldwell, director of long-term services at the National Council on Aging. [134] See Figure 1.14. Thirty-five percent of people over 65 will have a stay in a nursing home at some point.[135] Seniors who are not poor at the time they enter a nursing home normally have to liquidate their assets and pay for their care until they run out of money altogether. At that point, they will qualify for Medicaid, which picks up the cost of their long-term care. Long-term nursing home care is largely paid for by state Medicaid programs. Nearly 30 percent of Medicaid's combined federal and state spending—$123 billion in FY2013—goes toward long-term care for seniors and people with disabilities.[136]

States that increase the resources they devote to home-delivered meals can potentially reduce their spending on residents of nursing homes with low-care needs,[137] or people whose needs could be met in the community instead of a nursing home if services were provided. Anywhere from 5 percent to 30 percent of the patients in nursing homes are low-care residents.[138] Under

the Older Americans Act (OAA), seniors are provided with nutritious home-delivered meals. In 2009, only 3 percent of adults 65 and older received home-delivered meals.[139] Kali Thomas and Vincent Mor estimated that a 1 percent increase in the number of adults receiving home-delivered meals through the OAA would have saved state Medicaid programs $109 million.[140]

Kali Thomas saw the benefits of home-delivered meals in her own family. Her 98-year-old grandmother wanted to continue to live at home rather than spending her remaining time in a nursing home, but the closest family members were four hours away. The daily meals Thomas's grandmother received from Meals on Wheels America (MOWA) made it possible for her to maintain some independence until the end of her life.[141]

Between winter 2013 and spring 2013, MOWA conducted a randomized control trial of home-delivered meal programs at eight locations around the country. An analysis published in 2015 showed that home-delivered meals, more specifically meals that were delivered daily, led to improvements in clients' physical and mental health and decreased their anxieties about whether they would be able to remain in their homes.[142] The study, which had hundreds of participants, was designed to compare three groups: one receiving meals delivered daily, one receiving packages of frozen meals delivered weekly, and the control group, who were eligible to participate but were on the waiting list. MOWA gives priority to seniors with the greatest economic and social needs in all its programs.

Home-delivered meals help seniors maintain the independence they desire while reducing costs to the government on long-term care.

Participants were interviewed at the beginning and end of the 15-week trial. All of those who received meals fared better than people in the control group, but the group whose meals were delivered daily reported the best results. The analysis found statistically significant reductions in feelings of anxiety, loneliness, and depression. Perhaps not surprisingly, people living alone reported the greatest gains. Not considered statistically significant, but still improvements, were participants' reports of fewer falls and lower rates of hospitalization.[143]

The value of home-delivered meal programs goes beyond their impact on hunger and malnutrition. The social contact with the volunteers who deliver the meals is a critical part of supporting the health and well-being of seniors who live alone. In situations where there is a caregiver present, frequently a spouse who may also be in poor health, the home-delivered meals and social contact with volunteers also benefit the caregiver. Caregivers' stress is not only a risk factor for their own morbidity and mortality[144] but also increases the likelihood that a patient will enter a nursing home

To bend the cost curve on long-term care, spending has to shift from institutional to community-based care. Evidence from MOWA shows that home-delivered meals help seniors maintain the independence they desire while reducing costs to the government on long-term care. The ACA provides incentives to states to support community-based services to allow beneficiaries to remain in their home for as long as possible.[145] And a study by the American Association of Retired Persons (AARP) shows that more than three-quarters of Americans over 65 say that this is what they want. The percentages are highest among those who are lower down on the income scale.[146] For seniors whose health is rapidly deteriorating, staying in their home may seem like an act of defiance against the erosion of their independence. The home may also be their link to emotional attachments to family and community and, as such, excruciating to give up.

HUNGER AND FOOD INSECURITY DRIVE UP HEALTHCARE COSTS

by Todd Post, Bread for the World Institute

The research cited in this chapter leaves little room for doubt. Hunger and food insecurity are harmful to people of all ages, making them vulnerable to a variety of illnesses and medical conditions.

Hunger and food insecurity also cost the United States as a nation much more than we may realize. When policymakers cut SNAP benefits, citing the need to reduce the federal budget deficit, these "savings" evaporate as soon as the first time a former SNAP recipient with diabetes ends up in the hospital after running out of the food needed to manage her condition. Or each time a child with a respiratory ailment ends up in the hospital because his parents were forced to choose between filling the empty refrigerator and heating the apartment.

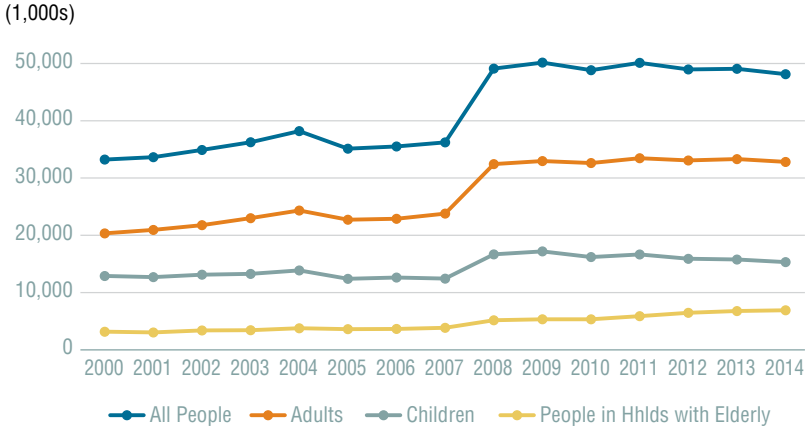
Hunger and food insecurity also cost us dearly in other ways: educational outcomes, labor productivity, crime rates, Gross Domestic Product, and much more. The overall costs of hunger and food insecurity to society may well be incalculable. But our report argues that hunger and food insecurity are a health issue, and it is possible to produce a reliable, albeit conservative, estimate of the health-related costs in particular. For the 2016 Hunger Report, we sought to update earlier calculations using recent data.

In 2014, the estimated health-related costs of hunger and food insecurity in the United States were a staggering $160.07 billion.

In 2014, the estimated health-related costs of hunger and food insecurity in the United States were a staggering **$160.07 billion**. John T. Cook of Boston Medical Center and Ana Paula Poblacion of Universidad Federal De São Paulo analyzed the costs specifically for the Hunger Report. Their full-length study, *Estimating the Health-Related Costs of Food Insecurity and Hunger*, is in Appendix 2, starting on page 183.

Cook and Poblacion have updated and built upon a 2011 study by a team of researchers from Brandeis University—itself an update of a 2007 study examining the costs of hunger and food insecurity. Cook and Poblacion have adjusted for the rise in healthcare costs since the Brandeis study was released. In addition, their study covers new ground, as they explain: "The pace, extent, and range of technical methods used in food security research has changed significantly over the past 5-10 years, as has the depth and nature of empirical evidence arising from that research."

Figure 1.15 **Numbers of People in the United States Living in Food-Insecure Households by Age Group, 2000-2014**



Source: Alisha Coleman-Jensen, Christian Gregory, and Anita Singh (September 2015), *Household Food Security in the United States in 2014*, United States Department of Agriculture.

Bread for the World Institute's interest in revisiting the Brandeis estimates is motivated by other exigencies than the need for fresh data. Prior to 2008, according to federal government data, the largest number of food insecure people in any single year was 38 million. But every year since 2008, the number of food-insecure people in the country has hovered between 48 and 50 million.[1] There were 49 million in 2012, 49 million in 2013, and 48 million in 2014.

Policymakers and the American public seem to share an alarming

complacency about this leap—10 or 12 million extra food-insecure people over the previous worst-case scenario. When the Brandeis study was published in 2011, the Great Recession that had caused the soaring food insecurity numbers had only recently ended. We assumed the numbers would fall as the economy improved. But five years into the recovery, we are still waiting for the improvement in food security we had expected by now.

U.S. policymakers and the public should understand the devastating toll of hunger and food insecurity on people's health, and they also need to know the economic costs. Individual stories of how hunger ravages bodies and souls are sometimes reported in the media, with little apparent effect on the status quo. Policymakers and the public are less likely to hear about the economic costs. We are hopeful that solid research to back up the estimate reported here, $160.7 billion of health-related costs in one year alone, will draw attention. Bread for the World and our advocacy partners will use every opportunity to make this information part of the public conversation about hunger, health care, and the federal budget.

Table 1.1 **Estimated Costs Attributable to Food Insecurity and Hunger in the United States, 2014**

Source of Cost	Costs ($Billion 2014 Dollars)
Direct health-related costs in 2014 based on new research evidence	$29.68
Non-overlapping direct health-related costs reported by Brandeis researchers in 2011, continued in 2014 and expressed in 2014 dollars	$124.92
Indirect costs of lost work time due to workers' illnesses or workers providing care for sick family members based on new research evidence	$5.48
Total direct and indirect 2014 health-related costs	**$160.07**
Indirect costs of special education in public primary and secondary schools, based on new research evidence	$5.91
Total costs of dropouts reported by Brandeis researchers in 2011, continued in 2014 and expressed in 2014 dollars	$12.94
TOTAL ESTIMATED COSTS	**$178.93**

Source: John T. Cook and Anna Paula Poblacion (November 2015), *Estimating the Health-Related Costs of Food Insecurity and Hunger.*

Keep in mind that $160.7 billion is a very conservative estimate. Cook and Poblacion based the number on a survey of empirical research published in peer-reviewed academic journals between 2005 and 2015. Their findings are based on only the health conditions covered in this body of research. The number leaves out a number of costs that seem like safe bets to be associated with hunger and food insecurity because there is scarcely any empirical research that would help quantify them. One example: the effect of hunger and food insecurity on the costs of medication nonadherence, which is so commonly seen in and out of health care that it has its own catchphrase, "treat or eat."

Even without an empirically-based estimate of these unaccounted-for costs, the wide scope of the kinds of costs not included leads us to believe that they add up to a staggering additional amount. The large gaps in the research literature indicate how much more work needs to be done.

At a conservative $160.7 billion in 2014—or nearly a trillion dollars since 2008—hunger and food insecurity are clearly driving up healthcare costs in a significant way. To the average worker, rising healthcare costs mean lower wages as employers struggle to cover the costs of providing insurance. And to elected leaders at any level of government, reining in the growth of healthcare costs is the biggest fiscal challenge they face.[2] By 2040, health care is expected to consume 25 percent of the U.S. Gross Domestic Product, up from the current 17 percent.[3] Compared to other options to help control this growth, ensuring that every person in the country has enough food to be healthy should be relatively simple.

Todd Post is editor of Bread for the World Institute's 2016 Hunger Report.

Joseph Molieri/Bread for the World

Partnering for Collective Impact

Launching Off Point

"Alone we can do so little; together we can do so much."

— Helen Keller

KEY POINTS

- Defining the health needs of a community is a collective endeavor involving stakeholders inside and outside of the healthcare sector.
- Health care should strengthen relationships with community partners who have expertise in addressing the social determinants of health. Engaging communities most affected by poor health outcomes is critical to developing effective solutions.
- The *Dietary Guidelines for Americans* are a launching off point for anti-hunger organizations to engage with the healthcare sector.
- Improving consumers' access to healthy foods in underserved communities is a cost-effective way to reduce the burden of chronic disease in the populations most affected by them.
- Improving access to healthy, locally grown foods can provide direct economic benefits to small and mid-sized farms.
- The active engagement of the healthcare sector could play a powerful role in ending hunger.

The Affordable Care Act creates new opportunities for healthcare establishments to work with local partners to address the social determinants of health. Hospitals are required to bring partners together to collectively define a community health needs agenda. Anti-hunger organizations and other stakeholders working to increase access to healthy foods in underserved communities need to be involved in this process.

A more just food system will lead to other improvements—improved health, less hunger, and less severe inequalities. Communities with limited access to healthy food are the locus of concentrated health disparities. Modest improvements in dietary quality in these communities would have a significant impact on reducing the burden of chronic disease.

Healthcare providers have already begun to engage community partners on strategies to improve access to healthy foods in underserved communities. Strategies include operating food pantries at health centers, writing prescriptions for fruits and vegetables redeemable at farmers' markets, installing food pharmacies on hospital campuses, and subsidizing

home-delivered meals for seniors and homebound patients. None of these activities would be possible without community partners to provide and distribute the food, explain and demonstrate to patients how to use unfamiliar foods, or assist in data collection to evaluate the effectiveness of what is being done.

There is broad concern in the United States—among people of all income levels—about the effects of the food system on health. Similarly, the benefits of improving the food system would accrue to all households, making it attractive to policymakers. But special attention must be given to overcoming access barriers in underserved communities.


Joseph Molieri/Bread for the World

Famers markets have become sites to engage members of a community on their health directly through the foods they eat.

"Communities of Solution" Come of Age

Nearly half a century has passed since forward-thinking leaders in health care recognized a fundamental problem with the U.S. healthcare system. The 1967 Folsom Report, one of the seminal works in the field of public health, argued that healthcare institutions, on their own, were incapable of dealing with the array of factors affecting community health outcomes.[1] The Folsom Report introduced the term Communities of Solution, based on the concept that a healthy community depends on contributions from a range of actors, inside and outside the healthcare sector, working together in a coordinated manner.

Community-based partnerships bring together a wide range of stakeholders who share a common interest in improving population health, meaning health outcomes spread over a community.[2] For example, Nemours, a children's health system based in Delaware, serves a population with high rates of asthma. Nemours works with community partners to teach parents how to manage their children's asthma. Nemours also pays to replace dusty mattresses, curtains, and carpets with hypoallergenic alternatives, and its partners make sure the purchases are made. Less than a year after the initiative began, children's asthma-related emergency room visits had dropped by 40 percent.[3]

POVERTY

POVERTY

Poverty rates are **TWICE** as high in the unhealthiest counties in each state compared to the healthiest ones.[1]

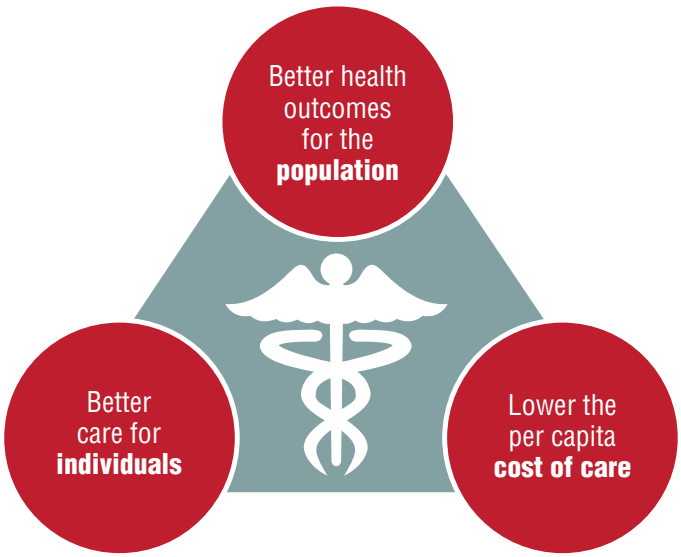
353 counties in the United States have had poverty rates of 20 percent or higher for 30 years or longer. **84 percent** of these persistently poor counties are in the South.[2]

In Colorado, Kaiser Permanente partners with Hunger Free Colorado, a statewide advocacy and outreach organization, to help counter the effects of food insecurity on diet-related diseases.[4] Healthcare providers within Kaiser Permanente identify patients at risk of hunger and refer them to Hunger Free Colorado. The staff there reviews patients' eligibility for federal nutrition programs, educates them about which programs they qualify for, and helps them apply. Patients also learn about food pantries, senior food programs, and home-delivered meal programs that are available. Seventy-eight percent of the patients referred to Hunger Free Colorado are taking advantage of the opportunity to get help from the organization.[5]

These two examples of institutions working with partners outside the formal healthcare system to improve population health outcomes in the communities they serve are not the only examples—but such partnerships are still uncommon. The healthcare sector has not focused its attention and resources upstream to social determinants of health such as food insecurity or substandard housing.

The Affordable Care Act (ACA) of 2010 has begun to change this. The triple aim of this landmark healthcare reform legislation is 1) to improve the patient experience, 2) to improve population health, and 3) to reduce the per capita cost of care. See Figure 2.1. The key to reducing per capita costs will come mostly from improvements in population health. Preventable chronic diseases now account for 86 percent of U.S. healthcare costs and affect 50 percent of the population.[6] As earlier parts of this report have shown, food insecurity and other social determinants are directly related to higher rates of chronic diseases.

Figure 2.1 **The Triple Aim of Healthcare Reform**



Source: Donald Berwick, Thomas W. Nolan, and John Whittington (2008), "The Triple Aim: Care, Health, and Cost," *Health Affairs* vol. 27, No. 3.

Accordingly, the ACA includes a number of carrots and sticks to encourage healthcare institutions to work more closely with community partners. More than half of the hospitals

Over **58 million** people—**18.7 percent** of the U.S. population—live in an area with a shortage of primary care health professionals. Six states exceed 30 percent, and Mississippi tops all at 57.3 percent.[3]

Unemployment rates are

1.5 TIMES

higher in the least healthy counties in each state as they are in the healthiest counties.[4]

in the United States are classified as nonprofit institutions, which means they qualify for tax-exempt status under federal and state laws.[7] In exchange, the hospitals are required to carry out activities that benefit their communities. In 2011, the total estimated tax benefits accruing to nonprofit hospitals were $24.6 billion.[8] Are hospitals using this money for community health improvement? Only a small part of it: a 2015 report by the Internal Revenue Service (IRS) showed that nonprofit hospitals in 2011 allocated less than 8 percent of all community benefit expenditures to community health improvement,[9] or less than 1 percent of their total expenditures.[10]


Zach Blum for Bread for the World

A monthly checkup for a patient enrolled in a Medicaid-funded prescription fruit and vegetable program targeting children with type 2 diabetes or prediabetes.

In a 2015 New Jersey tax case, the court refused to recognize the hospital named in the suit as a tax-exempt nonprofit institution. The judge ruled that the hospital was using nonprofit status as a "legal fiction" and meanwhile paying exorbitant salaries to the CEO and other executives.[11] The ruling affects only this hospital, but experts warn it could have implications for nonprofit hospitals everywhere.[12] There are reasons to be ambivalent about the New Jersey case. One could applaud the decision on the grounds that the hospital spent millions of dollars on executive salaries that could have been put towards community improvement, in line with the mission of a nonprofit institution. At the same time, the charitable care and other community benefits the institution was providing could well vanish altogether. Since it is no longer benefiting from tax-exempt status, it is under no obligation to continue to offer them. It also needs to conserve resources to pay the taxes it owes.

This was not the first time a nonprofit hospital's tax-exempt status has been questioned. In 2011, three hospitals in Illinois were denied tax-exempt status for failing to provide enough charity care, which was broadly defined to include community health improvement activities.[13] The hospitals were granted a reprieve when the state enacted legislation that required all nonprofit hospitals to provide charity care valued the same as or more than their annual estimated tax liability.

The ACA expanded the community benefits that hospitals are required to provide in order to maintain their nonprofit status. Although nonprofit hospitals have been required to meet community benefits requirements since the 1960s, historically most met their obligations by providing charity care to uninsured patients. Under the ACA, however, that group is shrinking. Nearly 17 million additional people have obtained health insurance since 2013, reducing the uninsured population to 11.5 percent of the U.S. population, the lowest

level on record.[14] If more states expand their Medicaid programs, the size of the uninsured population will continue to fall; therefore, we can expect hospitals to focus more attention on building community health. To ensure adequate nutrition, hospitals could be hosting on-site farmers markets, establishing feeding programs for children during the summer when they don't have access to school lunch and breakfast, or teaming up with partners such as Hunger Free Colorado as Kaiser Permanente in our example has done.[15]

Hospitals are required to conduct a Community Health Needs Assessment (CHNA) every three years with input from key stakeholders and then develop programs to meet the identified needs. Stakeholders should be aware that the law allows them to participate in the CHNAs. Hospitals have significant discretion as to how they conduct CHNAs, set priorities among needs, and develop implementation plans. All of this must be done transparently, so the community can hold the institutions accountable. Under the regulations, "needs identified through CHNA may, for example, include the need to prevent illness, *to ensure adequate nutrition*, or to address social, behavioral, and environmental factors that influence health in the community."[16]

The ACA also requires hospitals to reduce readmission rates for Medicare patients. In 2015, for the fourth year in a row, the majority of hospitals faced reductions in Medicare payments for failing to meet their readmission benchmarks.[17] An international study observed that hospital patients who are malnourished are nearly twice as likely to be readmitted within 15 days of their discharge as patients not malnourished.[18] Hospitals can take steps to ensure patients are nourished properly during their stay, but they have little control over what foods people are eating once they return home or over whether there is enough food at home. One study of a large hospital in Detroit found that patients living in high-poverty neighborhoods were 24 percent more likely than others to be readmitted.[19] Presumably high food insecurity rates are a co-occurring condition in these neighborhoods.

One way for hospitals to reduce readmission rates is by partnering with organizations like Meals on Wheels America that provide home-delivered meals to food-insecure seniors.

Clearly there are concrete reasons for hospitals to be concerned about adequate nutrition in the communities they serve, and everyone agrees that preventive healthcare is highly cost effective. But this is a new way of doing business for everyone in health care, and payment models need to be adapted. The status quo is to pay for the volume of services provided, not the value of the care for the money spent.[20] "I'm not sure we know exactly what that payment system will look like," explains Ashley Thompson, Vice President and Deputy Director of Policy at the American Hospital Association. "The first step of moving from paying for volume to paying for value is good ... but we haven't determined what the most effective payment system is to result in a paradigm shift."[21]

Box 2.1

ESKENAZI HEALTH CARES ABOUT NUTRITION

Eskenazi Health in Indiana is one of the largest safety-net health systems in the country. Its facilities include a 315-bed hospital in downtown Indianapolis and outpatient services at 11 health centers across Marion County, the state's most populous county with nearly a million people.

Courtesy of Eskenazi Health

Lisa Harris, CEO of Eskenazi Health, leads a health system that is committed to addressing the social determinants of health.

Safety-net health systems are those that primarily serve low-income patients, those insured by Medicare and Medicaid, and people without health insurance. For Dr. Lisa Harris, CEO of Eskenazi Health, health care reform means that the rest of the country's hospitals are catching up with Eskenazi and how it has operated all along. "We've always had to think about how to use our resources most efficiently," Harris says. "Our statutory mandate has been to care for all, regardless of their ability to pay. The challenges of providing as much care as we can to people who can't pay forces us to align incentives with keeping costs low and promoting community health."

Recently, Eskenazi Health launched a pilot program with the local affiliate of Meal on Wheels America (MOWA). Patients discharged from the hospital are enrolled with MOWA for 30 days and provided with medically tailored meals prepared in the hospital cafeteria. The hospital covers the costs of the meals that MOWA delivers. If the program helps reduce readmission rates, it will soon pay for itself. "Cardiac patients, who have high readmission rates, require a lower-sodium diet," says Harris. "If we can put someone on a low sodium diet for just two weeks, that's all it takes to change their taste buds."

Safety-net health systems are those that primarily serve low-income patients, those insured by Medicare and Medicaid, and people without health insurance.

The MOWA volunteers who deliver the food are trained to work with patients to improve their understanding of the connections between nutrition and health. "When patients are leaving the hospitals, they're bombarded with so much information," says Harris. "Take this medicine—don't eat this kind of food. All that patient is probably

thinking is, if this lady doesn't stop speaking, my son who's here to pick me up is going to be late for work and could lose his job."

The MOWA program is one example of how Eskenazi Health works with local partners to promote community health. Another is a food pantry at Eskenazi Health Center Pecar, which is located in one of the most disadvantaged sections of Indianapolis. It is a food desert that is home to a large concentration of immigrant families. The pantry is housed at the health center and staffed by members of nearby St. Luke's United Methodist Church. Most of the food is provided by Gleaners, the area food bank. The largest funder is Dow AgroSciences, whose global headquarters is located in the county.

Courtesy of Eskenazi Health

Eskenazi Health Center Pecar, located in a food desert, runs an onsite food pantry for patients and others in the community.

Dawn Haut, chief physician at the clinic, says the pantry has made it so much easier for her to ask patients whether they have enough food at home. Every patient who comes to the clinic completes an electronic screening, and one of the questions is about their household food security situation. When they screen positive for food insecurity, Haut or another physician attending the patient receives a prompt. Before the pantry opened, Haut explains, she had reservations about asking patients about food insecurity, mainly because she didn't have anything in her tool kit to offer them.

Patients who report that they are food insecure during the electronic screening frequently deny they answered the question that way when she raises the issue with them face to face. "I say, well, if you know of someone in your neighborhood who could use help, let them know we have a pantry here at the clinic and they don't have to pay." Most of the time, she says, by the end of the appointment, the patient asks to be reminded of what hours she said the pantry was open.

The ACA is testing new value-based payment models in Medicare and Medicaid, for example, by paying a health system a lump sum for all the health care given to a particular patient over a given period. Under this model, the system determines the right balance of clinical-based care and community-based services. Whatever the accumulating data show to be working best, it will be Medicare and Medicaid, which together insure nearly a third of the population, showing the way forward.

Aligning With a Common Nutrition Agenda

Food insecurity in the United States should never be anything more than a short-term hardship caused by income shocks such as a job loss or health crisis. That description might fit in an era of plentiful jobs, fair wages, and reasonable out-of-pocket health costs. But many people struggling to put food on the table have jobs. The problem is that the jobs don't pay a living wage. And employers may offer health insurance, but the premiums would consume a whole paycheck.


Joseph Molieri/Bread for the World

Volunteers at food pantries, often times former clients themselves, are frontline healthcare workers in underserved communities.

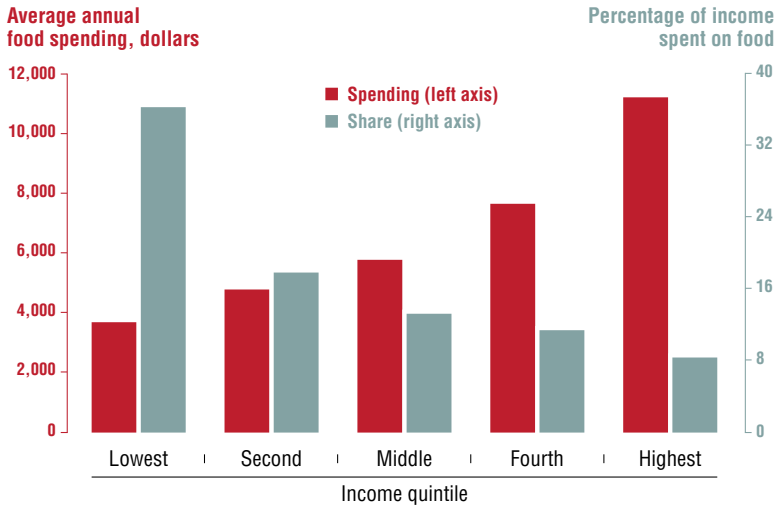
In recent years, the United States has had more than 45 million food-insecure people; the figure has been at least 30 million every year of the twenty-first century. The numbers tell us that for many people, food insecurity is not a temporary hardship—and it is not an individual problem. Given what we know about the effects on health of not getting enough nutritious food, it's time to talk about food insecurity as a public health problem as well.

Obesity is recognized as a public health problem. The federal nutrition programs and local emergency food systems led by food banks are both indispensable in helping low-income families overcome food insecurity and obesity. Researchers at USDA who completed a study based on interviews with SNAP households report, "Families at all levels of food security told us that SNAP allowed them to purchase more food, and more healthy food than they would otherwise be able to afford."[22] SNAP makes healthy foods more affordable, but they are not affordable all the time. "Despite numerous cost-cutting strategies, most families find that they must maintain a repetitive diet of lesser quality to keep their family fed throughout the month."[23] Parents said that they shopped differently in the first weeks of the month, just after SNAP benefits had been issued, than toward the end, when they had been used up.

It is possible to stretch SNAP dollars a few days longer if you know how to do it. The nonprofit organization Share Our Strength sponsors Cooking Matters®, the largest nutrition education program working to reduce food insecurity. Cooking Matters® is a six-week course

that teaches low-income adults, children, and entire families how to shop on a tight budget and how to plan and prepare healthy meals and snacks. In 2013, nearly 50,000 people in 44 states participated in the program.[24] Altarum Institute, a health systems research organization, evaluated the program and found that it does improve food security and leads to what would appear to be sustainable improvements in dietary quality.[25] Cooking Matters® is part of Share Our Strength's No Kid Hungry Campaign, one of the most popular and successful privately funded anti-hunger campaigns ever. For all its success in raising awareness about child hunger, attracting corporate donors, enlisting celebrities to spread the word, and raising money, the No Kid Hungry Campaign continues to wage battle against a seemingly inexhaustible foe. A greater proportion of children in the United States are hungry than in any other high-income country.

Figure 2.2 **Food Spending and Share of Income Spent on Food Across U.S. Households, 2013**



Source: USDA, Economic Research Service using data from U.S. Bureau of Labor Statistics, Consumer Expenditure Survey, 2013.

In 2013, the Institute of Medicine issued a report critical of the formula used to calculate the size of SNAP benefits.[26] The program provides an average benefit per person per day of approximately $4.00.[27] In 2011, USDA estimated the cost of a day's worth of healthy food to be no less than $6.65.[28] We do not encourage patients to take less than the prescribed dose of their medication—similarly, we should not be cavalier about the nutrition and health of SNAP families. The American Recovery and Reinvestment Act of 2009 (ARRA), the national stimulus package designed to counter the Great Recession, raised SNAP benefits by an average of 15 percent, or what amounted to an additional 50 cents per day. USDA found that food security improved among households that received the additional SNAP benefits, while food security deteriorated among households just over the SNAP income threshold.[29] Nevertheless, Congress decided in November 2013 to let SNAP benefits revert to their pre-ARRA levels.

The cost of food and the money families have available to spend on it are crucial factors that influence food choices. See Figure 2.2. There is little evidence that simply opening grocery stores in low-income communities changes food purchasing and consumption patterns.[30] According to a recent study of more than 100,000 households in multiple markets across the United States, richer and better-educated consumers buy healthier foods. The study controlled for proximity of grocery stores and transportation barriers such as not having a car. Food insecurity rates on average are 10 times higher in households with an adult who has not completed high school than in households with an adult who has a college

education.[31] That is not surprising since education levels are a reliable predictor of household income, and therefore of how much a family is able to spend on food.

In a national survey of food banks published by Feeding America in 2014, more than half of client households were also receiving SNAP. More than three out of four were buying inexpensive, unhealthy foods to make ends meet. Nearly two-thirds had to choose between paying for food or paying for medicine in the past year.[32] The Feeding America network is extensive. The organization estimates that its network serves at least 17 percent of diabetics in the United States, and 13 percent of people with high blood pressure.[33]

Figure 2.3 **Total Fruit Consumption: Estimated Percent of Persons Below, at, or Above Recommendation**

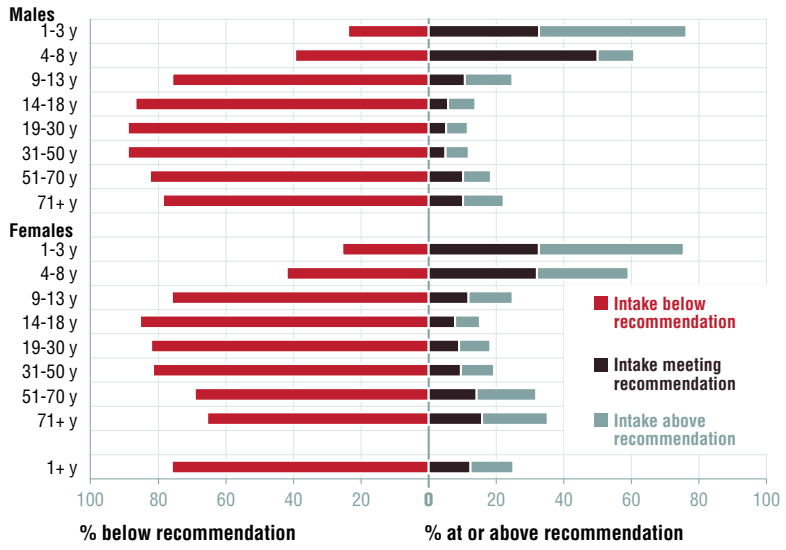
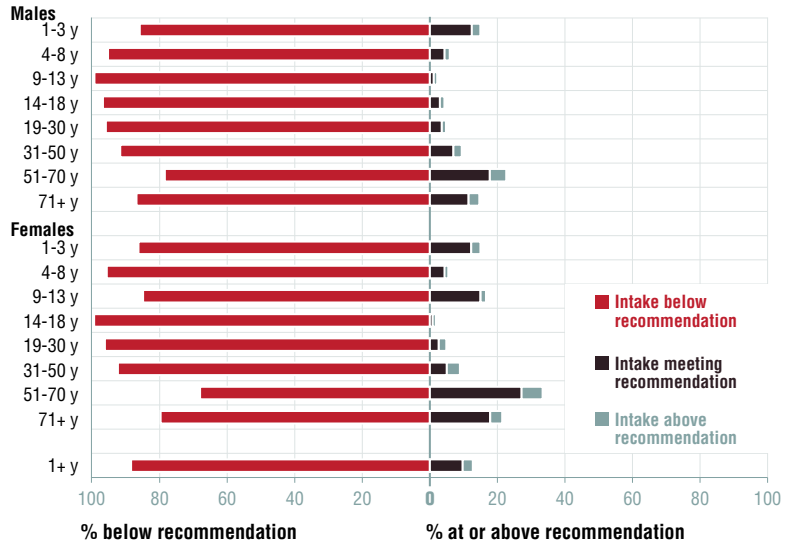


Figure 2.4 **Total Vegetables: Estimated Percent of Persons Below, at, or Above Recommendation**



Source: What We Eat in America, NHANES 2007-2010.

Food banks have been concerned about the nutritional quality of the foods they provide for some time. In 2004, the Food Bank of New York City became the first food bank in the nation to adopt nutrition standards, no longer accepting donations of soda or candy. Other food banks have established similar criteria, but a 2011 survey by the University of California-Berkley showed that only 20 percent were fully implementing their standards.[34] The fact is that food banks have limited control over the dietary quality of the foods they provide to clients. Healthier options such as fresh fruits and vegetables, lean meats, low-fat dairy, and cereals are more difficult to procure. Two-thirds of the food is donated, most by food retailers and manufacturers. Foods purchased independently make up just 14 percent of what the Feeding America network offers.[35] The remaining 20 percent comes from USDA and must meet nutritional guidelines.

The *Dietary Guidelines for Americans* serves as a blueprint for what constitutes a healthy diet. The U.S. population as a whole is doing poorly in meeting the guidelines. See Figures 2.3 and 2.4. Developed by experts in health and nutrition science, the *Dietary Guidelines* are a launching off point for anti-hunger organizations to engage with the health care sector. Feeding America set a goal of having 75 percent of the food distributed through its network aligned with the *Dietary Guidelines* by 2025.[36] WIC food packages and the school meal programs are already aligned with the guidelines. SNAP succeeds in improving health despite its inadequate "dosage" or benefit levels, but as mentioned earlier, it is a challenge for SNAP families to get enough healthy food.

In the USDA interviews with SNAP families, when parents were asked what they believe constituted a healthy diet, they almost always cited fruits and vegetables as the key.[37] Fresh fruits and vegetables are the most sought-after items that food bank clients report they are not receiving.[38] Fruits and vegetables are staples of a healthy diet, and increasing their consumption is a recommendation of the *Dietary Guidelines*.[39] Later in the chapter we explore ways for healthcare providers to take advantage of new opportunities to promote fruit and vegetable consumption as a component of treating chronic diseases.

USDA Photo by Lance Cheung

A customer at a farmers market exchanges tokens to pay for some of her purchases funded by the Supplemental Nutrition Assistance Program (SNAP).

Box 2.2

MCKENNA'S WAGON AT MARTHA'S TABLE

by Caron Gremont, Martha's Table

For over 35 years, Martha's Table has been feeding the hungry and homeless in and around the District of Columbia. Like many other regional and national organizations dedicated to the fight against hunger, the focus has been on getting food—any food—to those in need, but not necessarily the best or right food.

Martha's Table believes that everyone—regardless of income level—deserves a healthy life. While 55 percent of DC residents are overweight or obese, and with diabetes rates at 8 to 15 percent across the city, the problem is even more acute in low-income communities. In many cases, the population that Martha's Table serves is disproportionally overweight or obese and diabetic. We believe we have a responsibility to provide food that supports the efforts of our community to lead a healthy life.

Courtesy of Martha's Table

McKenna's Wagon is named after one of the founders of Martha's Table, Father Horace McKenna.

In addition to running free pop-up healthy grocery markets in elementary schools across DC, Martha's Table operates McKenna's Wagon, a mobile food truck that rolls out 7 days a week, 365 days a year to feed the homeless and hungry at three established downtown locations.

Each evening, McKenna's Wagon feeds 300 of the city's most vulnerable men and women, with a hot, one-pot meal, sandwiches, dessert, and a drink. The one-pot meal, made on-site at Martha's Table, consists of fresh vegetables, rice, and meat or beans. For many years, we have depended on contributions from local grocery stores, which consisted of, among other items, sheet cakes, cookies and pies just past their sell-by dates for dessert on the Wagon. Each afternoon, a crew of volunteers would come to Martha's Table to help us place these desserts on single serving plates and wrap them in plastic wrap to go out on the van in the evening. These desserts would often include pink and red heart-shaped cookies days after Valentine's Day, or standard "Happy Birthday" sheet cakes that just didn't sell.

Earlier this year, we at Martha's Table decided to make a significant change. Instead of depending on donated sweets, we decided we would bake homemade muffins in-house and send those out on the Wagon for dessert each evening. Before we made this change, we tested out some muffin recipes and asked our clients for feedback. We started with slightly sweeter muffins and, over time, decreased the sugar content. The muffins—which vary from oat banana to blueberry to chocolate chip—are all made with whole-wheat flour. The same volunteers who showed up daily to package the grocery store sweets now help with muffin baking. And, each evening, fresh (and sometimes warm!) muffins go out to hundreds of men and women in DC as part of their meal. In addition to supporting health, freshly made muffins make the men and women we serve feel valued and important because we care enough about them to bake, from scratch, healthy treats. This is a positive step towards healthier living for the community we work with in Washington, DC.

Caron Gremont is the Senior Director of Healthy Eating at Martha's Table In Washington, DC.

Weighing the Harm in the U.S. Food System

In a survey conducted by National Public Radio, the Robert Wood Johnson Foundation, and Harvard's T.H. Chan School of Public Health, people were asked to choose five things from a list of 16 they thought would improve their health a great deal. Fifty-seven percent chose improving access to healthy food—a higher percentage than any other single item, including increasing access to high-quality health care (52 percent) and improving the economy and the availability of jobs (49 percent).[40]

What is behind Americans' poor diets? One factor is that families spend less time cooking and eating at home. At the same time, the portion sizes of foods eaten away from home have increased.[41] Americans work longer hours than people in every one of our peer countries.[42] From 1979–2007, married women in middle-income families increased the number of hours they worked annually by 58.5 percent—the equivalent of an additional three months of full-time work.[43] Because men's wages declined in real value over the same period, many married women had to work longer hours to maintain their family's foothold in the middle class. The percentage of mothers with children under age 18 who were in the workforce increased by 14 percent, mothers with children under age 6 by 19 percent, and mothers with infants by 25 percent over this period.[44]


USDA photo by Lance Cheung

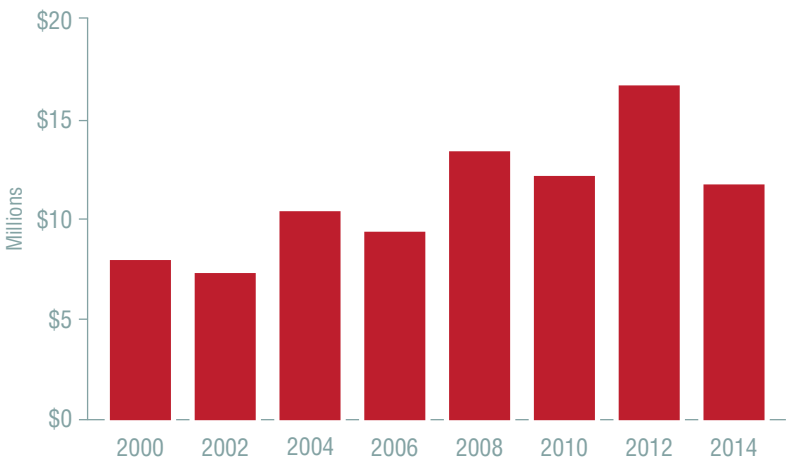
U.S. farm programs have paid more subsidies to raise corn than any other crop. Meanwhile, high-fructose corn syrup has been linked to the dramatic rise in obesity among American adults and children.

Another factor is the way the U.S. food system is set up. Our farmers are very productive: between the early 1980s and 2000, the number of calories available per person per day increased from about 3,300 to 3,900.[45] The problem is that the additional calories came predominantly from added fats and sugars. Since the first *Dietary Guidelines for Americans* were issued in 1980, per capita consumption of fruits and vegetables has barely changed. Soaring obesity rates are the most glaring sign that something is out of balance. Between 1980 and 2000, obesity rates doubled among adults and tripled among children.[46] These increases coincided with the changes in the food supply.

In 2012, the average American consumed more than 20 teaspoons of sugar per day. That is almost double the USDA recommended allowance, and more than double and triple the American Heart Association's recommended amounts for men and women respectively.[47] A 2014 report by the Environmental Working Group analyzed 80,000 food products sold in supermarkets around the nation and found that 58 percent had added sugar. This included at least 75 percent of deli meats, just one class of products consumers might be surprised to learn have been sweetened.[48]

Beverages are the biggest source of added sugar in the U.S. diet, and the linkage between obesity and overconsumption of sugar-sweetened beverages is scientifically proven.[49] The 10 largest food and beverage companies spend billions of dollars each year to convince Americans to consume more sugar, with soft drinks and other sugar-sweetened beverages leading the way.[50] Research shows that children are innately more receptive to sweet tastes than adults.[51] The food industry spends more than $1 billion annually on youth-directed advertising. Soft drinks, cereals, candy, and sugary snacks account for the largest share.[52]

Figure 2.5 **Campaign Contributions to Congress from the Food and Beverage Industry**



Source: Center for Responsive Politics

The Institute of Medicine (IOM) has criticized marketing practices directed at children and youth. A 2006 report concluded that "food and beverage marketing practices geared to children and youth are out of balance with healthful diets, and contribute to an environment that puts their health at risk."[53]

Policy responses to obesity thus far have predominantly emphasized education and personal responsibility, making people aware of the health consequences and encouraging them to adjust their lifestyle and be more mindful of what they consume. "The food industry supports this conceptualization with considerable resources," says Kelly Brownell, dean of Duke University's Sanford School of Public Policy, "to train the spotlight away from the parties producing, marketing, and selling food to those consuming it."[54]

In 2003, U.S. sugar producers threatened to pressure Congress to withhold $406 million in U.S. contributions to the World Health Organization (WHO) after WHO issued a report advocating that people limit their intake of products with added sugars.[55] The food and beverage industry is a generous contributor to members of Congress. See Figure 2.5.[56] And it spends millions more on lobbying. In 2014, the industry spent a total of $32.2 million on lobbying, with Coca-Cola and Pepsi leading all individual contributors.[57] We can say without reservation that Congress may have been too good a friend to the industry. The Personal Responsibility in Food Consumption Act, also known as the "Cheeseburger Bill," was a bill in Congress designed to ban lawsuits against the fast-food industry. The bill passed in the House of Representatives in 2005 before it failed in the Senate. Since then, versions of it have been adopted in more than 20 states.[58]

The American Beverage Association, a lobbying group for the soft drink industry, has been remarkably successful in defeating proposed taxes on soda and other sugar-sweetened beverages, maintaining that the taxes infringe on people's freedom of choice. In 2009, the

association spent $19 million lobbying to defeat a proposed soda tax in the ACA that would have helped fund the fight against obesity.[59]

Public health groups are frustrated, which is why SNAP has become entangled in policy debates about how to address the nation's obesity epidemic. In 2013, a letter to the Secretary of Agriculture signed by dozens of public health groups proposed allowing states to conduct pilot projects to collect the data "needed to make an informed decision concerning ways to improve the nutritional quality of purchases through the SNAP program."[60] States cannot regulate what SNAP recipients purchase without a waiver from USDA. State and local policymakers from several areas of the country have sought waivers to restrict purchases of soft drinks and other sugar-sweetened beverages with SNAP benefits.[61] USDA has rejected all of these.

Sean Madden for Bread for the World

The Personal Responsibility in Food Consumption Act of 2005, also called the "Cheeseburger Bill," was designed to ban lawsuits against the fast-food industry. It passed by a large majority in the House of Representation but failed in the Senate.

Regardless of how well intentioned they may be, the proposals to restrict SNAP purchases to fight obesity are misplaced. Studies show SNAP does not increase the risk of obesity.[62] Obesity develops over years. Although some households have to rely on SNAP for years at a time, USDA reports that half of all new SNAP recipients leave the program within 10 months.[63] USDA found SNAP recipients no more likely to consume sugar-sweetened beverages than eligible nonparticipants.[64] Because SNAP benefits are intended to cover only a portion of food purchases, anyone who wanted restricted beverages could purchase them with their own money. Finally, restrictions could end up doing more harm than good by increasing the stigma associated with the program.

A tax on all consumer purchases of sugar-sweetened beverages would address the obesity epidemic more equitably and have a much better chance of achieving lasting impact. Taxes on other products, such as alcohol and tobacco, are used to promote public health goals. In 2011, Brownell and colleagues at the Rudd Center for Food Policy and Obesity reported that a nationwide tax of one penny per ounce on all sugar-sweetened beverages would generate $80 billion nationally over five years.[65]

In 2013, Mexico surpassed the United States as the most obese nation in the world. On January 1, 2014, the country imposed a 10-percent tax on sugar-sweetened beverages that affected all consumers. The Mexican National Institute of Public Health and the University of North Carolina reported that the tax led to a 6 percent reduction in consumption for 2014 as a whole, and the reduction was as much as 12 percent by the later months of the year.[66]

The food and beverage industry is a powerful lobby, but so is health care. By 2013, the healthcare sector was the dominant source of employment in 35 states. Hospitals are the

Box 2.3

FAITH, FOOD, AND COMMUNITY BUILDING ACROSS THE RACIAL DIVIDE IN THE RURAL SOUTH

Macon County, Alabama, is located within the rural southern Black Belt, a region of the country that suffers disproportionately from persistent poverty, poor health, structural racism, and chronic food insecurity.

In 2015, the Robert Wood Johnson Foundation released county health rankings for every state in the country. Of the 67 counties in Alabama, Macon was ranked third from the bottom on a Food Environment Index, based on the food insecurity rate (26 percent) and the share of the population with limited access to healthy foods (19 percent).[67]

The Macon County Ministers Council reached out to the agricultural department at Tuskegee University, asking for help in using available land to improve the local food system.

The Black Belt is predominantly African American, the main reason for its name. The Black Belt is also a reference to the original places of black slavery from Africa. At one time it was also named for the rich, dark soil, and the black workers who cared for the land and made it possible for Alabama to have a profitable agricultural sector. The soil is still there and so are the descendants of that time, but many have left the rural areas for the urban way of life thereby leaving the land behind. This has had consequences for the people and the land.

"It was amazing to me how much we had gotten away from that history," says Rev. Otis Head, pastor of Mount Calvary Missionary Christian Church in Macon County. "All this land and good soil that we have and aren't doing anything with. Our community has food, but so little of it is healthy." Rev. Head moved to Macon County in 2006. His parents had attended Tuskegee University in Macon County, and as a child he visited here many times, remembering the pride his parents' generation had in its agricultural legacy.

The agricultural department at Tuskegee was headed originally by none other than George Washington Carver, who was offered the position by its founder and first president, Booker T. Washington. Carver was already famous for his contributions to agricultural science, and Washington wanted Carver because agriculture was central to his philosophy of black self-sufficiency.

Founded in 1881, Tuskegee is one of the country's first Historically Black Colleges and Universities (HBCUs). HBCUs have their roots in the black church, and the close association continues to this day. Rev. Head and others on the Macon County Ministers Council reached out to the agricultural department at the university, asking for help in using available land to improve the local food system. They

started with community gardens on church properties. The foods grown there are distributed through a pantry run by the council, and they are available to the entire community. "It has made a difference," says Rev. Head. "People tell me they feel better, and I can see it myself."

The black church is the key stakeholder when it comes to matters of community health and building trust and bridges between the African American community and the health profession, particularly in rural communities. It is not uncommon, for example, for clergy in Macon County to take calls from families asking for help because they have run out of food. When someone in the family is sick, it may require a minister to persuade the person to see a doctor given the history of racial discrimination in health care which, in great part, explains why some African American communities are wary of doctors.[68] This kind of leadership by African American churches can help the community to overcome the history of racial discrimination in health care.

"The past isn't dead and buried. In fact, it isn't even past," said candidate Barack Obama, in a 2008 speech about race relations.[69] The ACA, better known as Obamacare, will have only limited success in places like Macon County without support from the church leaders. The church will lead the community building as it always has, because the church has the trust of local residents that other structures often do not. This may be true in other parts of the country as well, but it is especially true in the rural Black Belt.


Wylin Wilson

Rev. K. G. Jones, pastor at the Bethel Missionary Baptist Church in Tuskegee, Alabama tends to the community garden on the grounds of the church.

second largest employer in the private sector, supporting one in every nine jobs in the United States;[70] and, in 2013, hospitals spent more than $782 billion on goods and services from other businesses.[71]

Some of the revenue from a tax on sugar-sweetened beverages in the United States could be used to provide incentives to SNAP participants to purchase healthy foods. Incentives, although not widely tested in SNAP, have been shown to work. In 2011 and 2012, USDA conducted an experiment in Hampden County, Massachusetts, the Healthy Incentives Pilot, providing a randomly assigned group of SNAP recipients with an additional 30 cents for each dollar of SNAP benefits spent on fruits and vegetables. Compared to a control group, SNAP participants in the incentive program spent an additional 11 percent on fruits and vegetables. Three-quarters of the households receiving the benefit reported that fruits and vegetables had become more affordable due to the incentive and were more inclined to purchase them in higher quantities.[72] The evaluation team estimated that the total cost of implementing a similar incentive program nationwide would range from $825 million to $4.5 billion a year.[73]

Food System Reform Meets Healthcare Reform

One of the fastest growing trends in U.S. agriculture in the twenty-first century has been the rapid growth in demand for food produced in ways that are perceived as supporting health and causing a softer environmental footprint than large-scale production agriculture. Despite supportive rhetoric from the Secretary of Agriculture, USDA has made only modest strides to catch up. U.S. agricultural policies remain geared to a small number of commodities and a small number of farmers who produce them, and the emphasis remains on calories at the expense of dietary diversity.[74]

U.S. farmers producing foods aligned with the recommendations of the *Dietary Guidelines for Americans* receive little or no support from U.S. farm programs.

In metropolitan areas, farmers markets have been multiplying yearly; farm-to-school programs cannot keep up with the school districts that want one of their own; and consumer demand is skyrocketing for foods grown locally by farmers perceived to be operating sustainably. Consumers don't have to shop at farmers markets—grocery stores sell plenty of the fruits, vegetables, and other products available at the farmers markets. What farmers markets offer that supermarkets do not is direct contact with the people who produce the foods that consumers want. The markets have become a popular venue for community engagement on health and nutrition. This didn't happen overnight, but the momentum now is truly breathtaking. At one time, farmers markets were asso-

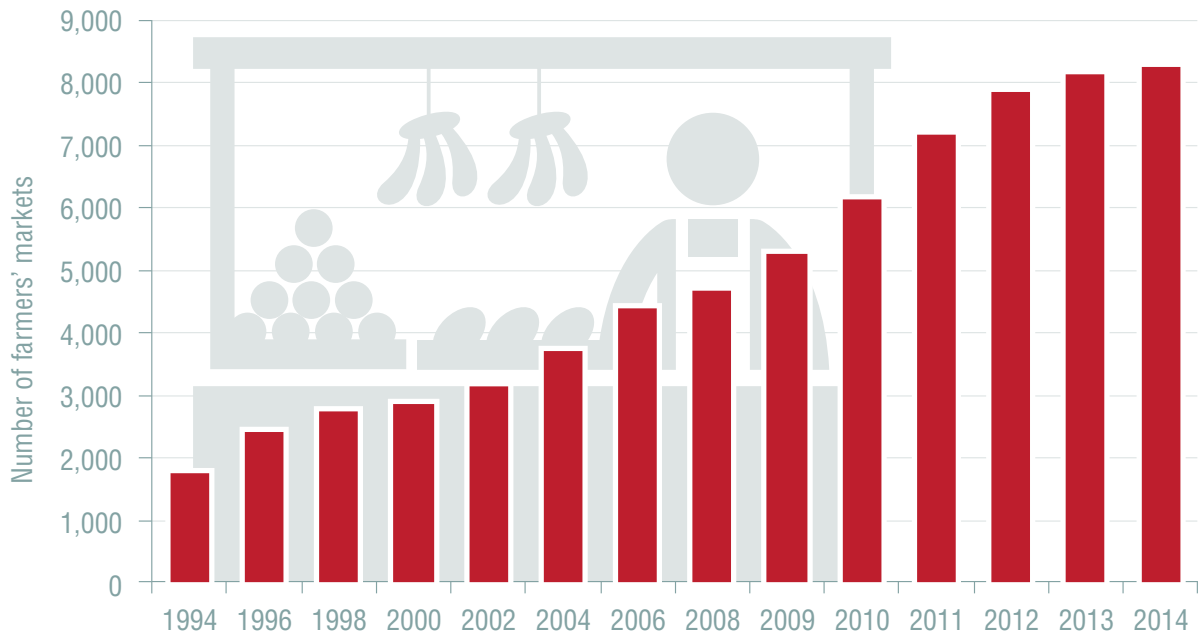
USDA Photos by Lance Cheung

ciated with a countercultural food movement. That has changed as interest in local food production has gone mainstream.

Farmers markets started popping up in metropolitan areas in the 1970s. Most markets were in upscale neighborhoods and not easily accessible to the average SNAP participant (back then, SNAP was known as the Food Stamp Program). Between 1994 and 2014, the number of farmers markets increased fivefold. By 2014, there were 8,268.[75] See Figure 2.6. The explosive growth of the last decade has helped low-income people overcome access barriers, but it has not eliminated them. Until recently, for example, farmers markets were not equipped to accept the debit card that people on SNAP use to access their benefits. In 2009, there were 900 markets where people could make purchases with SNAP benefits. By 2012, that number had increased to 5,900,[76] and USDA now provides wireless technology to vendors at no cost so that they can accept the SNAP card.

In 2014, Congress passed a farm bill that included $100 million in grants over four years to create incentives for SNAP participants to purchase healthy foods at farmers markets. The Food Insecurity Nutrition Incentive program (FINI) allows SNAP recipients to double their purchasing power when they use their benefits on fruits and vegetables. FINI did not come out of nowhere. Wholesome Wave, a private organization, working closely with Fair Food Network and other national partners, handed Congress the proof of concept after years of success with its Double Value Coupon Program. Households could use up to $10 in SNAP benefits each month at participating farmers markets—matched dollar for dollar by Wholesome Wave.

Figure 2.6 **U.S. Farmers' Markets, 1994-2014**



Source: USDA-AMS 2014; USDA AMS Marketing Services Division Farmers market information is voluntary and self-reported to USDA-AMS

Gus Schumacher, co-founder of Wholesome Wave, and Marydale DeBor, founder and managing director of Fresh Advantage, whose work includes helping hospitals improve the quality of food they serve, were instrumental in getting the words "ensure adequate nutrition" included in the IRS regulations specifying how nonprofit hospitals could meet their community benefit requirements. Schumacher and DeBor formed a broad coalition—including the National Farmers Union, individual farmers and farmers market organizations, and the Harvard Law School Center for Health Law and Policy Innovation, to name a few. Members filed public comments as part of the IRS rulemaking process that implemented the legislative language of the ACA. Of all the comments the IRS received, about a third came from this advocacy coalition. They contained compelling arguments and detailed descriptions of the ways in which nonprofit hospitals could address "diet deficits" at the community level. For example, hospitals could form partnerships with and provide in-kind support to community-based organizations focused on neighborhoods of need, organizations such as food banks, pantries, and kitchen programs. Or they could build infrastructure to strengthen local and regional food systems in partnership with organizations such as Wholesome Wave and Fresh Advantage. The advocates' efforts paid off: the IRS Final Rule states that significant health needs in the community are not limited to access to clinical service but also can include social determinants, specifically consideration of food insecurity, hunger, and poor diet that are root causes of chronic disease and obesity.


Joseph Molieri/Bread for the World

Fruit and vegetable incentives funded through the federal nutrition and health-care programs create markets for small to medium-size farmers and strengthen local food systems.

In 2010, Wholesome Wave piloted its first fruit and vegetable prescription program (FVRx®), targeting pediatric patients ages 2 to 18 who had been diagnosed as overweight or obese. The program is growing in leaps and bounds each year. Wholesome Wave developed FVRx® in response to requests from doctors who were familiar with the Double Value Coupon Program and wanted to do something similar for their own low-income patients who could not afford the types of food that were healthiest for them. Patients are enrolled in FVRx® for four to six months, during which they set healthy eating goals, receive nutrition education, and meet monthly with their primary care provider. See Figure 2.7. The prescription is for $1 per day per person in the household. At the farmers market, people go to the information booth and exchange the prescription for tokens, which can be used at any of the vendors to purchase fruits and vegetables.

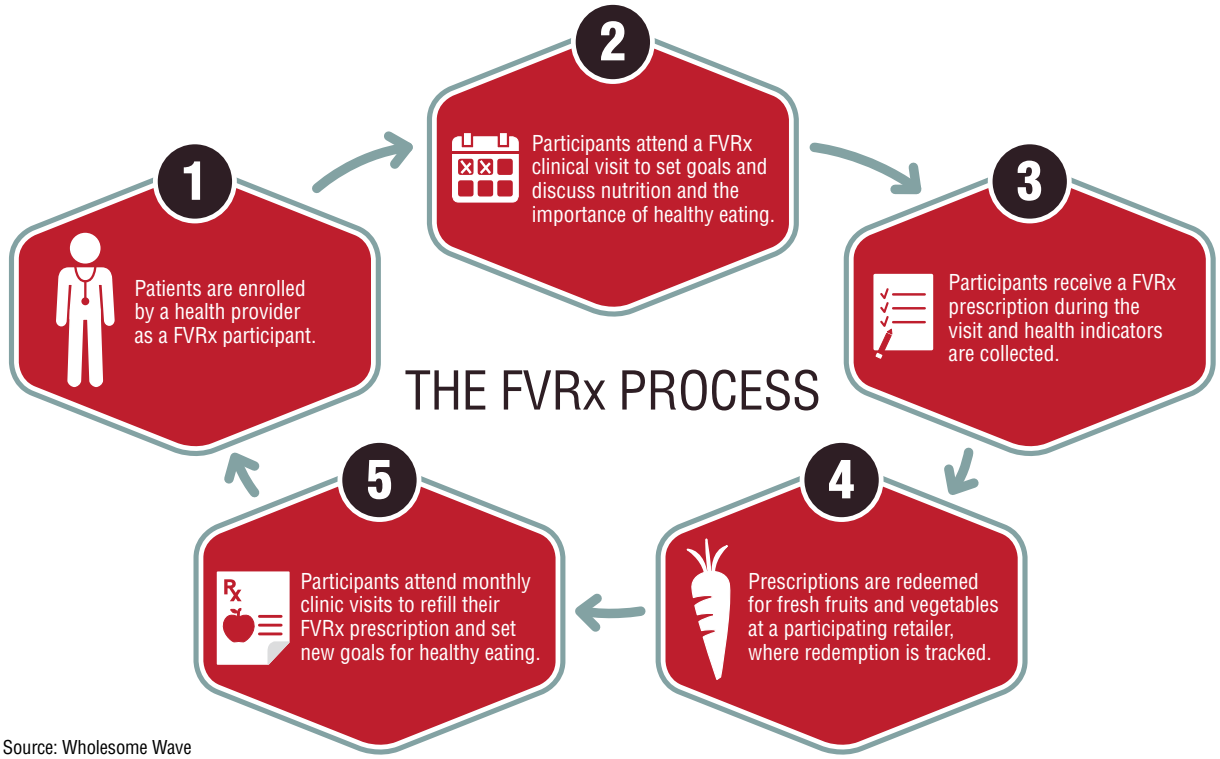
"Demonstrate it and then institutionalize it," says Schumacher. "We've done it in SNAP, and now we want to do the same with fruit and vegetable prescriptions, including for families

in Medicaid." In Medicaid, states can use waivers to test innovative approaches of delivering health care, just as they can in SNAP. The main condition for getting a waiver is that the demonstration project must be budget neutral.

New York applied for and received a waiver to test FVRx® with Medicaid patients. Two hospitals in the New York City Health and Hospitals Corporation (HHC), the largest municipal healthcare system in the United States,[77] participated in an FVRx® program in 2013. They were Harlem Hospital Center, a 272-bed teaching hospital that serves an estimated 5,000 overweight or obese children every year, and Lincoln Medical and Mental Health Center, a 347-bed teaching hospital that provides health care to people who live in the South Bronx and in parts of Upper Manhattan. An estimated 30 to 40 percent of the community's residents are overweight or obese. The two hospitals enrolled 116 patients, with 551 family members also sharing in prescription benefits. The average age of the patients was 9. In its first year, FVRx® helped 40 percent of the children lower their Body Mass Index, and more than half of the families reported having more food to eat at home.[78]

At the end of 2014, Dr. Ramanathan Raju, HHC's president and CEO, explained to his board of directors: "I think we've learned that sometimes a prescription for fresh food can be even better than a prescription for medicine. And when doctors do more than just ask patients to eat more fruits and vegetables–when they take concrete steps to make it easier for patients and go out of their way to demonstrate the benefits–patients really listen."[79]

Figure 2.7 **The Fruit and Vegetable Prescription® (FVRx®) Program: How Does It Work?**



Source: Wholesome Wave

Box 2.4

SUSTAINABLE WILLIAMSON, WEST VIRGINIA—WHERE MESSAGING MATTERS

"We're saying let's get healthy together," explains Darren McCormick, the mayor of Williamson, the largest town in Mingo County, West Virginia, and the epicenter of an outstanding effort to transform the self-image of a community—from poor health and persistent poverty to good health and a sustainable future.[80]

Mingo County is located in the heart of Central Appalachian coal country. At first blush, it would seem to be the most unlikely of places to be described by the word "sustainable." Mingo County is one of the poorest, unhealthiest counties in West Virginia. The early death rate is one of the highest in the nation. Almost 40 percent of adults are obese, and the child obesity rate is not much better. One in three of fifth graders have been diagnosed with high blood pressure.[81]

Fifty years ago, Mingo County, by virtue of its location in Central Appalachia, was one of the proving grounds in the War on Poverty. Politicians from Washington, DC, came to the region and said, "We're going to end poverty in Appalachia." But poverty wasn't ended here, and many people who live in the region feel they've been stigmatized as losers ever since.

It's a mindset that McCormick says he shares. And yet he's thankful for the support provided by federal programs such as SNAP and WIC. In the early 1960s, there was rampant hunger and severe malnutrition in the region, and the social programs created to address those hardships did erase them for the most part. But what the War on Poverty failed to do was to help diversify the economy to be less dependent on coal.

Geologists predict that it will be only another two to three decades before the county's coal reserves run out. Nearby McDowell County has already been totally mined out. Thus, sustainability is more than a rebranding campaign for Williamson. Community leaders recognize that if the place is not only going to survive, but also thrive, residents have to transform the way they see themselves. So the town's message is designed to give people hope. "Our mission statement isn't individual projects anymore," McCormick said. "Our project is creating a more sustainable way of life."[82] If it sounds like a long shot to some outsiders, you won't find many people in town without hope.

Community leaders recognize that if the place is not only going to survive, but also thrive, residents have to transform the way they see themselves.

One priority is stemming the diabetes epidemic. "Health, quality of life, and economic development issues are inseparable," says Dr. Christopher D. Beckett, who grew up in Williamson and goes by Dino to people around town.[83] Mingo County is located in what is sometimes called the nation's diabetes belt: 644 counties spanning 15 states.[84] See Figure 2.8. For the country to make progress against the rising costs of health care, it will have to develop innovative approaches to managing diabetes. In 2011, the Mingo County Diabetes Coalition was established with support from a federal grant to pilot such approaches and ultimately help reduce the cost of diabetes to the Medicaid and Medicare programs. The Centers for Disease Control and Prevention reports that if current trends continue, as many as 1 in 3 U.S. adults could have diabetes by 2030.[85] Places like Mingo County are today's proving ground to try to reverse those trends.

Beckett leads the Diabetes Coalition, which has patients participating in a comprehensive program that includes exercise, eating well, and proper use of medication. Patients who've gone through the program have experienced a drop in A1c hemoglobin levels by an average of 2.1 percent. A1c is associated with blood glucose levels; it is a critical indicator in managing a diabetic patient's condition. A 2.1 percent drop is huge, explains Beckett. "If you were a drug

manufacturer and you were able to drop [A1c levels] by just 0.6 percent, you would have a billion-dollar drug."[86] A 2.1 percent improvement translates into a 29 percent reduction in the risk of a heart attack, a 50 percent reduction in renal failure and need for dialysis, and a 90 percent reduction in the likelihood of amputation. The program's success explains why more people around town are starting to wear pedometers and mid-day walks have become popular among townsfolk of all ages.[87]

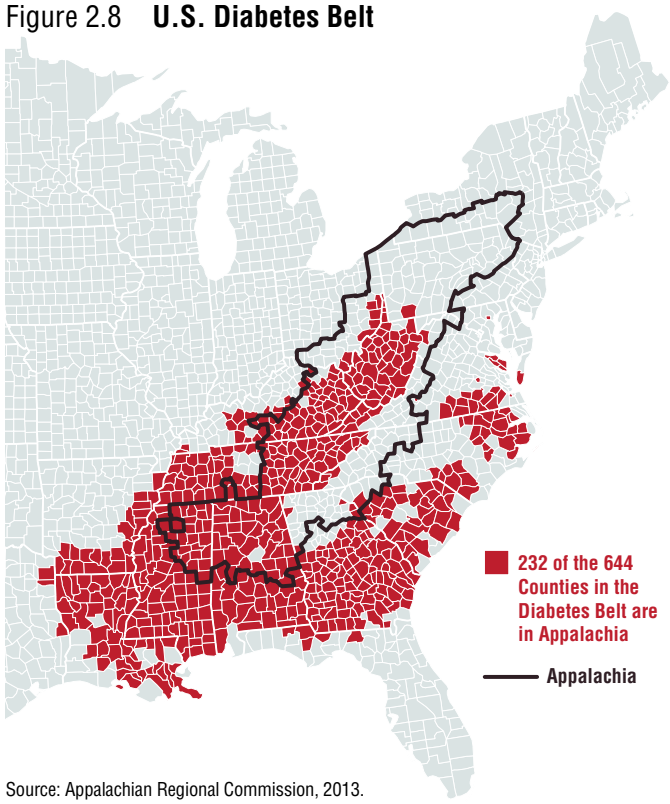
Beckett has gotten patients to eat healthier by prescribing (literally writing prescriptions for) a diet high in fruits and vegetables. The Mingo County Diabetes Coalition provides patients with vouchers to purchase the food. Much of that shopping is done at the Williamson farmers market since the town is a classic example of a rural food desert. The closest full service grocery store is more than 30 miles away. The farmers market, started in 2012, was designed not only to improve access to healthy foods but also to be part of an economic development strategy. During the planning phase, McCormack approached the USDA Extension office at West Virginia University in Charleston, a hundred miles north, and asked how many people in Mingo County were farming. "USDA told us nobody was farming here—because nobody had gone to the extension office for help. Well, anybody who lives here knows that wasn't true." McCormack dispatched a VISTA volunteer to go back into the hollows and survey how many people were growing food. The survey found that there were many more "farmers" than anyone had realized. The farmers market now provides a source of income for these local growers.

Healthy food is central to promoting the message of a sustainable future. Because of the market, and the new community gardens that have also been created, students at the middle school in Williamson—80 percent of them on free or reduced price meals—have asked their principal to create an agriculture program at the school.[88] An orchard has been built on an abandoned strip mine. A small-business incubator program is helping a local entrepreneur open a restaurant that will provide the first genuinely healthy menu in town. "If you had asked people where to go to eat, the only places they might know are McDonald's and Wendy's," says Beckett.

"It's one of the best grassroots efforts I have ever seen," said Tracey Rowan, area director of the U.S. Department of Agriculture. "At their meetings, the excitement is contagious. I've never seen anything like it. It's likely to succeed and likely to last, in great part because these people are committed to living and working there."[89]

Sustainable Williamson has captured the imagination of people in the community, and it has also captured the attention of people outside the community. In 2014, Williamson was one of six communities around the country to receive the Robert Wood Johnson Foundation Culture of Health Prize for Innovative Efforts to Improve Health.[90] "It is tempting to look at this area and think about everything that's wrong with it and get discouraged," says Beckett. "But there is also a different way of looking at it. Seeing these problems as opportunities."

Figure 2.8 **U.S. Diabetes Belt**



Source: Appalachian Regional Commission, 2013.

Wholesome Wave's goals for FVRx® are as big as they are bold: "Our ultimate goal is to develop a model that is scalable...with high-profile implications for national replication and positioning partners as leaders in innovative treatment models."[91] Another top priority is to build support for local agriculture so that it reaches a tipping point. Wholesome Wave is hoping the convergence of health care and food assistance in the ACA can give it that nudge. The catastrophic drought in California that made headlines in 2015 provided some of the best public relations yet for the importance of strengthening local agricultural systems. Ironically, it was a study from the University of California-Merced, using sophisticated farmland-mapping technology, which showed that up to 90 percent of Americans could be fed entirely by food grown or raised within 100 miles of their homes.[92]

"These results are very timely with respect to increasing interests by the public in community-supported agriculture, as well as improving efficiencies in the food-energy-water nexus," said Bruce Hamilton of the National Science Foundation.[93] As incomes rise, consumers are willing to pay for higher quality food produced locally by small to medium-sized farmers.[94] But the incomes of people most at risk of food insecurity are near or below the poverty line; their access to healthy foods must be supported through public policy.

School communities

Teachers really understand the difference good nutrition makes. A survey of the 2015 State Teachers of the Year asked the award winners to name the barriers they believe affect student's academic success. "Family stress" came out on top at 76 percent, followed by "poverty" at 63 percent. When asked which areas of school funding would have the highest impact on student learning, the category they agreed on most was "anti-poverty initiatives."[95] Shanna Peeples, a high school English teacher from Amarillo, Texas, and the 2015 recipient of the National Teacher of the Year award, spoke for them all: "Many of our students are stressed and traumatized by the effects of increasing poverty, which shows up in mental health issues as well as learning disabilities."[96]

No discussion of the anti-hunger infrastructure would be complete without a stop on the school lunch line.

Joseph Molieri/Bread for the World

Peeples knows firsthand the challenges of working with students who have experienced the traumas and toxic stressors of living in poverty. At the school where she teaches, 85 percent of the students are growing up in low-income households.[97] We know that education can be an empowering experience for children from low-income backgrounds, but children who come to school hungry are disempowered from the moment the school bell rings. They are robbed of the chance to benefit from education.

School systems are part of the anti-hunger infrastructure in their

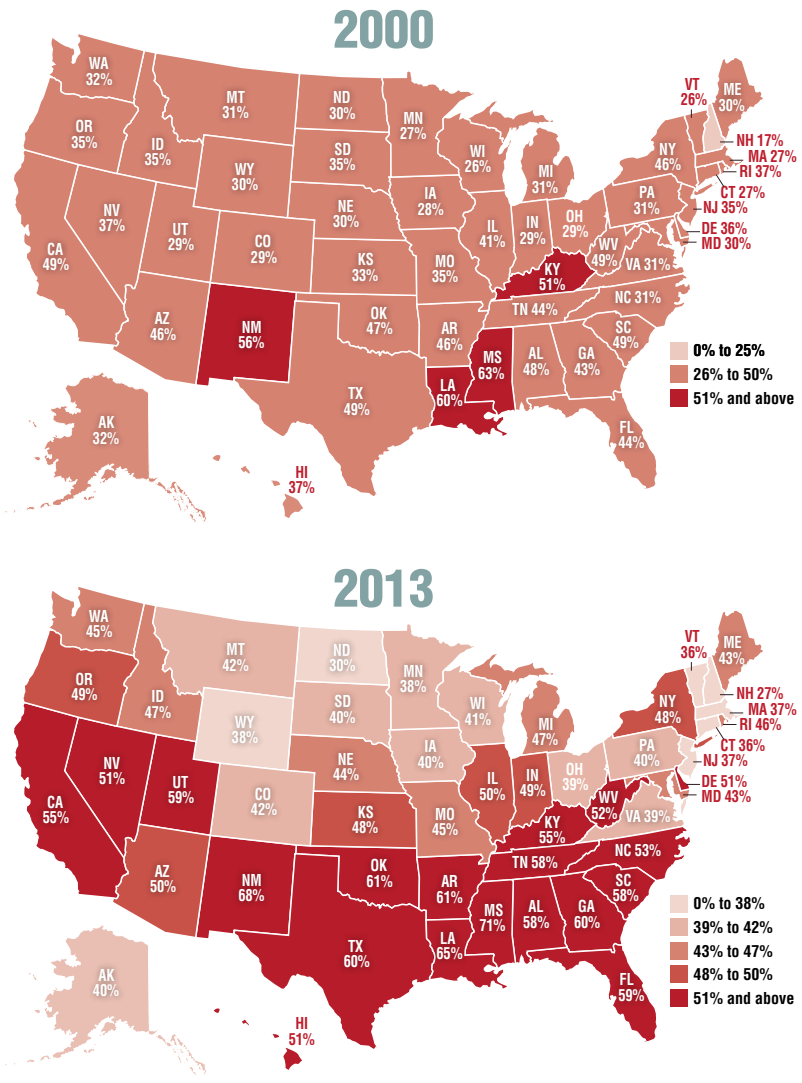
communities, though often they would not describe themselves in those terms. Children spend up to half the day at school, most days of the year. Schools administer the school meal programs. For most children, the federal school meal programs provide more than half of their daily calories; and on some days, these meals are the only food some children have.[98] Only at home is there a better opportunity to teach children about good nutrition and help them develop healthy eating habits that will last them a lifetime.

Only about two-thirds of schools that serve lunch also offer breakfast.[99] "When schools do not provide breakfast to children, the loss of return on educational investment becomes a hidden tax paid by the local district and community," concludes a team of researchers from the Harvard School of Public Health and Medical School, drawing on evidence from more than 100 published studies on the effects of the School Breakfast Program.[100] The studies show that the School Breakfast Program helps prevent childhood obesity and other health problems.[101]

Congress reauthorized the Child Nutrition and WIC Reauthorization Act in 2010. Also known as the Healthy, Hunger-Free Kids Act of 2010, the legislation includes a "community eligibility provision" that allows schools with large percentages of low-income students to offer meals free to all, reducing the administrative burden on schools to track the eligibility of each student. Evaluations show that this provision has led to more schools serving breakfast.[102] In the 2011-2012 school year, breakfast participation increased by 25 percent in participating schools in Illinois, Kentucky, and Michigan.[103] Community eligibility did not become available in all states until the 2014-2015 school year.

The Healthy, Hunger-Free Kids Act also featured the most substantive changes to nutrition requirements in the school meal programs since the programs were

Figure 2.9 **Low-Income Students* in Public Schools, 2000, 2013**



*Children in families with incomes of 185 percent or less of the federal poverty level.

Source: Southern Education Foundation

established. Ironically, the School Nutrition Association—representing the cafeteria professionals charged with meeting the requirements—has been an outspoken opponent of the improved nutrition standards, much to the chagrin of parents, pediatricians, and 19 past presidents of the association itself. The School Nutrition Association is now funded largely by processed-food manufacturers who recognize that healthier standards pose a direct threat to their bottom lines.[104] The official position is that the new standards are too difficult and expensive to implement and students don't like the new foods. School meal programs are indeed underfunded, but they always have been. USDA reports that more than 95 percent of schools are meeting the new standards;[105] and there is little evidence that students don't like the foods. According to recent studies, in fact, plate waste (the amount of food that goes uneaten) is less than it was before the new standards were adopted.[106]


Joseph Molieri/Bread for the World

Evaluations show the kids approve of the new nutrition standards enacted in the Healthy, Hunger Free Kids Act of 2010.

There are no federal meal programs available to post-secondary students. Type the words "hunger" and "college students" into a search engine, and page after page of stories appear about college students struggling with hunger. At Western Oregon University in 2011, 59 percent of the students screened positive for food insecurity.[107] When students from the College of Osteopathic Medicine in the Pacific Northwest showed up at the food pantry in Lebanon, Oregon, the volunteers there could not believe they were serving med students.

In 2014, Janet Napolitano, the president of the University of California (UC) public university system, launched an initiative to reduce student hunger across UC campuses. Food pantries have opened on every campus. At UC-Davis, a registered dietitian in Student Health Services provides prescription vouchers for fruit and vegetable purchases at the campus farmers market, a "swipe out hunger" policy allows students to donate unused meals in their meal plans to other students, and SNAP outreach is conducted on campus.

For most of the last century, California had what was widely considered the best public university system in the nation. Nine UC campuses are still ranked among the top universities in the world.[108] What has changed is the egalitarian nature of the system. In 1978, Californians voted to oppose raising property taxes to pay for improvements in public education, in direct opposition to the vision of an earlier generation of Californians of making higher education affordable to all state residents.[109] Today, the state spends more to imprison people than it does on higher education.[110]

In January 2015, President Obama proposed two years of free community college for everyone. This may not be a solution for everyone, but it will certainly help in California, where the Public Policy Institute of California reports that by 2025 the state will need an additional 450,000 healthcare workers to keep pace with population growth and an aging popula-

tion.[111] At least 40 percent of the jobs needed to meet the employment projections require no more than an associate's degree or a post-secondary certificate.[112]

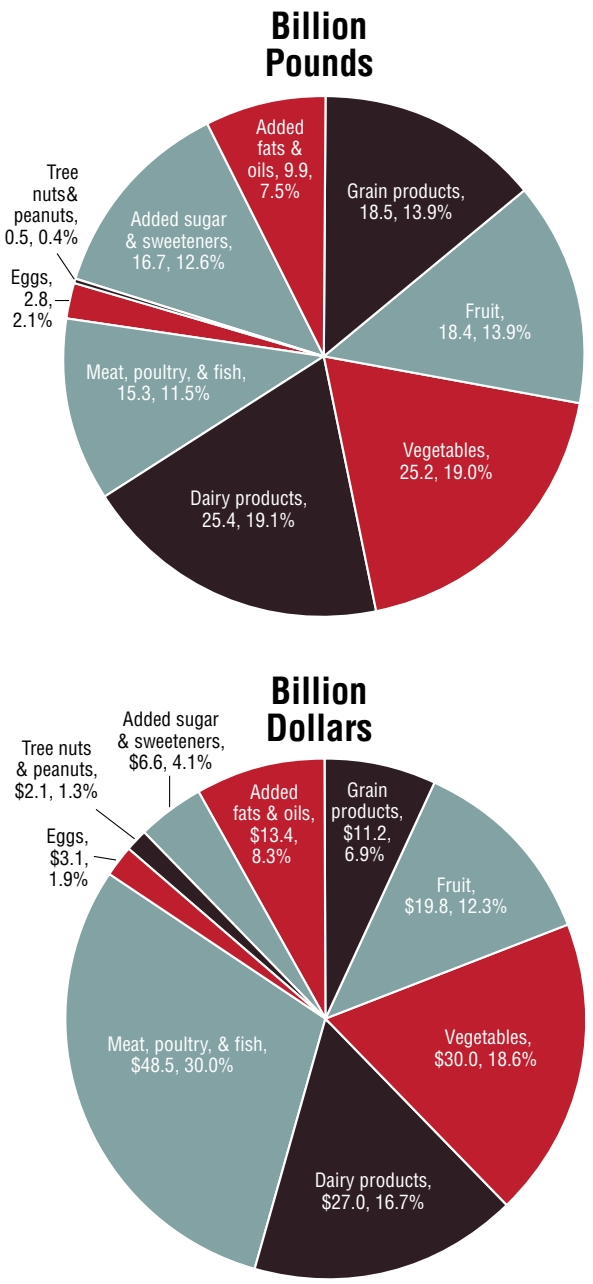
At the community level, academic institutions are working with understaffed nonprofits to build the evidence base of what works against food insecurity and malnutrition. Most nonprofits do not have the capacity to do this research and analysis themselves. Shreela Sharma, an epidemiologist focused on childhood obesity at the University of Texas School of Public Health in Houston, is compiling evidence on the effectiveness of Brighter Bites, a program she co-founded that reclaims wasted fruits and vegetables and provides them to low-income families. Food reclamation is probably the least developed part of the U.S. anti-hunger infrastructure. Every year billions of pounds of perfectly good produce go to waste.[113] See Figure 2.10. The United States throws away more pounds of vegetables than the total amount *produced* in most countries (all but eight, in fact).[114]

The produce for Brighter Bites comes from the Houston Food Bank, the largest depository of donated fresh food in the city. It is all high-quality fresh fruits and vegetables that are either too big, too small, or too awkwardly shaped to meet the uniform standards the stores demand from suppliers. Brighter Bites operates much like a food co-op. It takes place at schools, and parents bag the food and manage the distribution themselves. "By going into the schools we're empowering them to make decisions in an environment where they already feel comfortable," says Sharma.[115]

Each family receives a 30-pound bag of produce each week for 16 weeks, which saves them an average of $35 to $40 a week at the grocery store. Seventy-five percent of the parents reported that their families are continuing to consume more fruits and vegetables after the 16 weeks are up.[116]

In three years, Brighter Bites has grown from 150 families at one school in Houston to more than 5,000 in 20 schools and has also expanded to schools in Dallas. The goal of the program is to build a community at each school around healthy food. Like churches and farmers markets, the schools are a focal point for community activities.

Figure 2.10 **Estimated Total Amount and Value of Food Loss in the United States by Food Group, 2010**



Source: Jean C. Buzby, Hodan F. Wells, and Jeffrey Hyman (February 2014), The Estimated Amount Value, and Calories of Postharvest Food Losses at the Retail and Consumer Level in the United States, Economic Information Bulletin Number 121, Economic Research Service, United States Department of Agriculture.

Box 2.5

MEANS AGAINST THE CLOCK

by Maria Rose Belding, MEANS Database

Just-in-time donations have long been the lifeblood of emergency food providers. In a typical scenario, a local grocer might give 400 jars of peanut butter to a food pantry. But those jars expire in just two weeks, and some will end up in a landfill. This is especially frustrating when you consider how there is likely another pantry nearby that needs peanut butter and is going without or paying for it at cost.

In tens of thousands of food pantries, soup kitchens and food banks across the United States, volunteers and staff are in a battle against the clock to distribute donations before they expire. For decades, the clock has been winning.

Joseph Molieri/Bread for the World

The MEANS Database is an online tool designed to reduce food waste in the emergency food system.

American emergency feeding systems threw out an estimated $650 million in product in 2012—and that number may be rising. As emergency food providers commit to serving healthier options, moving those goods is becoming a steeper challenge. Fresh fruit expires far faster than foods heavy with preservatives.

Our team at MEANS is representative of a growing population of young leaders challenging the status quo of how the emergency food system operates. MEANS is an acronym: Matching Excess And Need for Stability. We're an online database system that allows food pantries to communicate with each other and with the donors who want to supply them. The same account allows users to alert their neighbors to their extra food and to receive targeted alerts that the food they're looking for is available—all at no cost.

MEANS represents a unique opportunity to move more highly perishable goods to kitchen tables instead of landfills. Donors and recipients work together to arrange how to move the food. Retailers, businesses and other groups with leftovers now have an option far better than a dumpster. They can type what they have into a computer and someone will come pick it up. The food goes to the first agency that claims it by clicking a button in the alert.

MEANS is proud to be working with emergency food providers representing 1,500 partner agencies in 12 states and dozens of cities, such as the District of Columbia, Baltimore, and Philadelphia. We know emergency food providers work incredibly hard and are up against overwhelming need. They are the last resort for millions of hungry Americans.

Maria Rose Belding is the founder and executive director of the MEANS Database, which can be found at meansdatabase.com.

Partners at the Table

"Healthcare systems and leaders must recognize that lacking access to nutritious, affordable food is a dire public health concern," warns Randy Oostra, president and CEO of ProMedica, one of the largest healthcare systems in the United States.[117] Oostra has been sharing this message with other healthcare executives, encouraging them to join him and ProMedica by championing the cause of ending hunger in their own communities and nationwide.

Based in Toledo, Ohio, ProMedica is a mission-driven, locally owned, not-for-profit health care system serving 27 counties in northwest Ohio and southeast Michigan. As part of its mission to improve health and well-being, ProMedica, through its collaborative *Come to the Table* initiative, has made hunger chief among the many social determinants of health it has emphasized in recent years. The initiative evolved out of the system's obesity prevention and nutrition education work because, as ProMedica learned, the hunger and obesity epidemics are linked. Communities cannot successfully reduce one without reducing the other.

To that end, ProMedica, with the help of generous philanthropist Russell Ebeid, will be opening the Ebeid Institute for Population Health in November 2015. Anchored by a fresh food market on the first floor, the building's upper floors will be converted into education and community space where cooking classes, financial literacy education, health and parenting education, and other services can be offered to the community. This unique model will be established in an identified food desert where families do not have access to healthy, affordable food. ProMedica envisions the Institute as a hub that can be replicated in other communities nationwide.

In 2014, ProMedica launched another of its collaborative solutions on hunger and malnutrition by partnering with the local food bank and the local

The 2014 Farm Bill included $100 million in grants to support projects that double the value of SNAP/ food stamp purchases of fresh fruits and vegetables at farmers markets.

Wholesome Wave

casino in a food reclamation program. ProMedica hired and trained two part-time employees to work in the casino kitchen and reclaim prepared but unserved food that would have otherwise gone to waste. The food is frozen, picked up on a regular schedule by the food bank, and delivered to area homeless shelters and communal feeding sites. Since its inception, the program has reclaimed more than 200,000 pounds of food—approximately 125,000 meals. This successful initiative has since expanded to include additional community locations and several of ProMedica's hospital cafeterias.


Zach Blum for Bread for the World

Every patient admitted to a hospital in the ProMedica network is screened for food insecurity, and those who screen positive receive an emergency food package along with community resource information.

These fruitful community partnerships led ProMedica to look in the mirror—seeking to identify how its own health system and providers could better help their patients. This was the beginning of ProMedica's food insecurity screening program. Every patient who is admitted to a hospital in the ProMedica network is given a two-question food security screen. The screen is evidence-based and has been validated by Children's HealthWatch. When they are discharged, patients who are identified as at risk of food insecurity are provided with an emergency food package along with community resource information. Oostra is urging his peers to do the same at other hospitals and physicians' offices, and he advocates making food insecurity screening a requirement when hospitals conduct their Community Health Needs Assessments. "We believe that this two-question screen is a tool that can easily identify the need for increased focus on social determinants and further link basic needs to clinical care," he says.[118]

In April 2015, ProMedica opened its first food pharmacy. As part of this effort, ProMedica network physicians screen for food insecurity and refer patients who are determined to be at risk to the food pharmacy. The food pharmacy is connected to patients' electronic health records, so the staff can provide patients and their families with several days' worth of food that is appropriate given any health problems the patient may have. For instance, patients with diabetes are provided with low sugar options, while those with hypertension are provided with low sodium choices. Patients also have the opportunity to schedule a consultation with a registered dietitian to obtain additional nutrition education. With an initial referral, patients can visit the food pharmacy once a month for up to six months; if they are still in need of assistance after that, they can visit their primary care provider for an additional referral. ProMedica is beginning an evaluation of the program to determine the outcomes and impact of the intervention.

In an effort to bring the food insecurity screening to scale, ProMedica introduced its screening process to Epic, one of the largest electronic health record software companies in the country, and discussed embedding the two-question screen in Epic's basic platform. Epic collaborated with ProMedica to build the screening and referral process into the platform; as a result, Epic has now agreed to include the food insecurity screening in its base product. By building the screening tool and referral process into the electronic record, additional hospital and healthcare systems across the country can more easily establish their own interventions at the local level. They don't have the burden of developing the electronic portion of the process.

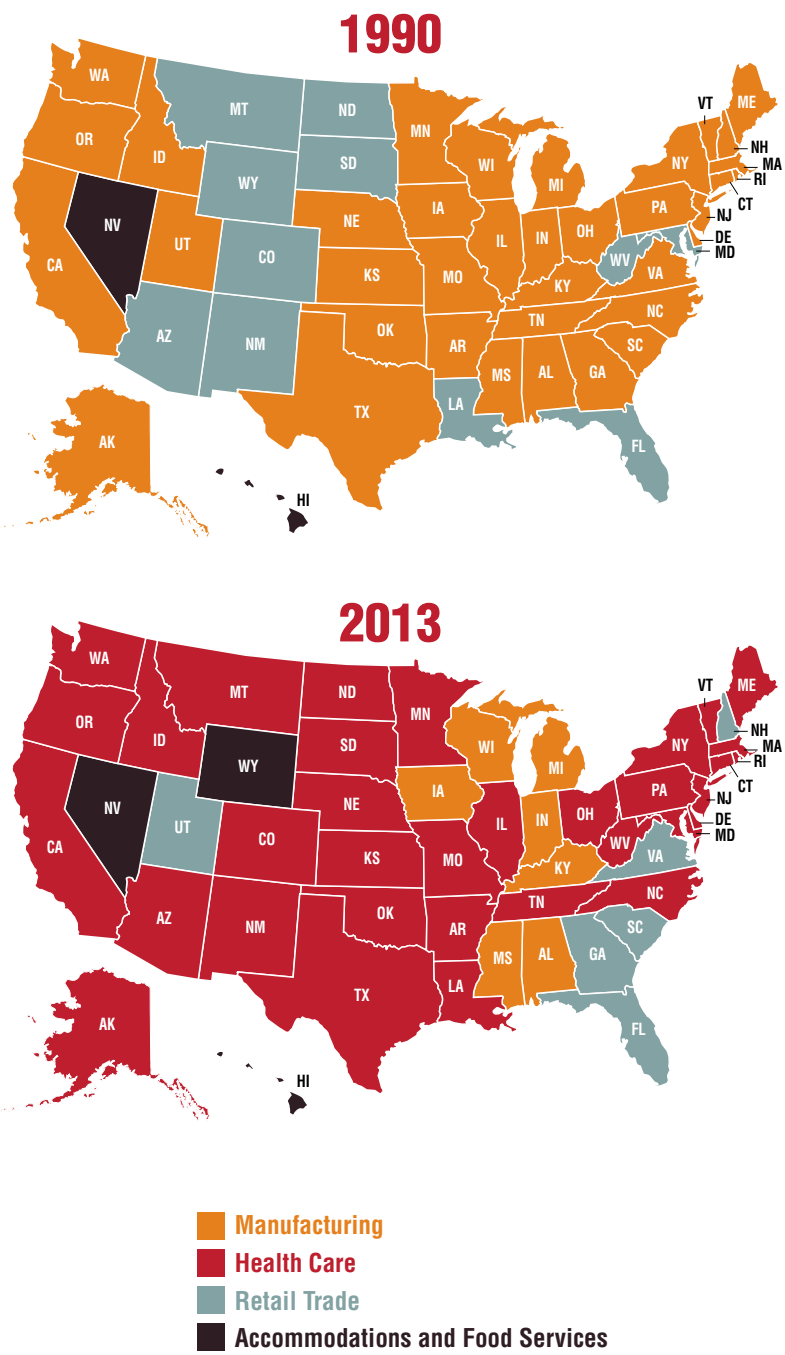
ProMedica is working to bring additional hospital and healthcare systems to the table to respond to hunger as a health issue. Conversations with its community partners pointed the network to national anti-hunger leaders Share our Strength and the Alliance to End Hunger. ProMedica was chosen as a Share Our Strength No Kid Hungry Ally. It also joined the Alliance to End Hunger, whose members include corporations, private businesses, nonprofits, universities, foundations, and individuals committed to building the political will to end hunger in the United States and abroad. The Alliance to End Hunger is the secular affiliate of Bread for the World and Bread for the World Institute. These partnerships at the national level have helped to bring more members of the health sector into a discussion of hunger as a health issue rather than as solely a poverty issue or social problem.

Randy Oostra, president and CEO of ProMedica, speaking on Capitol Hill in 2014 at the first *Come to the Table* summit.

In February 2014, ProMedica partnered with the Alliance to End Hunger and USDA to hold the first of its *Come to the Table* summits. This one was held in Washington, DC, on Capitol Hill, and invited healthcare leaders, anti-hunger advocates, and members of Congress to discuss in what ways hunger is a health issue as well as potential responses. Subsequent *Come to the Table* summits have been held in Chicago, Atlanta, and Albuquerque. Based on its experiences, ProMedica firmly believes that broadening the dialogue on hunger to include the healthcare sector can lead to sustainable solutions.

In October 2015, ProMedica joined forces with the American Association of Retired Persons (AARP) Foundation to launch The Root Cause Coalition, a national coalition formed to address hunger as a public health issue along with other social determinants. With The Root Cause Coalition as its moniker, members of the organization will work to improve health outcomes for all through education, advocacy and research. Additionally, the partners have

Figure 2.11 **Industry With the Highest Employment by State**



Source: U.S. Bureau of Labor Statistics

commissioned a study by the CDC Foundation in collaboration with the Centers for Disease Control and Prevention (CDC) to identify and disseminate effective strategies to address the cycle of food insecurity and its relationship to acute medical events in individuals with chronic diseases. ProMedica and AARP Foundation are confident the findings of this study will help others in the healthcare field to understand the need to engage in this issue and provide many opportunities to develop, evaluate, and deploy new strategies.

One of Oostra's first actions upon becoming ProMedica's president and CEO in fall 2009 was to establish an advocacy fund to help support community organizations in responding to people's basic needs, specifically food, clothing, and shelter. At this time, Toledo was still reeling from the effects of the Great Recession. The needs were obvious, and the fund was immediately supported by ProMedica's board of trustees. ProMedica has a parent board of 20-25 members, and each hospital in the ProMedica system has its own board. When you start adding all these entities up, it becomes clear that ProMedica has more than 450 to 500 board members.

All of the board members are invested in their communities; Oostra was pleased by how readily they supported the establishment of the basic needs fund and its primary emphasis on hunger and nutrition. Since its inception, the Advocacy Fund has provided

approximately $300,000 annually in support to agencies throughout ProMedica's service area. The "request for proposal" system has illuminated specific needs in local communities. Successful projects stemming from proposals include starting a weekend backpack program for kids, purchasing a refrigerated box truck for a local food bank, and financing kitchen upgrades at a local senior center's feeding site.

In addition to working with healthcare providers and community partners, ProMedica has recognized the importance of working with policymakers to make progress addressing the social determinants of health. No lawmaker can afford to dismiss the concerns healthcare leaders raise about the economic impact of health problems in their communities. ProMedica is not just the biggest healthcare system in its region—it's the largest employer. The Department of Labor projects that by 2022, occupations and industries related to health care will create more new jobs than any other sector.[119] The rise of health care as an economic juggernaut coincides with the decline of the manufacturing sector. See Figure 2.11. The decline of manufacturing and the collateral damage it wrought is evident to ProMedica, as Toledo is one of the poorest cities of its size in the country.

Based on its experiences, ProMedica firmly believes that broadening the dialogue on hunger to include the healthcare sector can lead to sustainable solutions.

Barbara Petee, the chief advocacy and government relations officer for ProMedica, says of its work, "Conversations with policymakers are much more meaningful when you can discuss the positive impact your health system is having on the community. You want them to understand the character of your organization and its commitment to the community. The nutrition programs and policies may not be a typical topic of a healthcare conversation across the industry, but they certainly have become a regular point of discussion for us and our legislators, and we're working hard to bring other health professionals to this point, as health care has a huge stake in the effects these policies have on our patients and families." This mindset helps drive ProMedica's advocacy work and its employee engagement as well. The network regularly shares action alerts with employees on legislation related to hunger and other social determinants of health to help ensure their strong voice is heard.

Building strong communities requires firm commitment and perseverance. Health care can play a pivotal role. "We believe it is critical to build awareness of this issue across the healthcare industry so that hunger as a health issue becomes a national priority," Oostra said to participants in the most recent *Come to the Table* summit, held in New Mexico. "We must work collectively to identify and address the core issues that lead to hunger."

'FOOD IS MEDICINE' IN NAVAJO NATION

by Molly Marsh, Partners In Health

Store manager Cheryl Blair ushers a small group of employees and health workers into her second-floor office, which overlooks the shelves of Totsoh Trading Post near Tsaile, Arizona, in the Navajo Nation.

They settle themselves into chairs, ready to hammer out the mechanics of a program that aims to improve Navajos' health by increasing their access to fruits and vegetables. Called the Fruit and Vegetable Prescription Program (FVRx®), the effort links retailers, community health workers, and clinics to create a better supply of and demand for fresh produce.

"Notice our food—it's all junk food," says Blair, gesturing toward aisles of chips and beef jerky, soda, and sugary confections. Not many kids are introduced to fresh foods at a young age, she continues. "It's hard—if you can't eat it as a kid, you're not eating it now."

"We want to bring back the notion that families can use healthy food to create healthy lifestyles."

There are only about 100 stores like this in Navajo Nation, an expanse of 27,425 square miles stretched across parts of Arizona, Utah, and New Mexico, and most carry little fresh produce. In fact, the U.S. Department of Agriculture has classified the entire territory as a food desert. The grocery stores and convenience stores are hard to reach—or out of reach—for Navajo who lack regular access to transportation, and high poverty rates mean most people can't afford to buy healthier foods even if they were available: 44 percent of households live below the poverty line. With dollars to stretch, families opt instead for dense, calorie-rich food that fills them up.

The corresponding effect on health is alarming. Navajos experience high rates of obesity and malnutrition, as well as diet-related illnesses such as diabetes and hypertension. Heart disease and diabetes are the leading causes of death on the reservation; about 26,000 people—nearly 22 percent of the adult population—have diabetes. Half of all children are overweight or obese.

Community Outreach & Patient Empowerment (COPE), a Gallup, New Mexico-based project of global health nonprofit Partners In Health, helps tackle these health disparities by providing training and support to nearly 100 community health representatives (CHRs) employed by Indian Health Services.

These CHRs play a critical role in communities. They visit people in their homes—many of whom they've known for years—to provide health care, and connect them to clinics and hospitals when they need more specialized treatment. They also counsel clients on healthy living habits, including eating more nutritious foods. Without reliable access to those foods and extra money to buy them, however, clients struggle to change their diets.

In response, COPE has become a catalyst and partner in a movement under way across the reservation to create stronger links between food and health. Scores of local and tribal health facilities, community organizations, and food security activists are pushing to create more awareness among Navajo about the importance of eating nutritious foods. These groups are also working to revitalize Navajo food traditions, promote food sovereignty, and spur economic development.

FVRx® is one part of this effort. Developed by food access organization Wholesome Wave, the program in Navajo Nation targets new and expecting mothers with gestational diabetes, and overweight or obese children from 3 to 6 years old. CHRs work with local health providers to identify families with these health risks and enroll them in the program. Clinicians

also encourage their patients who meet these criteria to participate.

When an expectant mother visits her doctor at Tsaile Health Center, for example, she is referred to a CHR who talks with her about nutrition and is given a "prescription" worth $1/day/per family member that she can redeem for fruits and vegetables at Totsoh Trading Post. The voucher is good for one month.

This mother will receive a check-up from her doctor once a month for six months, at which her weight and blood pressure are measured, as well as other vitals. If she has a young child who is overweight or obese, that child will also receive regular monitoring. Over their period of enrollment, COPE staff will collect data on their Body Mass Index measurements and fruit and vegetable consumption to check their progress.

"We're working on the basic concept that food is medicine," says Memarie Tsosie, COPE's food access manager. "Back in the old days, most of our grandparents ate food to nourish their bodies. Now it seems like food is for convenience. We want to bring back the notion that families can use healthy food to create healthy lifestyles."

So far, about 100 families from the territory's southeast region are participating in FVRx®, as are 10 health centers, two grocery stores, four trading posts, six convenience stores, and one farmers market. More of each will join the mix in subsequent months. COPE's goal over three years is to expand into every region of Navajo Nation, reaching 75 percent of its population—about 135,000 people.

To ensure fruits and vegetables are available for them, COPE's FVRx® team has identified all retailers on the reservation, recruited stores to participate in the program—Totsoh is one of the first—and helped owners better promote the purchase of fruits and vegetables in their stores. The team also works with farmers markets and local growers to try and get their produce on to store shelves. The idea is to encourage stores to increase the number of healthy offerings while guaranteeing a certain level of demand for owners and growers.


Cecille Joan Avila/Partners In Health

Fresh fruits and vegetables available at the Teec Nos Pos Trading Post, one of the early adopters of the fruit and vegetable prescription program.

FVRx® teams also coach retailers through the voucher redemption process, which is the reason for the gathering in Blair's office. The women work through possible snags—how to make sure IDs are accurate, what to do if shoppers forget their vouchers or if they buy more than they have credit for. The dietician among them also helps plan a menu for a cooking demonstration the store would like to hold. They settle on spinach smoothies, and chicken salad with pecans and cranberries.

While FVRx® enrolls specific families, the program's underlying goal is to create an environment where entire communities have access to affordable fruits and vegetables. And it's working—Blair and other store managers say they've seen an increase in the amount of produce purchased by families who aren't participating in FVRx®. They initially worried they wouldn't be able to sell everything; now they're selling out.

Molly Marsh is Managing Editor of Partners In Health, a global nonprofit that provides health care to poor communities in 10 countries. Read more at www.pih.org.

Joseph Molieri/Bread for the World

Unprecedented Gains, Undeniable Challenges: Hunger, Health, and Inequality in Developing Countries

Launching Off Point

"Countries do not expect charity, they want capacity."

— Margaret Chan, Director-General, World Health Organization[1]

KEY POINTS

- Even as hunger rates decline in every region of the developing world, wide-scale malnutrition from vitamin and mineral deficiencies continues to impose a devastating cost on individuals—resulting in 45 percent of preventable child deaths, poor health outcomes, and lower lifetime productivity.
- Rising levels of obesity are imposing a huge burden on weak health systems in developing countries.
- Universal health coverage is a viable strategy for all developing countries seeking to reduce health inequities related to poverty.
- Violent conflict was a major obstacle to achieving the Millennium Development Goals (MDGs) and could prove an even greater challenge to achieving the more ambitious Sustainable Development Goals (SDGs).
- The worsening effects of climate change are a major threat to sustainable progress against hunger and malnutrition.
- The impact of climate change on global health is an opportunity to focus public attention on the devastating human costs of failing to confront this challenge more aggressively.

The global hunger rate has been cut nearly in half since 1990. It is now at the lowest level in recorded human history: 1 in 9 people. The Millennium Development Goals (MDGs), launched at the beginning of this century, contributed to progress against hunger and other poverty-related hardships. As the MDG era concludes in December 2015, the global community is preparing to embark on a more ambitious set of Sustainable Development Goals (SDGs), which include a goal to end hunger by 2030.

In developing countries, it is clear that hunger and poor health are bi-directional. Death and permanent disability from hunger occur all too often, especially in vulnerable groups such as women of childbearing age and young children. Malnutrition is the underlying cause of 45 percent of deaths among children under 5, and it is one of the main factors driving the deaths of women in childbirth. More than 2 billion people in developing countries suffer from a form of malnutrition known as "hidden hunger," a lack of key vitamins and other micronutrients that contributes to early death and morbidity.


Erly Tatontos/World Bank

Indonesian preschool-age children receive nutritious meals as part of the services offered though the national government's Early Childhood Education and Development Program.

Economic growth in developing countries has given people more to eat but, in some respects, it has also worsened their diets. Obesity rates in the developing world are climbing rapidly and, as a result, so are the rates of noncommunicable diseases such as diabetes, hypertension, and cardiovascular disease. There are now three people in developing countries who are overweight or obese for each one in the developed world. Most death and disability from noncommunicable diseases in developing countries occur in working-age people.

The triple burden of hunger, micronutrient deficiencies, and obesity presents a major challenge to the capacity of national health systems in developing countries. Building more capacity to treat all of these conditions will be essential to achieving the SDGs. For one thing, in the years after 2030, countries will have to rely mainly on their own capacity to adapt to climate change. Every country faces the challenge of developing such capacity; how well they do will determine whether hunger and malnutrition can not only be ended, but also prevented from recurring, in an era where the climate is changing unpredictably.

Ending Hunger Is Within Reach

At a United Nations (U.N.) summit in the year 2000, leaders of every country in the world came together to agree on a set of eight global development goals, the Millennium Development Goals (MDGs), using 1990 as a baseline for measuring progress. The period covered by the MDGs comes to a close in 2015, so let's take stock of what has been accomplished.

The first goal (MDG 1) called for cutting global poverty in half. In 1990, 37 percent of people in the developing world lived on less than $1.90 a day, the threshold we use today to measure extreme poverty. In 2015, the extreme poverty rate was estimated to be 9.6 percent.[2] Achieving the MDG on poverty is a remarkable accomplishment that repudiates cynics everywhere who insist that poverty and its associated hardships are always intractable.

By 2013, some 17,000 fewer children under the age of 5 worldwide were dying each day than in 1990.[1]

17,000

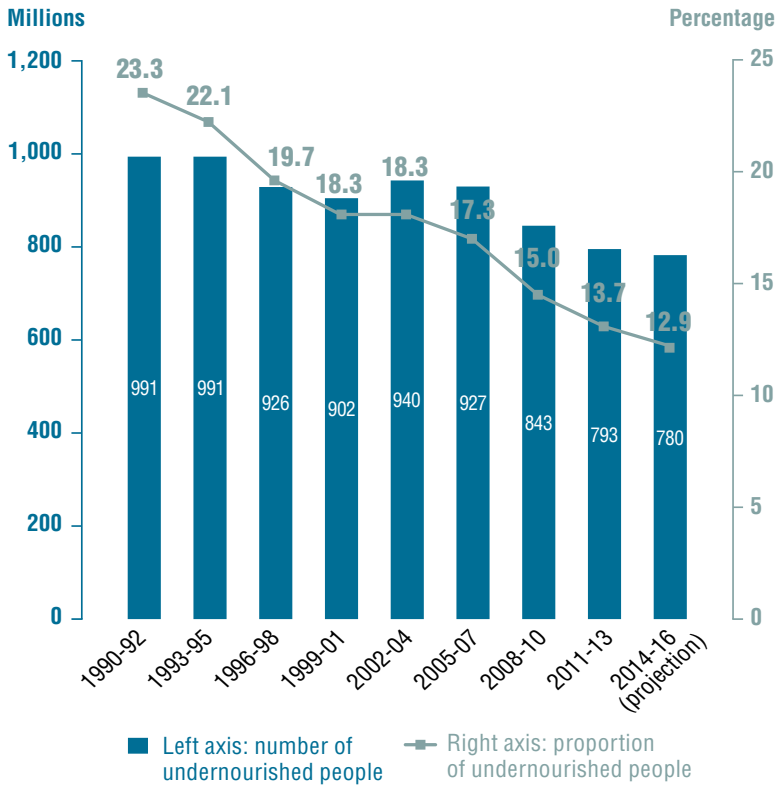
Malaria mortality rates have fallen by **47 percent** globally since 2000. Most deaths occur among children living in Africa where **a child dies every minute** from malaria.[2]

Most remarkable of all, the goal was achieved five years ahead of schedule. By 2011, the extreme poverty rate had dropped still further, to 14.2 percent.[3]

Most of the progress in reducing the global poverty rate has been made since 2000.[4] While people may disagree over how much the MDGs drove this progress, there is no denying that they made a difference. Otherwise, governments would have been less inclined to negotiate goals to succeed the MDGs. In fact, the new Sustainable Development Goals (SDGs) have been the focus of spirited debate for the past couple of years and, at this writing, are on the eve of being adopted by the U.N. member states. The effort to reach the SDGs will last until 2030. One target is to eradicate extreme poverty. If this can be done–particularly in just 15 years–it will be one of the greatest feats in human history.

Figure 3.1 **Progress on Ending Hunger Has Been Significant Despite the Challenging Global Environment**

Number and Proportion of Undernourished People in the Developing Regions, From 1990-1992 to 2014-2016



Source: United Nations (2015), *The Millennium Development Goals Report.*

MDG 1 also called for reducing hunger by half. Though perhaps not as remarkable as the progress against poverty, the reduction in hunger is impressive in its own right. According to the best estimate of the Food and Agriculture Organization of the United Nations (FAO), the world is less than two percentage points away from reaching the MDG target.[5] The percentage of people in the developing world who are undernourished, what we would describe as hungry, has fallen from 23.3 percent in 1990 to 12.9 percent in 2015.[6] See Figure 3.1. The hunger rate

In 2015, **91 percent** of the world's population had access to an improved drinking-water source. Globally, **2.6 billion** people gained access to an improved drinking water source since 1990.[3]

91%

By 2035, **40-50 million new health care workers** will need to be trained and deployed to meet the need for health services.[4]

has declined in every region of the developing world, although progress has not occurred evenly. Southeast Asia recorded the steepest reduction in hunger—from 31 percent of its population hungry in 1990 to 10 percent by 2015. Currently, the highest hunger rate is in sub-Saharan Africa (23 percent), while the largest number of people affected live in South Asia (281 million).[7]

Poverty and hunger are interlocking hardships, which is why they were grouped together as MDG 1. Why was progress against poverty so much more rapid than progress against hunger? People living on $1.90 per day or less spend, on average, between 50 percent and 80 percent of their entire income on food.[8] Global food prices started climbing in the early 2000s and then spiked in 2008—plunging millions more people into hunger and leading to rioting in dozens of countries. Food prices have returned to their levels from before the food price crisis, but in real terms, they remain much higher than in the 1990s.[9] Most hungry and poor people in the developing world live in rural areas and work in agriculture. The poorest rural people are landless laborers and farmers who produce less food than their families need. But although they earn a living as food producers, rural poor people are net food consumers: they spend more on food than they get back in the marketplace as sellers.

Danilo Pinzon/World Bank

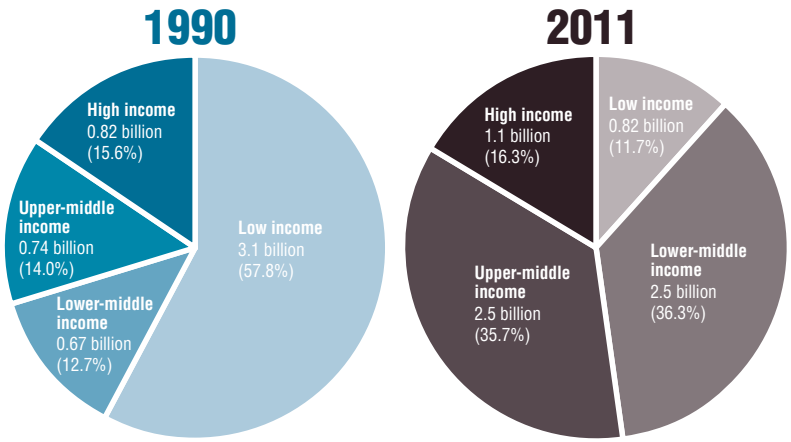
Most hungry and poor people in the developing world live in rural areas and work in agriculture.

Social protection programs, such as cash transfers, can help households strengthen their ability to cope with crises such as hikes in food prices. Research in Latin American countries shows that cash transfers increase the amount families spend on food and have helped reduce food insecurity.[10] Similarly, in sub-Saharan Africa, national cash transfer programs have made important improvements in food consumption and dietary diversity and have generated economic and productive impacts even among the poorest and most labor constrained.[11] Social protection programs have expanded exponentially since 1990. More than 130 developing countries have established social protection programs, most commonly cash transfers and school feeding programs.[12]

Climate change had little bearing on the design of the MDGs. The "sustainable" in Sustainable Development Goals underscores that climate change now shapes the global development agenda. The MDG era showed that countries could withstand economic shocks and get back on track with development quite quickly. The negative effects of climate change in the SDG era and beyond will require ever more resilience and greater cooperation within the global community, a subject we take up later in this chapter.

As the SDG era begins, economic conditions are much different than at the start of the MDGs. Hunger is no longer largely confined to low-income countries. Middle-income countries are home to the majority of people who struggle with hunger.[13] This is a result of economic growth in countries that were formerly categorized as low-income. In 1990, 57.8 percent of the world's population lived in low-income countries; by 2011, the share living in low-income countries had fallen to 11.7 percent.[14] See Figure 3.2. Nearly half of the world's hungry people live in five middle-income countries with rapidly growing economies: China, India, Indonesia, Brazil, and Mexico.[15] Together, China and India accounted for 81 percent of the reduction in hunger in developing countries. Almost two-thirds of the reduction in global hunger during the MDG era took place in China—and yet there are still 134 million hungry people in China. This number is second only to India with 195 million hungry people—nearly one-quarter of the global total.[16]

Figure 3.2 **Movement of Populations From Low-Income to Higher Income Countries Between 1990 and 2011**



Source: Dean T. Jamison et al. (2013), Global health 2035: a world converging within a generation, *The Lancet*.

Although in some contexts economic growth has lifted millions out of poverty, a close look at the data will also show that inequality is on the rise. One main criticism of the MDGs is that they focused on the "low-hanging fruit" and failed to tackle the underlying social issues that affect people in the deepest poverty. For example, people with disabilities make up 15 percent of the global population but are estimated to be 20 percent of people living in extreme poverty.[17] There is no mention in the MDGs of people with disabilities. Ninety percent of all children with a disability do not attend school, and the literacy rate of disabled adults has been estimated to be as low as 1 percent.[18] Often, poverty is an even more pressing issue for people with disabilities than the disability itself.[19]

By and large, countries that made significant progress toward meeting the MDGs were those that enjoyed sustained economic growth and stable political conditions.[20] In sub-Saharan Africa, progress got under way later than in other regions, but it is now accelerating because of increasing political stability. Ghana has made extraordinary progress, meeting both the MDG poverty and hunger targets by 2010. In fact, it has now reduced hunger from 40 percent to less than 5 percent.[21] This accomplishment was not an automatic result of Ghana's strong economic growth, although it clearly made a contribution. Rather, progress against hunger was achieved through a strategy focused on reaching rural poor families with investments in agriculture and providing social protection policies. The latter included

nationwide programs for cash transfers, school feeding, and health insurance. The country's leaders demonstrated a commitment to good governance that has earned the trust of its development partners.[22] Ghana was the first country to form a compact with the Millennium Challenge Corporation (MCC), a U.S. development program established during George W. Bush's administration, designed for developing countries committed to good governance and investing in their people.


Natalia Cieslik/World Bank

In Gaza, a mother and child in a camp for displaced persons.

The largest-ever expansion of global development aid took place during the MDG years, 2000-2015. Much of the increase came before 2008, the year when global recession led donor governments to turn their attention to domestic priorities. The MDGs, as a donor-driven initiative, were formulated and adopted with relatively little input from developing countries. The SDGs have been created in a far more democratic way. One result is that the goals are universal: they apply to all countries. When the MDG era began, donor governments mainly dictated the terms of their aid. This has changed; partner governments are now gaining more control. MCC is just one example of this trend toward country ownership.

Many middle-income countries neither want nor need donor assistance. They can finance their own development priorities, and some have become donors themselves. This leaves traditional donors, such as the G7 group of developed economies that includes the United States, to focus their attention and resources on countries most in need of external support. In 2015, the G7 nations pledged jointly to lift 500 million people in developing countries out of hunger and malnutrition by 2030.[23]

There is good reason for optimism that the world can end hunger by 2030. At the same time, there are very real challenges ahead that cannot be denied or minimized. For example, violent conflict proved to be a major obstacle to achieving the MDGs and could be an even greater barrier to achieving the more ambitious SDGs. Many developing countries are in conflict. In 2013, an estimated 46 percent of the population of the developing world (excluding China, India, and Brazil) lived in countries affected by conflict.[24] The hunger rate is nearly 40 percent among populations trapped in protracted conflicts.[25]

"Every day," the U.N. reported in 2015, "42,000 people on average are forcibly displaced and compelled to seek protection due to conflicts, almost four times the 2010 number of 11,000."[26] Conflicts are treacherous situations for everyone, including aid workers. In 2014, there were 190 major attacks on aid operations, down from 264 in 2013. But the reason for

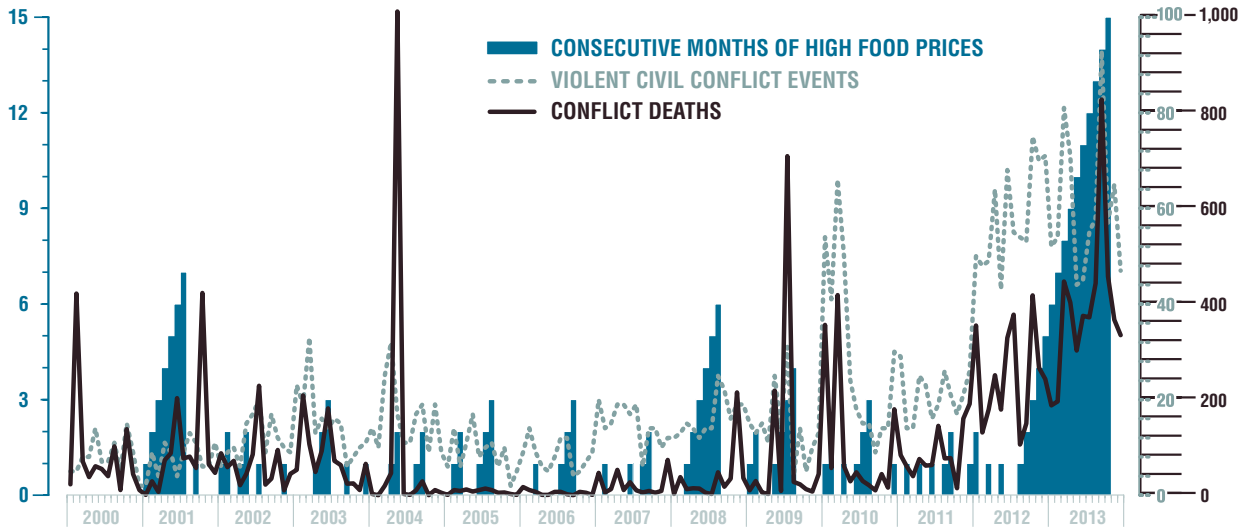
the decline was the reduced presence of aid agencies due to safety concerns[27]—which also, of course, reduces their ability to help those in need.

Hunger is both a cause and an effect of civil conflict. In Syria, conflict broke out against the backdrop of a devastating drought that lasted from 2006 until 2010. The drought destroyed the livelihoods of more than half of the country's farmers and herders, and, by 2009, 80 percent of the cattle in the country had died. A wave of migration from the rural areas into cities fanned the flames of longstanding political grievances, exacerbated by the Syrian government's ineffectual response to the food security crisis caused by the drought.[28] The link can also be seen in northeast Nigeria, where fighting between Boko Haram militia forces and government forces has led to rising food prices as farmers abandon their land and flee the violence.[29] As shown in Figure 3.3, food price spikes in Nigeria from 2000 to 2013 closely track the intensity of the country's armed conflicts.

"Every day," the U.N. reported in 2015, "42,000 people on average are forcibly displaced and compelled to seek protection due to conflicts, almost four times the 2010 number of 11,000."

Even as global hunger and poverty continue to decline, the global community cannot ignore people trapped in places such as Syria and northeast Nigeria. The need for humanitarian assistance has soared. The world has been shocked by a series of humanitarian crises and more refugees than at any time since World War II. As the SDGs were being negotiated, there was a constant chorus of nongovernmental organizations shouting from the sidelines, "Leave no one behind."[30] If the SDGs are to live up to their promise of ending hunger and extreme poverty by 2030, there can be no dodging the most difficult challenges.

Figure 3.3 **Food Price Hikes and Intensity of Civil Conflict in Nigeria, 2000-2013**



Source: Clemens Breisinger, Olivier Ecker, and Jean Francois Trinh Tan (2015), "Conflict and Food Insecurity: How Do We Break the Links?" in *2014-2015 Global Food Policy Report*, International Food Policy Research Institute.

Malnutrition's Multiple Burdens

The MDGs used two indicators to measure progress against hunger. In the section above, we discussed the one most frequently reported—the share of people who are undernourished. The second indicator is the share of children under 5 who are underweight. Similar to the first, the goal was to reduce by half the proportion of children who were underweight between 1990 and 2015. In 1990, 25 percent of children under age five were underweight. In 2015, the estimated share is 14 percent—once again more than the target, which is 12.5 percent.[31]

In Senegal, a community-based program teaches pre-teen and adolescent girls about nutrition and good hygiene.

The MDG hunger goal was correct to include a focus on young children, who are especially vulnerable to the effects of hunger and malnutrition. Malnutrition is associated with more than 45 percent of all deaths in children younger than 5.[32] Being underweight is one indication of malnutrition in children, but this alone does not convey the full extent of the dangers of malnutrition to children's health and development. Underweight means the child does not weigh what a child her age should. It's the result of what nutritionists call undernourishment, or consuming too few calories from macronutrients, chiefly protein, carbohydrates, and fats.

What is missing from the MDG goal is a focus on *stunting*, a critical problem that affects one in every four children in the developing world.[33] We can identify stunted children by their appearance—they are far too short for their age. At first glance, this may not seem as serious a problem as being underweight. After all, severely underweight children caught in famines or conflicts are the subject of some of the most disturbing news images ever. But being too short is only the most visible sign of stunting, the proverbial tip of the iceberg.

In the years since 2000, when the MDGs were adopted, we have learned more about the effects of stunting on very young children in particular. The 1,000 days between pregnancy and age 2 are the most critical time of all in human development, when good nutrition make an enormous difference in children's physical and mental development.[34] Children who are stunted before they turn 2 have sustained permanent damage, regardless of whether they reach their normal weight for age later in childhood. They will always be more vulnerable to communicable diseases, they do not do as well in school, they have more trouble earning a living, and they are at greater risk of developing early-onset chronic diseases and disabilities.

The cause of stunting is a poor diet—a child does not receive the right kinds of foods to get essential vitamins and minerals (micronutrients), sufficient macronutrients, or both.

Specific micronutrient deficiencies, or combinations of them, are associated with serious health problems. Vitamin A and zinc deficiencies, for example, weaken children's immune systems and make them more susceptible to infections. Deficits in iodine and iron limit intellectual potential. Despite significant progress in adding iodine to salt, nearly 18 million babies are born with brain damage each year due to iodine deficiency.[35]

"Although [stunting] is not quite as predictive of mortality as underweight, it is much more predictive of economic outcomes (cognitive scores, education, and wages)," write Susan Horton and John Hoddinott for the Copenhagen Consensus Center.[36] Hoddinott separately has studied the effects of stunting on more than 1,000 people in Guatemala as they grew from children to adults. As children they participated in a controlled trial in which one group received an enhanced nutrition supplement. Children in the control group, who were not given the enhanced supplement and were stunted in early childhood, had significantly lower earnings in adulthood than the others.[37]

Kenneth Pornillos/World Bank

Strengthening health systems should start with the capacity development of health workers to provide quality maternal, newborn and child health services.

Latin America is a high-achieving region when it comes to reducing the share of children who are underweight. But if stunting is instead the measure, the region's performance looks far weaker. By 2008, every country in the region was on track to meet the MDG target of cutting in half the rate of underweight, but only five of the 13 countries would have been on track to cut stunting in half.[38]

The SDGs improve on the MDGs by including a goal to ensure food security and improved nutrition for all with a target to end all forms of malnutrition. In developing countries, a poor person's diet consists primarily of the local staple crop. Even those who can afford higher quality foods rich in vitamins and minerals must generally cut back on them during periods of rising food prices.[39] Depending on the country, the most common staples are rice, maize, wheat, and sometimes cassava and sorghum.[40] These provide the calories people need to avoid starvation, give them the energy to earn their livelihood, and enable them to be contributing members of their communities.

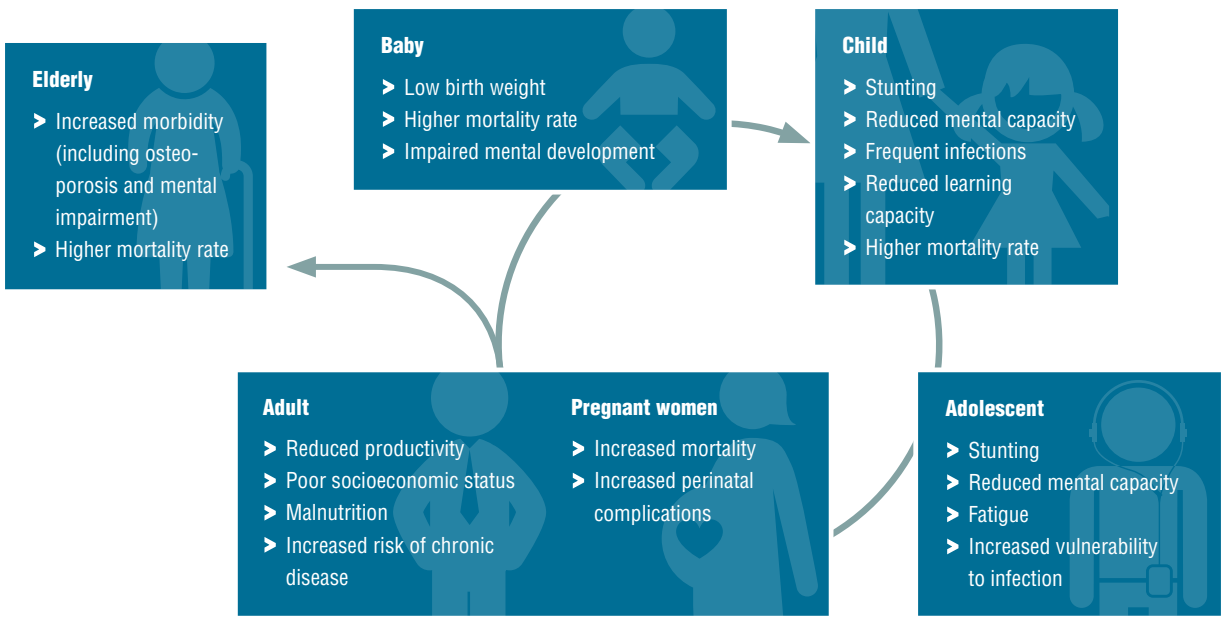
But by themselves, staple crops cannot usually prevent micronutrient deficiencies, sometimes called hidden hunger. Hidden hunger is the most common form of malnutrition; its

consequences can appear at any age. See Figure 3.4. It is estimated that about one in three people in the world suffer from micronutrient deficiencies, the vast majority in low- and middle-income countries.[41] Because children's brains and bodies are developing so quickly, even short periods of micronutrient deficiencies can cause serious damage. Hidden hunger weakens adults as well: Iron deficiency contributes to maternal mortality, thiamine deficiency to nerve and muscle damage, and calcium deficiency to disability in older people because they're more likely to break bones.

The Scaling up Nutrition (SUN) movement is composed of several dozen countries with high levels of malnutrition who are working together to bring proven, cost-effective interventions to scale in their countries. This will hasten the end of the devastation caused by malnutrition, particularly among pregnant women and young children. Food fortification is a cost-effective strategy that can quickly be brought to scale to reduce micronutrient deficits. In 2003, 54 countries were iodine-deficient, but by 2011, this had been reduced to 32 countries as more people got access to iodized salt.[42] The cost-benefit ratio of iodizing salt is estimated to be as much as $81 in health benefits for every $1 spent on the processing.[43] Fortification has also been used to add B vitamins, iron, and zinc to flour and to add vitamin A to cooking oil and sugar.[44] Because they consume higher quantities of commercially processed foods, urban populations are more likely than their rural counterparts to benefit from fortification.

The fastest-growing form of malnutrition in developing countries is obesity, another emphasis in the SDGs that was absent from the MDGs. There are now more than twice as many people in the world who are obese as there are people who are hungry. The majority

Figure 3.4 **Consequences of Micronutrient Deficiencies Throughout the Life Cycle**



Source: Welthungerhilfe, International Food Policy Research Institute, and Concern Worldwide (2014), "Chapter 3: Addressing the Challenge of Hidden Hunger," in *2014 Global Hunger Index.*

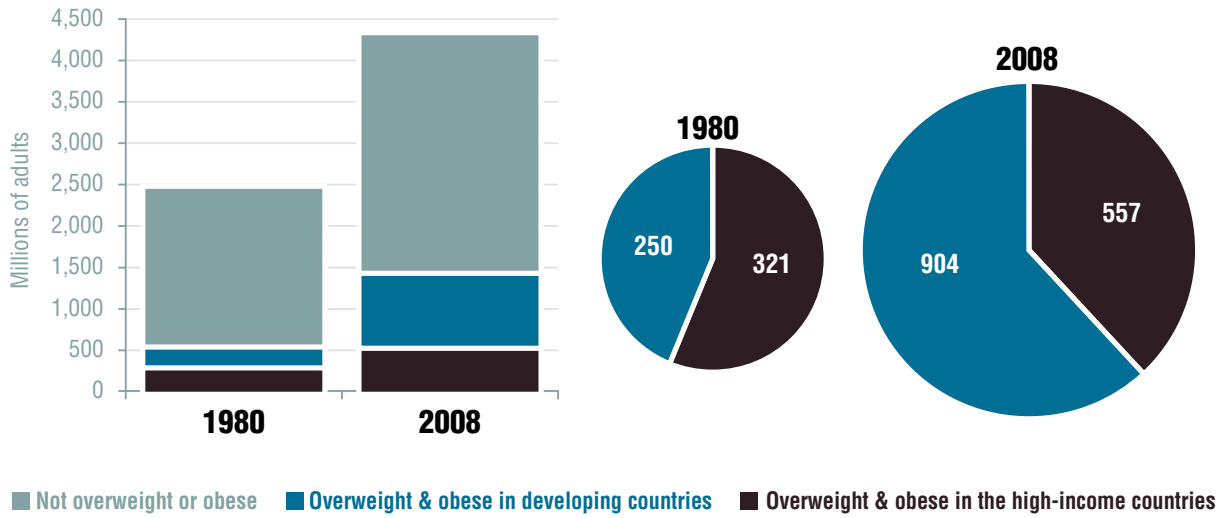
live in developing countries.[45] See Figure 3.5. Rising obesity rates in developing countries could be considered a side effect of progress against poverty: obesity has risen in every part of the developing world where a large share of the population has escaped poverty. For example, in China, a country of 1.2 billion people, the Ministry of Health estimates that one in four people are currently obese.[46] A national survey in 2013 found that 114 million adults (12 percent of the population) have diabetes, with an additional 493 million believed to be pre-diabetic.[47]

"The greatest gift we could give the next generation is to improve the nutrition and growth of girls and young women."

One of the first lifestyle changes people make when they are no longer poor is in what they eat. As household incomes increase, families reduce their consumption of starchy staples and replace them with oils, fats, sugars, and animal products.[48] This "dietary transition" is accompanied by what is sometimes referred to as an epidemiological transition: the prevalence of noncommunicable diseases, such as heart disease and stroke, catches up with, and then surpasses, the prevalence of communicable diseases.[49] Sub-Saharan Africa is the only remaining region where communicable diseases claim more lives each year than noncommunicable diseases.[50] Eighty percent of all deaths from noncommunicable diseases occur in low- and middle-income countries.[51] The consequences of the "epidemiological transition" for families, communities, and economies are especially grave because in low- and middle-income countries, most death and disability from such diseases occur in working-age people (under 60).[52]

In the early 1990s, physician and epidemiologist David Barker advanced an idea about the relationship between hunger and obesity that was at first considered controversial, but is

Figure 3.5 **Explosion in the Number of Overweight and Obese Adults From 1980 to 2008**



Source: Sharada Keats and Steve Wiggins (January 2014), Future Diets: Implications for agriculture and food prices, Overseas Development Institute.

now widely accepted by the medical establishment.[53] The eponymous "Barker hypothesis," also known as the "fetal programming hypothesis," says that children of mothers who are undernourished during pregnancy and grow up in a postnatal environment of food scarcity are "programmed" to become obese in adulthood. If they make a dietary transition to oils, sugars, and animal products in adulthood, most will still not be able to afford the kinds of foods that promote good health. In South Africa, where four in 10 adults are obese, a family whose income is among the bottom third of national incomes would need to spend 30 percent more to achieve a "healthy diet."[54] But these families barely earn enough to meet minimum food needs.

To Barker, what should be done is neither complicated nor expensive. A child's health at birth is most often a reflection of his or her mother's health and nutritional status. It is fruitless to try to improve the health of a child while neglecting the mother; moreover, pregnancy is too late to truly break the cycle of intergenerational malnutrition. Thus, Barker said, "The greatest gift we could give the next generation is to improve the nutrition and growth of girls and young women."[55]

Investing in Global Health Systems

Each year hunger and malnutrition contribute to the deaths of tens of thousands of women in childbirth.[56] In addition to the tragedy of so many young women dying of preventable causes, maternal mortality lowers the odds of infant survival as well. In one study of 90 babies who survived labor and delivery when their mothers did not, less than one-third lived to celebrate their first birthday. This is primarily because babies without mothers are deprived of breastmilk, an infant's main source of nutrition. In addition to providing numerous well-documented health benefits, breastfeeding is also the most affordable feeding option.[57]


Nena Terrell/USAID Ethiopia

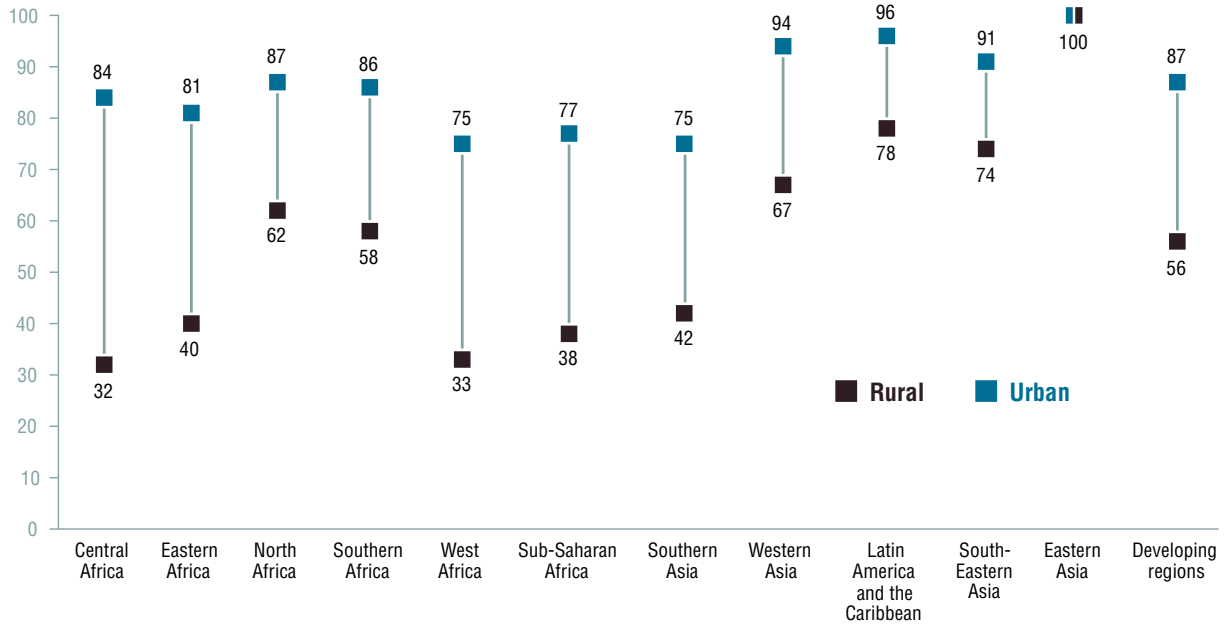
A mother and child at an outpatient clinic in the Southern Region of Ethiopia.

Ninety-nine percent of all maternal deaths occur in developing countries, making maternal mortality the most inequitably distributed health indicator in the world.[58] The rural maternal mortality rate is 2.5 times that of the urban rate.[59] Figure 3.6 shows the differences in access to skilled health personnel in rural and urban areas of developing regions. A higher total maternal mortality rate in a country also usually signals a wider disparity between rural and urban areas.

"Women are not dying because of untreatable disease," explained Mahmoud Fathalla, former head of the International Federation of

Figure 3.6 **Inequalities in Access to Maternal Health Care Persist Across Most Regions**

Proportion of Deliveries Attended by Skilled Health Personnel in Rural and Urban Areas, 2010–2014 (percentage)



Source: United Nations (2015), *The Millennium Development Goals Report.*

Obstetricians and Gynecologists, who did not mince words when getting to the root of the problem. "They are dying because societies have yet to make the decision that their lives are worth saving."[60]

Most nations did not come close to achieving MDG 5, the maternal mortality goal, which called for a 75 percent reduction by 2015. Between 1990 and 2013, the global maternal mortality rate declined by 45 percent, from 380 to 210 deaths per 100,000 live births.[61] Missing from these statistics are the millions of women who survive childbirth but suffer permanent injuries. For every woman who dies of pregnancy-related causes, 20 to 30 others survive with lifelong health problems.[62] One such condition, obstetric fistula, has inspired volunteer physicians from developed countries to travel to communities where it is common and perform the fairly simple corrective surgery needed. Fistula is caused by prolonged obstructed labor.

Poverty is not an excuse for not saving mothers' lives. Some of the world's poorest countries have shown what can be achieved with limited fiscal resources but a healthy dose of political will. Between 1990 and 2013, Cambodia reduced maternal mortality by 86 percent, Timor-Leste by 78 percent, and Rwanda by 76 percent.[63] All three countries accomplished this while also having to rebuild health systems that had been shattered by civil war.

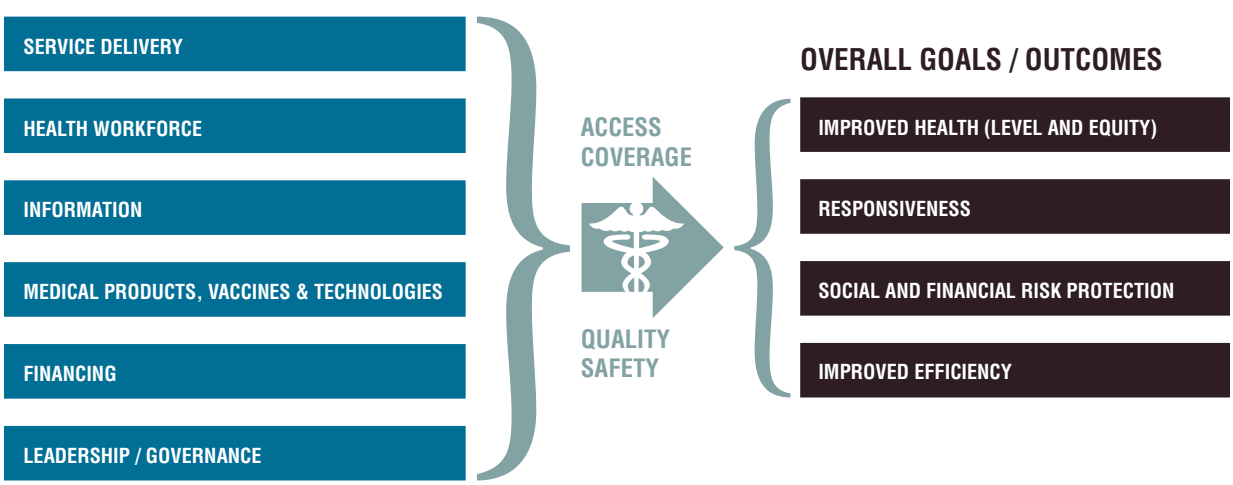
As hunger and malnutrition rates continue to decline, the ripple effects will very likely include progress against maternal and child mortality. But it will take more than enough calories and good nutrition to end preventable maternal and child deaths. USAID has recognized this in its recent Multi-Sectoral Nutrition Strategy—which integrates nutrition into both its agriculture and health programs. National governments and their development partners

must strengthen health systems, so that mothers everywhere, especially those in neglected rural communities, have access to antenatal and postnatal services and the nutritional status of young children is monitored as part of their health check-ups.

Strengthening health systems may not sound as exciting or thrilling as eradicating diseases—and yet, it would be hard to imagine lasting progress against maternal and child mortality without a health system able to deliver quality services to everyone. Service delivery is one of the main building blocks of a strong health system, according to the World Health Organization (WHO) framework shown in Figure 3.7.

Between 1990 and 2014, donors spent $458 billion in aid on health-related programming in developing countries. The U.S. government led the way, providing nearly one-third of it. Over the last decade, U.S. government spending on health has been focused on HIV/AIDS.[64] In 2014 alone, the U.S. government contributed $6.9 billion, which was nearly two-thirds of all global development assistance for HIV/AIDS.[65] By the end of 2014, the President's Emergency Plan for AIDS Relief (PEPFAR), established under President George W. Bush, had

Figure 3.7 **The Health Systems Framework**



THE SIX BUILDING BLOCKS OF A HEALTH SYSTEM: AIMS AND DESIRABLE ATTRIBUTES

- Good **health services** are those which **deliver** effective, safe, quality personal and non-personal health interventions to those who need them, when and where needed, with minimum waste of resources.
- A well-performing **health workforce** is one which works in ways that are responsive, fair, and efficient to achieve the best health outcomes possible, given available resources and circumstances. I.e. There are sufficient numbers and mix of staff, fairly distributed; they are competent, responsive, and productive.
- A well-functioning **health information system** is one that ensures the production, analysis, dissemination and use of reliable and timely information on health determinants, health systems performance, and health status.
- A well-functioning health system ensures equitable access to essential **medical products, vaccines, and technologies** of assured quality, safety, efficacy, and cost-effectiveness, and their scientifically sound and cost-effective use.
- A good **health financing** system raises adequate funds for health, in ways that ensure people can use needed services, and are protected from financial catastrophe or impoverishment associated with having to pay for them.
- **Leadership and governance** involves ensuring strategic policy frameworks exist and are combined with effective oversight, coalition building, the provision of appropriate regulations and incentives, attention to system-design, and accountability.

Source: World Health Organization (2007), *Everybody's Business: Strengthening Health Systems to Improve Health Outcomes.*

made life-saving antiretroviral treatment available to 7.7 million men, women, and children in dozens of developing countries.[66]

Most global health-related development assistance is dedicated to disease-specific programs, perhaps not surprisingly since the MDGs include a goal of reversing the spread of HIV/AIDS, malaria, and tuberculosis (TB). In 2014, total assistance for health systems development was $2.2 billion, only 7 percent of the overall $35.9 billion in health-related development assistance.[67] The health assistance provided for nutrition included even less—$1.1 billion.[68]


Kendra Helmer/USAID

A scene inside the Cholera Treatment Center in Verrettes in the Artibonite department of Haiti.

Health professionals who advocate for a greater focus on developing health systems have warned of the risks of overemphasizing disease-specific programming. By failing to integrate programs on specific diseases into the partner country's health system, donors end up weakening the health system. This is both because health ministries are tempted to shift their priorities away from system development in favor of going where the donor money is, and because NGOs that implement disease-specific programs offer competitive salaries that lure talented workers away from government jobs—where they are most needed to build a strong health system.[69]

"We have tried the disease specific approach toward health aid and if we take an honest look at the results we will see we have created islands of excellence amid a sea of dysfunction," writes Eileen Natuzzi of the Copenhagen Consensus Center, citing the 2014 Ebola outbreak in West Africa as a graphic example.[70] The United States spent over half a billion dollars on HIV/AIDS programming in Liberia, Sierra Leone, and Guinea combined.[71] Meanwhile, health systems in these countries languished. When Ebola began to spiral out of control, the health systems' capacity to perform basic functions such as disease surveillance and response was quickly overwhelmed.

Before 2014, the worst recorded Ebola outbreak had been in Uganda in 2000, when more than 425 people were infected and half of them died. With support from the U.S. Centers for Disease Control and Prevention (CDC), Uganda's Ministry of Health developed a monitoring system that allowed it to stop four subsequent Ebola outbreaks in their tracks. During the West Africa outbreak, staff members of the Uganda Virus Research Institute were able to offer assistance to the beleaguered health ministries of Liberia, Sierra Leone, and Guinea. In 2015 the U.S. government announced it would help establish an Africa-wide institution modeled after the CDC in the United States. Such an institution could help countries defend themselves against future disease outbreaks, but it doesn't reduce the need

to strengthen the health system capacity of individual countries. Not every health problem is a pandemic.

In 2014, the United States Agency for International Development (USAID) commissioned the Institute of Medicine (IOM) to prepare a report with recommendations on how to maximize U.S. government investments in global health in the SDG era. The report suggested "changes to the U.S. government's foreign aid strategy that would build capacity in partner countries and make a clear statement about the United States' commitment to sustainable development."[72]

Maria Fleischmann/World Bank

A young patient has his vital signs checked at the San Juan de Dios Hospital in Guatemala.

The IOM committee that prepared the report urged USAID to be aware of the shifting patterns of illness: "The purpose of prolonging lives threatened by HIV was not to lose them 10 years later to diabetes, also a gruesome and expensive disease."[73] Noncommunicable diseases threaten to overwhelm health systems in low-income countries as completely as HIV/AIDS did in the worst-affected nations. In 2013, in the 49 countries where U.S. health assistance was $5 million or more, the rate of premature death from noncommunicable diseases was 3.5 times the rate from HIV/AIDS, and 1.6 times the rate of premature deaths from malaria, TB, and HIV/AIDS combined.[74] In 2014, less than 2 percent of global development assistance for health-related programming went to noncommunicable diseases.[75]

Improving health systems in ways that equip them to respond to the rise in noncommunicable diseases can also spur progress against maternal and child mortality. Countries facing growing epidemics of noncommunicable diseases are often the same ones as those struggling with high rates of maternal mortality. Maternal mortality rates are said to be a bellwether for assessing the performance of a health system.[76] Liberia, Sierra Leone, and Guinea, whose fragile health systems were overwhelmed by the Ebola outbreak, have the highest maternal mortality rates in sub-Saharan Africa with the exception of Somalia.[77]

There is a direct correlation between higher maternal/child mortality rates in rural areas and the lack of skilled health workers in these areas. Governments have sought to address the shortage of health workers by training people who already live in the communities that need the services. Women's contributions as informal health care workers are an underappreciated resource in many parts of the developing world. With a modicum of training and support, these women could help relieve the shortage of health workers by providing at least basic primary care.

The Mexican government, for example, works with local NGOs to train traditional birth attendants. These are mothers, sisters, and grandmothers who are already providing this service in communities where there are no formal health workers.[78] In Rwanda, the Ministry

of Health trained 45,000 multi-purpose community health workers, one man and two women in each village, with one of the women put in charge of maternal and newborn care.[79] The workers receive a stipend based on their performance. For example, if there are 100 children in the community who need to be vaccinated and 80 receive the vaccine, the health workers are paid 80 percent of the stipend.[80] In India, to encourage institutional deliveries, the government provides payments to community health workers and pregnant women.[81]

A well-functioning health information system is another building block of a strong health system. A country's capacity to collect and analyze data affects its ability to conduct accurate disease surveillance. The MDGs have been praised for focusing the world's attention on better data collection. As we embark on the SDGs, though, there are still many gaps in the data points that affect development, even the basics. Arguably, this estimate from WHO says it all: around the world, two-thirds of all deaths and almost half of all births are not registered.[82] Gaps in data have far-reaching implications. For example, only 67 countries out of 183, most of them high-income, computed their 2013 maternal mortality rates from civil registration data.[83]

Preventable maternal deaths are not the result solely of too little data or too few skilled birth attendants. One key piece of information captured on an official birth certificate is, of course, the person's birthdate and thus her age. How is this related to efforts to end preventable maternal/child deaths? The demographic group most likely to die in childbirth is girls under 15, followed by girls ages 15 to 19. If a girl's birth is registered with the authorities, it is harder for family or community pressure to force her into marriage and pregnancy while she is still too young.

Still, one in three girls in the developing world are married before age 18, and one in nine before the age of 15.[84] *The leading cause of death for such child brides is pregnancy*. A girl or woman's death in childbirth is generally the end of a life marked by blatant and subtle gender inequalities in her society. Women and girls will finally stop dying in childbirth once their lives are valued so that tragedies such as child marriage no longer take place; once women are able to prosecute men who sexually abuse them, including their husbands, and know that justice will be served; and once women are able to gain control of their own reproductive health.

World Bank

Mother-to-child HIV transmission has fallen sharply in countries where donor support has made it possible to increase access to antiretroviral drugs.

Box 3.1

U.S. LEADERSHIP: ENDING PREVENTABLE CHILD AND MATERNAL DEATHS IN A GENERATION

by Beth Ann Saracco, World Vision

In 2012, the international community came together for the *Child Survival Call to Action: A Promise Renewed*, pledging to end preventable child deaths by 2035, along with advancing new interventions proven to promote child and maternal survival. For its part, the U.S. government has named ending preventable maternal, newborn, and child deaths within a generation (by 2035) a national priority.

In 2014, the U.S. government launched *Acting on the Call: Ending Preventable Child and Maternal Deaths*, an ambitious but achievable plan to save the lives of 15 million children and 600,000 women in 24 countries by 2020. The U.S. Agency for International Development (USAID) announced $600 million in awards with more than 26 partners including Coca-Cola, the Bill & Melinda Gates Foundation, the American Academy of Pediatrics, and Johnson & Johnson.


Simone D. McCourtie/World Bank

Bread for the World's 2016 Offering of Letters is focused on ending preventable maternal, newborn, and child deaths.

The U.S. government is also partnering with the governments of the 24 countries prioritized by *Acting on the Call*. Currently, 13 countries, all in Africa, have developed national strategies that include country-wide targets and scorecards to measure and track progress. In the last two years alone, the countries have collectively achieved an 8 percent reduction in under-5 mortality, saving 500,000 lives.

In 2015, the Reach Every Mother and Child Act, bipartisan legislation that would authorize a U.S. government strategy to better coordinate efforts to end preventable maternal, newborn, and child deaths by 2035, was introduced in the Senate. Additionally, the legislation seeks to accelerate progress toward self-sustainability in partner countries, mentioning supporting country-led development and emphasizing the importance of public-private financing mechanisms as ways to do this. Bread for the World's 2016 Offering of Letters will mobilize Bread for the World members and churches across the country to urge their representatives in Congress to end preventable maternal, newborn, and child mortality.

Acting on the Call is an important sign of political commitment from the U.S. government, and a strategy like that described in the Reach Every Mother and Child Act would help ensure that U.S. efforts are as effective as possible. Combined with what has been achieved by partner governments (such as the 8 percent decrease in child mortality mentioned above and many other "success stories" in countries ranging from Bangladesh to Ghana) and the inclusion of these objectives in the SDGs, U.S. efforts should generate powerful momentum toward the day, just 20 years from now, when all preventable maternal/child deaths are actually prevented.

Before joining the government relations team at World Vision, Beth Ann Saracco was a senior international policy analyst in the government relations department at Bread for the World.

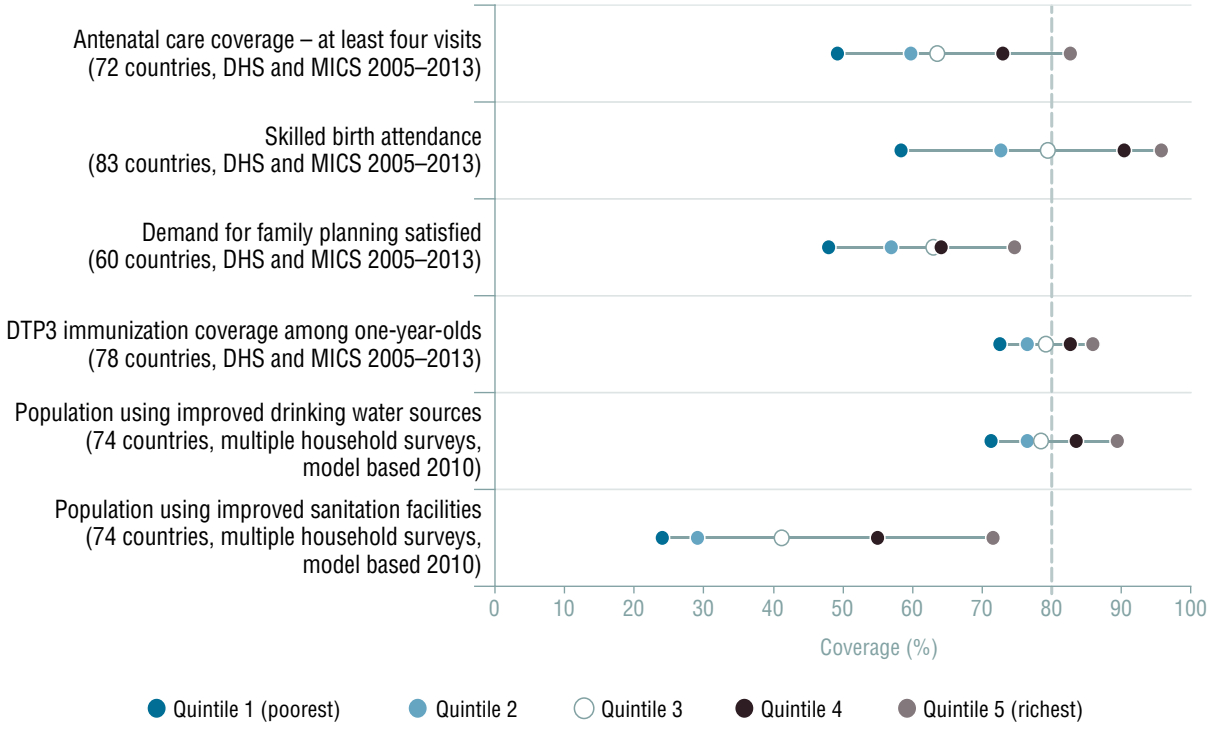
Universal Health Coverage

The 1948 Universal Declaration of Human Rights states that every person has a right to a standard of living adequate for health, including medical care, and the right to security in the event of sickness or disability.[85] Until the end of the 20th century, this statement seemed to be a vision that could be realized only in rich countries. But a great deal has changed in just the last 15 years: dozens of low- and middle-income countries have established national systems of universal health coverage.

Since 2010, WHO and the World Bank have provided technical assistance on universal health coverage to more than 100 low- and middle-income countries.[86] These include the heavyweights we might expect to be part of this group, such as China, India, and Brazil, where years of rapid economic growth have made it possible to finance big, ambitious social initiatives. But there are scores of countries who appear to be punching well above their weight class. Ethiopia, Kenya, Mali, and Rwanda, among others, are determined to provide universal health coverage.

As of now, universal coverage is more a direction than a destination. As economies grow and governments are able to finance expansion, they will go about filling in gaps in coverage and

Figure 3.8 **Median Coverage of Selected Interventions by Wealth Quintile, in Low- and Middle-Income Countries**



Source: World Bank and World Health Organization (2015), *Tracking Universal Health Coverage: First Global Monitoring Report*

improving the quality of health care services. It took Germany—which has the world's oldest universal health care system—127 years to insure everyone.[87] It was slow going in part because for decades Germany had no other countries to compare experiences with. The Joint Learning Network for Universal Health Coverage, a group of 22 developing countries at this writing and growing quickly, has come together to share best practices and offer one another support.[88]

In 2015, WHO and the World Bank published the first global monitoring report on universal health coverage. While a report by itself doesn't do much to speed progress, the fact that these institutions plan to monitor developments annually signals that something real is under way. In another encouraging sign, the SDG on health includes the following description of what health care means: "Achieve universal health coverage, including financial risk protection, access to quality essential health care services, and access to safe, effective, quality, and affordable essential medicines and vaccines for all."[89] Also included in the SDGs are the health indicators left over from the MDG era (these include maternal and child mortality, communicable diseases, water and sanitation, and, of course, hunger) with updated targets. As with the MDGs from 2000 through 2015, the SDGs are a way of holding government accountable, this time until 2030.


Graham Crouch/World Bank

In Afghanistan, the national government's universal health care scheme has prioritized maternal and child health.

Policymakers can target people most in need through a principle known as "progressive universalism." As defined by researchers Davidson Gwatkin and Alex Ergo in *The Lancet*, it ensures that "people who are poor gain at least as much as those who are better off at every step of the way toward universal coverage, rather than having to wait and catch up as that goal is eventually approached."[90] This is the fairest, most equitable approach. It is important that governments explicitly commit to equity in universal health coverage. It cannot be taken for granted since public spending in developing countries has historically favored the rich.[91] A 2013 study of India's publicly-funded health expenditures found that less than 10 percent are for the poorest fifth of the population, while the richest fifth receive nearly 40 percent.[92]

Save the Children argues that universal health coverage may ultimately prove to be the best way of ending preventable maternal, newborn, and child deaths.[93] Since women and children are the most affected by health care inequalities, they will gain most from coverage if it is a well-designed plan.[94] Women receive unequal health care throughout the life course. In addition to the relative lack of progress on health problems that affect only women, such as the soaring rates of pregnancy anemia that contributes to many deaths in childbirth, women receive poorer care than men for universal health issues. For example, middle-aged

and older women are diagnosed later and receive poorer care than men for cardiovascular disease and cancers.[95]

Essential services that save lives must be provided free, since a copayment that seems minimal to officials may still be too high for families living in poverty. In fact, out of pocket health care costs are one of the main reasons people sink into poverty and remain stuck there.[96] Every year, at least 150 million people face catastrophic spending for health care expenses, most in low- and middle-income countries.[97] In India alone, health care costs drove 60 million people into poverty in 2010. One reason is that more than 60 percent of all the expenditures on health care in India are out of pocket costs.[98]

In Nepal, a community health volunteer, dressed in blue, performs a routine check-up on mother and baby to make sure both are healthy.

Mexico's national insurance program, Seguro Popular (Popular Health Insurance), set as its first priority to reduce maternal mortality.[99] Established in 2003, by 2012 the number of people covered reached 52.6 million, the majority of them from the poorest half of the population. Mexico currently has one of the lowest maternal mortality rates in the Latin American region, and since the introduction of Seguro Popular, there has been a significant reduction in the gap between rural and urban areas. The maternal mortality rate in rural Mexico is currently 5.5 per 10,000 live births, versus 4.9 per 10,000 in urban areas.[100] The rural maternal mortality rate in the rest of Latin America is 16 per 10,000, while the urban rate is 8 per 10,000.[101]

The costs of universal coverage will vary by country, and the services will depend on what is feasible in each situation. The poorest countries may not be able to afford more than basic services. Afghanistan offers a health package that includes child immunization; micronutrient supplementation and nutrition screening; tuberculosis and malaria control; prenatal, obstetrical, and postpartum care, and family planning.[102] The first year this package was available free, there was a 400 percent increase in take-up for these services.[103] Middle-income countries such as Mexico can afford to offer more than this. Seguro Popular, for example, guarantees more than 300 services at this point, including treatment for all types of cancer in children, cervical and breast cancer, and HIV/AIDS.[104]

As government spending on health care increases, out of pocket costs tend to decrease, making health care more affordable to poor people.[105] In 2004, the Rwandan government enacted a national health insurance system that reduced out of pocket spending to 20 percent of the country's total expenditure on health, compared to an average of 56.2 percent for Africa as a whole.[106] Compare Rwanda's experience with that of Sierra Leone prior to the Ebola outbreak. Health care expenditures in Rwanda were $66 per capita, in Sierra Leone $96 per capita. But in Sierra

Leone, the government's share was only $16 per capita (less than 17 percent), while nearly all the rest came from the patients' own pockets.[107] In Rwanda, the insurance system produced almost the exact opposite result: government paid 80 percent and patients paid 20 percent. Whether we can prove causality or not, it is certainly worth noting that over the period 2000-2014, Rwanda had the world's highest average annual reduction rate in maternal and child mortality,[108] while Sierra Leone has the world's highest rates of both child[109] and maternal[110] mortality.

Countries are not embracing universal health coverage because they suddenly discovered that it's guaranteed under the Universal Declaration of Human Rights. Rather, spending on health contributes very directly to economic growth and decreased poverty. The returns on investment in health range from striking to staggering. A package similar to the one described above in Afghanistan would yield a return of 9 to 1 in the 74 countries that account for 95 percent of maternal and child deaths.[111] Many factors contribute to making this a great investment for financial, social, and moral reasons—lives saved, disability prevented, gains in productivity, increases in savings, rising GDP, and more.


Arne Hoel/World Bank

Access to clean drinking water leads to improvements in public health and serves as a catalyst for lifting people out of poverty.

The challenge to national governments and their development partners is to deliver quality services efficiently to an increasing number of people. Low-income countries will not be able to scale up without assistance from development partners. In middle-income countries, however, economic growth has created a broader tax base to finance the expansion of health services through domestic revenues. WHO's 2010 World Health Report focused on health system financing. Researchers estimated that between 20 percent and 40 percent of health spending in low- and middle-income countries is wasted through inefficiencies.[112] One way development partners can contribute is by helping developing countries strengthen their capacity so that they become more efficient.

Of course, spending depends on revenue. Developed countries have systems that make tax collection more efficient, which in turn boost government revenues and make it possible to expand services. One study of data from 89 low- and middle-income countries found that an additional $100 per capita in tax revenues substantially increased the proportion of skilled birth attendants.[113] In low-income countries, more efficient and accountable tax systems would also reduce reliance on aid; some nations are already far less dependent on foreign assistance than people in donor countries might expect. Financing universal health coverage will ultimately depend on a sustainable stream of revenue from domestic sources, now being called Domestic Resource Mobilization in international development parlance. See Box 3.2.

Achieving Sustainable Progress Against Hunger and Malnutrition

Ending global hunger by 2030 is within reach. But whether hunger is gone for good will depend on the effectiveness of a globally coordinated response to climate change. Climate change is the sustainable development challenge of the century, and without a response commensurate to the challenge, we will surely see the reversal of decades of progress against poverty, hunger and malnutrition, maternal and child mortality, and other development goals included in the MDGs and SDGs.

Climate change is caused by excessive amounts of the greenhouse gases that blanket the earth's atmosphere and trap heat. The effects are visible in the increased frequency and severity of storms, floods, heat waves, and droughts. California's persistent drought, the worst on record, has been linked to climate change.[114] Climate scientists project that unless there are reductions in greenhouse gas emissions, these impacts will only get worse.[115]


Dominic Sansoni/World Bank

In Sri Lanka, solar panels are used for lighting village homes.

The formation of greenhouse gases is natural—the problem is that human activity has increased their levels enough to raise the temperature of the entire planet. The burning of fossil fuels since the dawn of the industrial age more than 250 years ago has added substantially to the amount of carbon dioxide (CO2) in the atmosphere. CO2 is not the most noxious of the greenhouse gases, but it is the primary reason the climate is changing so rapidly.[116] Unfortunately, economic growth is still driven mainly by energy produced from fossil fuels. As national economies continue to develop, the amount of carbon dioxide pouring into the atmosphere surges.

Humanity is fortunate that technological advances have made it possible to fuel economic growth with renewable sources of energy that do not contribute to climate change.[117] The issue now is forging a global partnership to invest in renewable energy sources and commit to using them—and to do so on a large enough scale to prevent further damage to Earth's climate. We have reached a critical juncture in global politics. Sustainable development—reducing poverty, ending hunger and malnutrition, educating everyone, and more—depends on nations' ability to contain and manage climate change. The damage already done cannot be undone, but the most affected communities can be supported in adapting and in developing strategies to increase their resilience in the future. Delaying the necessary investments in renewable energy, however, will only increase their ultimate price tag. The technological barriers to addressing climate change have been overcome—the biggest barrier remaining is political.

Box 3.2

THE ROLE OF DOMESTIC RESOURCE MOBILIZATION IN ACHIEVING DEVELOPMENT GOALS

by Steve Damiano

The scope and ambition of the Sustainable Development Goals (SDGs) will require developing countries to mobilize more domestic resources for development. At the Financing for Development (FFD) Conference in Addis Ababa, Ethiopia, in July 2015, developing countries committed to raising more of their own resources for development (often called "domestic resource mobilization" or DRM), and developed countries pledged to support them in this effort.

During the conference, the United States, the Netherlands, the United Kingdom, and Germany developed the Addis Tax Initiative, under which donor countries commit to doubling the amount of foreign assistance they devote to helping the governments of developing countries reform their tax systems and raise more tax revenue.[118] Donors also agreed to provide significant capacity building assistance for tax administration to countries that demonstrate good financial governance and commit to achieving the SDGs. Recipient countries agreed to use new revenues for public services to help meet SDG targets.

El Salvador's tax reforms led to a $160 million increase in annual spending on social programs, which in turn helped to reduce poverty.

Ultimately, eliminating poverty and hunger takes both economic growth and the development of strong social safety nets. But low tax revenues mean that many developing country governments cannot afford to establish basic public services. It's a vicious circle, since the weakness of public services in turn limits economic growth and stifles any nascent social contract between the state and citizens. Tax mobilization, on the other hand, can lead to institutional development and better governance, creating an economic environment that attracts foreign direct investment and encourages local businesses to invest their profits domestically.

Donors tend to support partner countries' pursuit of DRM where there are good governance environments and governments are committed to reform. The support primarily comes through technical assistance (TA) missions. A typical tax reform effort begins with either the International Monetary Fund (IMF) or a donor agency assessing a country's overall tax system. The IMF has the greater expertise in such a "tax diagnosis," and, accordingly, it is active in more than 120 countries.[119] During short-term TA missions, the IMF uses a tax diagnostic tool to assess the strengths and weaknesses of a particular system. Who is paying taxes and who is not paying? Many developing countries have an extremely high degree of inequality, so low tax revenues may be a sign that elites in the country pay little in taxes.

The U.S. government contributes funds for the IMF and multilateral banks (which include the World Bank, the African Development Bank, and the Inter-American Development

Bank). All are involved with one form or another of tax policy assistance to developing countries. Within the U.S. government, the U.S. Treasury's Office of Technical Assistance (OTA) Revenue and Policy Administration team has primary responsibility for helping countries improve their tax administration. The OTA team meets with a government's tax bureau officials to evaluate the climate for tax reform.[120] Before entering into an agreement to provide technical assistance, the OTA team seeks to verify that anti-corruption safeguards are in place and that tax officials will receive needed support from senior leadership. OTA then either provides a permanent adviser to work with the country's tax bureau or periodically sends a team to give support.

USAID reports that the government of El Salvador used development assistance funds to implement tax reforms that, between 2005 and 2010, enabled the collection of an additional $1.5 billion in tax revenues.[121] The $5.8 million invested in El Salvador's tax reforms led to a $160 million increase in annual spending on social programs, which in turn helped to reduce poverty.[122]

John Hogg/World Bank

Domestic resource mobilization is crucial to financing large-scale infrastructure projects.

Beginning with the Paris Declaration in 2005, donors have officially acknowledged that every country must fully own its development and needs to strengthen its institutions in order to do so. Over the next 15 years poverty will become increasingly concentrated in fragile states, where governments have limited capacity to carry out basic governance functions.[123] The U.S. government and other donors need to strike a balance between awarding the funding available for DRM to countries where it is most likely to succeed, and funding DRM in countries that are making the least progress toward achieving the MDGs and SDGs. If they ignore the latter, the world as a whole will be unlikely to achieve the SDGs.

Steve Damiano was a Crook Fellow with Bread for the World Institute in summer 2015. He recently earned dual master's degrees from the University of Texas at Austin in Global Policy Studies and Middle Eastern Studies.

Climate may be the quintessential example of a public good. Shared by everyone, owned by no one, and therefore most vulnerable to the "tragedy of the commons." But no country has the ability to wall itself off from climate change. Carbon burned in Shanghai contributes to drought in California. All bear the consequences, although not all bear them equally. The least developed countries are and will be affected most severely of all, while high-income countries have resources to build the infrastructure to adapt. The Green Climate Fund, established under the United Nations Framework Convention on Climate Change, seeks to raise $100 billion a year in additional development assistance by 2020 to help vulnerable developing countries adapt.[124] The additional $100 billion would be available, with some to spare, if developed countries lived up to their agreement, most recently in the SDGs and the MDGs but previously as well, to provide official development assistance up to 0.7 percent of their gross national income. The Obama administration committed the United States to its share of the Green Climate Fund, but Congress has yet to approve any funding for it.


Thomas Sennett/World Bank

Farmers plant rice in Bangladesh, one of the countries most threatened by climate change.

Even under today's best-case climate change scenarios, it will be a challenge to produce enough to feed everyone. The world population is expected to reach 9 billion by 2050, meaning that agricultural productivity will need to increase by 60 percent to meet population growth.[125] The agricultural sector itself accounts for roughly a fifth of global greenhouse gas emissions.[126] Supply shortages could have a direct effect on food prices and ultimately on food security. Producing enough food to feed everyone will depend primarily on innovation, more sustainable farming practices, and less waste of food.[127]

Low-income people in poor countries depend mostly on staple foods as their main source of calories and nutrients. One of climate change's many complications is that the nutritional content of many staple foods has been proven to decrease as carbon dioxide (CO2) levels rise. One study on wheat, rice, barley, and potatoes found a 10 to 14 percent reduction in protein.[128] In wheat, and to a lesser extent in rice, higher CO2 conditions have been shown to reduce levels of zinc and iron,[129] essential micronutrients for maternal and child health.[130]

In a review of 48 countries affected by climate-related disasters such as floods, droughts, and tropical storms, FAO estimated that the agricultural sector absorbed 25 percent of all losses and damage.[131] Agriculture employs the great majority of the workforce in low-income countries, so these are potentially catastrophic losses for large numbers of people who are least able to cope with them. More than 90 percent of the world's 570 million farms are managed by an individual or a family and rely predominately on family labor. Most are smaller than 2 hectares (4 acres).[132] Ensuring food security entails public policies that recognize and respond to the challenges faced by family farms.

Feed the Future, the U.S. government's main global food security program, provides technical assistance to smallholder farmers in some of the most vulnerable countries.

One of Feed the Future's six main areas of focus is climate-smart development, along with gender integration, improved nutrition, inclusive growth in the agriculture sector, engagement with the private sector, and research and capacity building.[133] These important focus areas can be mutually reinforcing. For example, women and girls suffer the majority of the damage to human health that climate change causes. During periods of climate-related food scarcity, they are more likely than men and boys to have compromised nutritional needs.[134] Thus, climate-smart development can be even smarter if it takes into account how gender norms interact with food insecurity and malnutrition.

U.S. development assistance was climate-smart before there was such a term. USAID and the National Science Foundation, for example, funded the development of an early warning system that has drastically reduced the damage from tropical storms and flooding in Bangladesh. The Climate Forecast Applications Network (CFAN) accurately predicted three major floods at least 10 days in advance in 2007 and 2008, allowing farm households to harvest crops, shelter animals, store clean water, and secure food ahead of time.[135] Peter Webster, one of the scientists at Georgia Tech who helped develop CFAN, writes that extending the network to the rest of South and East Asia would cost approximately $1 million per year while averting "billions of dollars of damage and protecting thousands of lives."[136]

In 2009, *The Lancet* published a report that stated unequivocally, "Climate change is the biggest global health threat of the 21st century."[137] The report came out six months before the annual United Nations Climate Change Conference. But there is little to suggest that the report had any influence on the negotiations at the conference, since governments did not agree on terms for substantive reductions in greenhouse gas emissions.

LWR/Brad LaBriola

Residents of one of the devastated communities in the Philippines prepare for clean-up efforts after Super Typhoon Haiyan.

The health impacts of climate change are often not well communicated to the public—or to policymakers. As a result, the climate change conversation is informed more by information on CO2 levels than by the numbers of children who will die from malnutrition. "Health puts a human face on what can sometimes seem to be a distant threat," write the editors of *The Lancet*. "Public concerns about the health effects of climate change, such as undernutrition and food insecurity, have the potential to accelerate political action in ways that attention to carbon dioxide emissions alone do not."[138]


Dominic Chavez/World Bank

A mother and daughter, Ebola survivors from Freetown, Sierra Leone, lost ten family members to the disease.

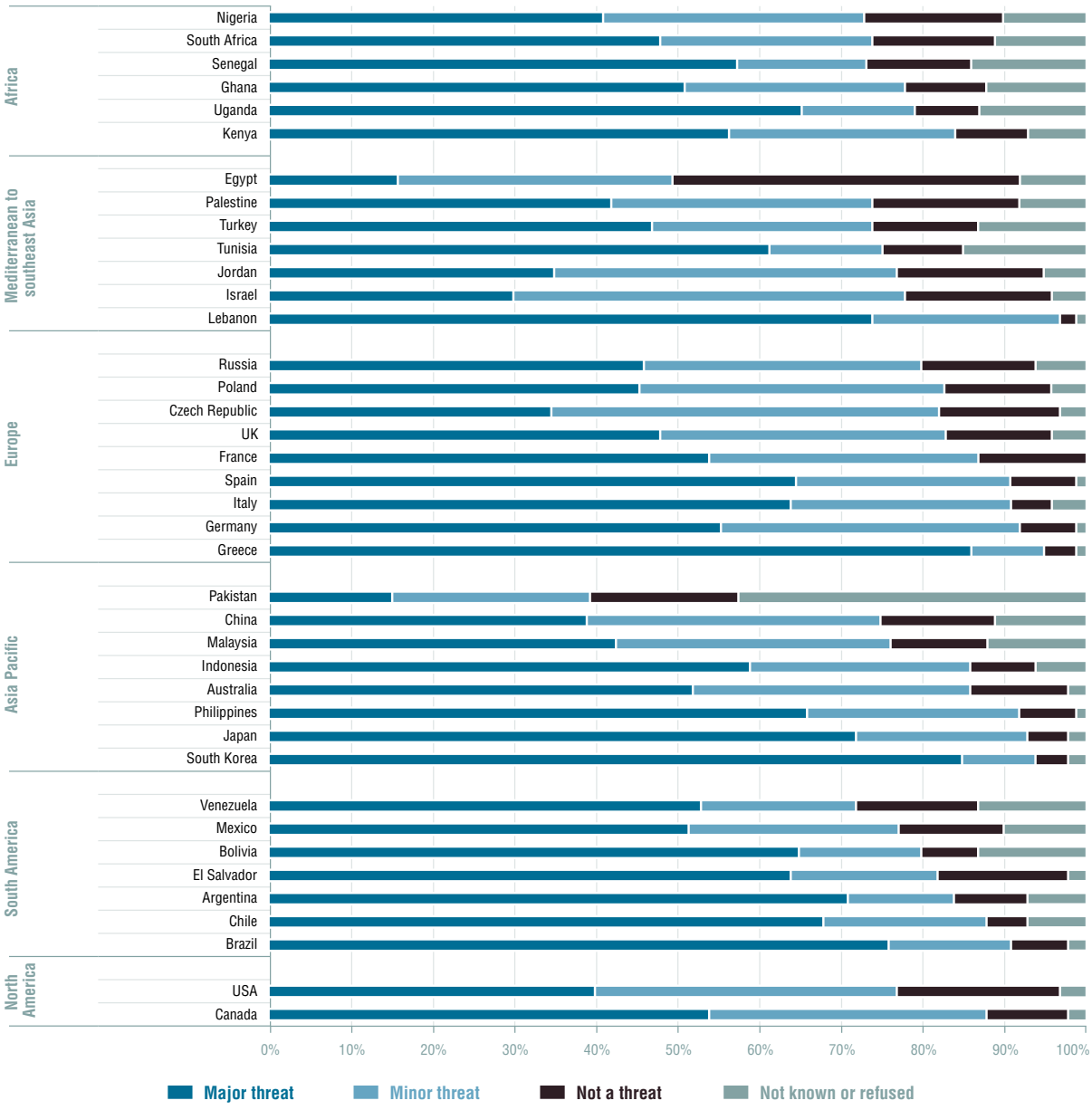
In 2015, *The Lancet* published a follow-up to its earlier report on climate change and global health, this time declaring, "Tackling climate change could be the greatest global health opportunity of the 21st century."[139] Framing climate change as an opportunity rather than a threat is more than a rhetorical hook. The 2015 *Lancet* report is a clarion call to colleagues in global health to speak more forcefully on the threat of climate change and to help educate policymakers and the public about the consequences of delayed action. "The best defense is the same one that will protect us from outbreaks of infectious disease, and the mounting burden of non-communicable diseases: strong, flexible, and resilient health systems," says WHO Director-General Margaret Chan.[140]

In many countries, the public is still divided over climate change and what needs to be done. In China and United States, the top CO2 emitters, only 40 percent of the population views climate change as a threat.[141] See Figure 3.9. But public pressure is required to move national governments to take bolder action on the problem. In December 2015, just weeks after the release of this Hunger Report, the latest UN conference on climate change convened in Paris, with pressure mounting for governments to act boldly. Until our protests are too loud for government leaders to ignore, we should not expect major breakthroughs in these or other international climate change negotiations. There are simply too many other priorities to preoccupy leaders when they return home, and there are simply too many other ways to spend political capital that offer a quicker return on investment.

In 2015, Pope Francis, the head of the Catholic Church, inserted himself into the global debate on climate change with the release of his second encyclical, *Laudato Si'*, on the environment. Addressed to everyone on Earth, not just the 1.2 billion Catholics, it is the first encyclical on the environment by any pope. In it, Francis bluntly equates destruction of the environment, including climate change, with injustices suffered by poor people: "We are faced not with two separate crises, one environmental and the other social, but rather with one complex crisis, which is both social and environmental. Strategies for a solution demand an integrated approach to combating poverty, restoring dignity to the excluded, and at the same time protecting nature."[142]

Hunger and poverty have not been a priority for the U.S. president and Congress for decades. As damage from climate change has mounted, the majority in Congress has refused to take action. Climate change has not been a compelling issue for most U.S. voters. Pope Francis just might help us achieve a shift in national priorities, so that our nation's elected leaders help to put the United States and the world on track toward the virtual end of hunger. Vigorous action to address climate change is an important aspect of what is needed to end hunger.

Figure 3.9 **Perceptions of the Threat of Climate Change, 2013**



Source: Nick Watts et al. (June 2015), *Health and climate change: policy response to protect public health*, The *Lancet* Commission on Health and Climate Change.

THE NUTRITION VISION OF THE *2030 AGENDA* FOR SUSTAINABLE DEVELOPMENT

by Jomo Kwame Sundaram, Food and Agriculture Organization of the United Nations

In late September 2015, more than 150 heads of state and government, accompanied by thousands of senior officials, world-renowned experts, leaders of civil society and the private sector gathered at the United Nations in New York for the largest summit in history. The summit outcome, which bears the title *Transforming our World: the 2030 Agenda for Sustainable Development*, is remarkable in many respects. It is the product of a consultative process led and owned by the member states themselves, unfolding across the globe in waves over the past three years, and actively engaging citizens as well as governments, small and large organizations, experts and non-experts from all walks of life.


Photo: ©FAO

The *2030 Agenda* builds on the scope and ambition of the Millennium Development Goals (MDGs). Drawing from the experience of the MDGs, member states have been unanimous in their conviction that sustainable development does not result from selecting among isolated problems and designing highly focused technical solutions. The leading insight behind the new Sustainable Development Goals is that sustainable development arises from recognizing that real world development is seldom confronted by a single problem for which there is a single solution, but rather proceeds by dealing with sets of interlinked problems for which creative, context-specific and people-centric solutions are required.

How this is all meant to work can be seen through the approach that is taken to malnutrition in the *2030 Agenda*. Those who look for specific mentions of nutrition or malnutrition will almost certainly be disappointed. But they make a fundamental mistake in understanding how the new agenda conceives of the development process and how much of the new agenda is related to ending malnutrition.

How does *Agenda 2030* pose the problem of malnutrition? First, and most explicitly, in Sustainable Development Goal 2: "End hunger, achieve food security and improved nutrition and promote sustainable agriculture" and in its multidimensional Target 2.3: "By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons." Target 3.4 implicitly refers to obesity-related malnutrition and its impacts: "By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being."

And yet this is only the beginning. Much more can be added through specific targets, inter alia, on poverty eradication, women's empowerment, improved sanitation, maternal health, access to water, and reductions of food loss and waste. As the UN Secretary-General has pointed out in his report to member states, there are at least 6 goals and 18 targets in the *2030 Agenda* that are materially related to nutrition.

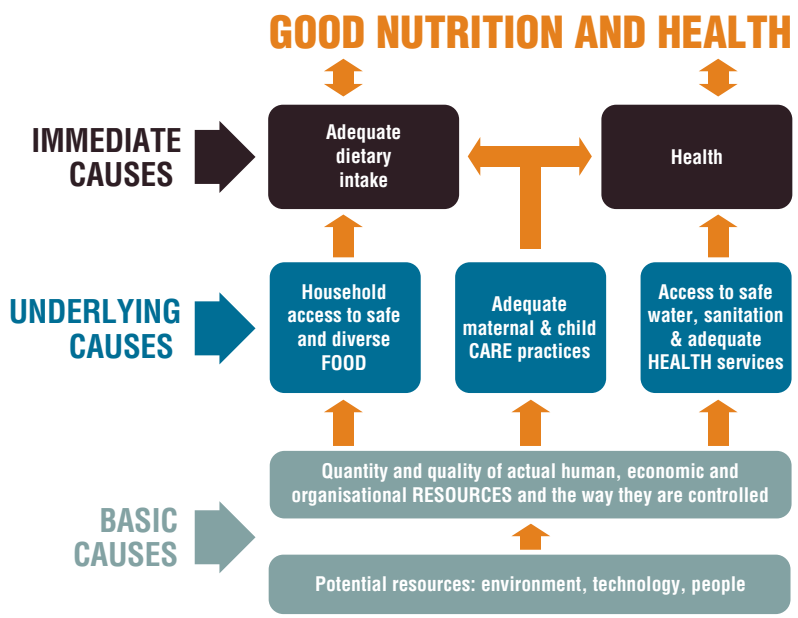
Malnutrition will not be ended without addressing the variety of social, economic, environmental, and cultural factors that contribute to it. An updated UNICEF conceptual framework, depicted in Figure 3.10, makes a critical distinction between "basic," "underlying," and "immediate" causes of malnutrition and premature death.

- At the **basic** level, poverty, inequality, discrimination against women, and the excluded voices of children, the elderly, and other social groups in decision-making processes are fundamental impediments to lasting solutions.
- At the **intermediate** level, the emphasis is on the institutional structures and systems—especially systems for health and food, water, and sanitation, as well as deteriorating environmental conditions—that result from the basic causes, but also institutionalize the underlying poverty and inequalities.
- Finally, at the **immediate** level are the proximate causes—chiefly the lack of access to adequate nutrition or dietary intake and unavailability of appropriate health care: mutually reinforcing causes of poor nutritional status for individuals, households, and disadvantaged and vulnerable social groups.

Who will pull all of this together, and how will they do it? The *2030 Agenda* does not specify. That responsibility is left to the member states and their many partners. But behind the agenda stands a new global structure for monitoring and evaluation, shared learning and capacity building, voluntary reporting and mutual accountability among partners. Embedded in this structure are all the institutions of the UN system that now not only have to meet new expectations, but are challenged to play a new role as enablers and facilitators of broad societal engagement to support government-led and owned political action to end malnutrition in all its forms.

Jomo Kwame Sundaram is Assistant Director-General and Coordinator for Economic and Social Development with the Food and Agriculture Organization (FAO) of the United Nations.

Figure 3.10 **Basic, Underlying and Immediate Causes of Malnutrition**



Source: UNICEF

A TRANSFORMATIONAL AGENDA

by Asma Lateef, Bread for the World Institute

As the 2016 Hunger Report has so clearly demonstrated, nutrition and health are inextricably linked. Good nutrition throughout the lifecycle, and especially in early childhood, is foundational for health and development. Conversely, hunger and the poor health resulting from undernutrition limit a person's earning potential, perpetuating poverty and undermining her and her country's development.

Figure C.1 **The Sustainable Development Goals**

Source: Adapted from United Nations, 2015

Food security—in other words, access to an adequate supply of diverse, nutritious foods—is an essential determinant of health. But food security and health have been confined to separate policy siloes. Fortunately that is beginning to change.

The adoption of the Sustainable Development Goals (SDGs) in September 2015 appears to signal a new era in policy integration. The SDGs are an interdependent framework. Durable progress on one goal will depend on achieving progress on all the other goals. See Figure C.1.

If the question of what do people need to survive and thrive drove national and global priorities—the world would be a very different place. The 2030 sustainable development agenda is an opportunity to put that question at the heart of policymaking. A transformational agenda must recognize that human development is multifaceted, as are the biggest challenges facing humanity from climate change to armed conflict to discrimination in all forms.

As advocates, our job is to build the political will to end hunger and poverty in a way that also takes care of the natural resources we so depend on.

The adoption of the SDGs at the United Nations General Assembly was truly a monumental event, the realization of a transparent and democratic process that lasted for more than three years. The goals were negotiated by all countries with input from ordinary people on every continent. They are inclusive and universal—they aim to leave no one behind and apply to all countries.

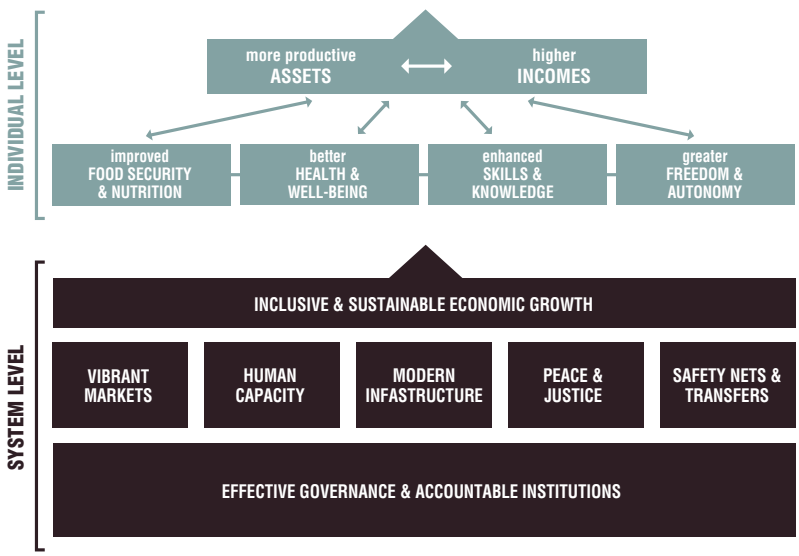
"In these Goals and targets, we are setting out a supremely ambitious and transformational vision. We envisage a world free of poverty, hunger, disease and want, where all life can thrive. We envisage a world free of fear and violence. A world with universal literacy. A world

with equitable and universal access to quality education at all levels, to health care and social protection, where physical, mental and social well-being are assured. A world where we reaffirm our commitments regarding the human right to safe drinking water and sanitation and where there is improved hygiene; and where food is sufficient, safe, affordable and nutritious. A world where human habitats are safe, resilient and sustainable and where there is universal access to affordable, reliable and sustainable energy."[1]

Much like the Millennium Development Goals (MDGs), the SDGs are time bound and measurable, expiring in 2030. Unlike the MDGs, they include targets to end malnutrition in all its forms, recognizing that all countries are affected by some form of malnutrition and that many are affected by both undernutrition and obesity.

As in other countries, the United States will be developing plans to achieve the SDGs domestically. In the 2016 Hunger Report, we call on the U.S. government to engage its domestic civil society partners who are working to address the many social determinants of hunger and health in communities across the nation. Achieving progress will depend on leaders rising to the challenge everywhere, so the federal government will need to engage state and local leaders.

Figure C.2 **Diagram of USAID's Conceptual Framework for Extreme Poverty Reduction**



Source: USAID

The U.S. government will also be looking afresh at its international development assistance programs. In a report released just days before the SDGs were adopted, the U.S. Agency for International Development unveiled a theory of change to end extreme poverty by 2030.[2] The theory reflects a multidimensional understanding of poverty. See Figure C.2.

We are the generation that could see the end of hunger and poverty. The SDGs provide a bold and ambitious framework that would transform the world we live in for generations to come. It is a difficult challenge, but it is not impossible. Countries and communities around the world have made tremendous progress against poverty and other hardships. A key ingredient for success has been political leadership. As advocates, our job is to build the political will to end hunger and poverty in a way that also takes care of the natural resources we so depend on.

Asma Lateef is the director of Bread for the World Institute.

LEADER'S RESOURCE

If we asked most Christians to list what the gospel stories about Jesus talk about, it wouldn't be long before the words "healing" and "food" made the list. Jesus constantly healed people, physically and spiritually. When they were hungry, on hillsides or at table, he fed them. At the center of Jesus' ministry were two essential elements of human well-being: health and sustenance.

Those matters—sustenance and health—that are close to Jesus' heart are at the core of Bread for the World Institute's 2016 Hunger Report: *The Nourishing Effect: Ending Hunger, Improving Health, Reducing Inequality.* The report offers information, insight and challenges to help people of faith learn about and act on these key issues for our nation and world.

This Christian Study Guide offers plans for four sessions in which Christians can study the report together. We hope those who do so will ask the Holy Spirit for guidance as they share their hopes, concerns, and responses to the issues and solutions the report describes. Session leaders do not need to be experts on the report's content to guide the discussion.

The Nourishing Effect is filled with evocative stories, detailed analysis, helpful graphics, and key statistics. The report is online at hungerreport.org along with additional resources that will enrich your conversation, but are not required. This guide encourages participants to read short sections of the Hunger Report during the sessions.

The 2016 Christian Study Guide includes four small-group sessions rooted in the content of *The Nourishing Effect.* Session 1 introduces the Report's overall theme and the other three sessions develop specific topics that the Hunger Report emphasizes. The four sessions do not coincide with the four chapters in the Hunger Report and do not cover all the issues in the report. If your group cannot do all four sessions, we recommend that you do Session 1 and then as many others as you can.

Each session includes:

- The Word: Biblical reflection materials with some questions to consider.
- The Issues**:** A summary of themes in the Hunger Report with suggested reflection questions.
- The Application**:** Activities to engage group members in analyzing current realities, using content from the Hunger Report, hungerreport.org, and their lives and community experiences.

MILESTONES IN RELIGION, SCIENCE, AND MEDICINE[1]

2000–1000 B.C.

In Old Testament times, the sick are examined and kept under careful observation by the priest. "For I am the Lord, who heals you." (Exodus 15: 26, NIV)

In early Hebraic times, the Old Testament suggests it is God who afflicts persons with "madness, blindness and confusion of mind" because of their sins. (Deuteronomy 28:28, NIV)

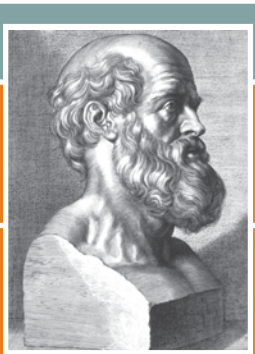
[1] With the exception of the entry for 2000–2015, all other the milestones listed are from Harold George Koenig's 2001 book, *The Handbook of Religion and Health,* published by Oxford University Press.

Planning your Study

As discussion leader, your role is to guide the process, in one or more sessions, as the group reads and discusses parts of the report. You will be learning with the others; you are not expected to be an expert on the issues covered in the report. But your attention to process is important, so here are some key steps for leaders to take:


Joseph Molieri/Bread for the World

- Review Sessions 1-4 and refer to the 2016 Hunger Report for more details.
- Consider your own goals for the class and feel free to adapt the guide to enhance the experience for your group. The guide is designed for Christians of many theological and political viewpoints.
- Develop your schedule—select one or all of the sessions for your group.
- Confirm the dates, times, and location of your meeting and invite participation.
- Bring a Bible to each session. Encourage participants to bring additional translations to enrich the biblical reflection.
- Bring session materials for each participant and have newsprint, a flip-chart, or a whiteboard available for activities and discussions. Consider giving participants the session outlines below, or your revision of them, to help them follow along. Each session includes an activity requiring access to the Internet. If your group will not have Internet access, have someone print out relevant pages or data should you choose to do that activity.
- Plan for each session to include prayer time, especially remembering those most affected by the topics that you discuss. Sessions as outlined in this guide may take an



Hippocrates (460–357 B.C.), known as the "father of modern medicine," describes illness in terms of four bodily fluids (blood, phlegm, yellow bile, and black bile).

500–300 B.C.

In this period, an understanding emerges that physical and mental illnesses have natural causes, yet are affected by Divine forces.

hour to 90 minutes each, but may be modified to meet your scheduling needs. After familiarizing yourself with the outline of the sessions, adapt the activities to best serve the needs of your group. We include more options for activities than you may want to try and accomplish in one session.

- After the last session, please fill out the online evaluative survey at **www.hungerreport.org/survey.**

Group Expectations

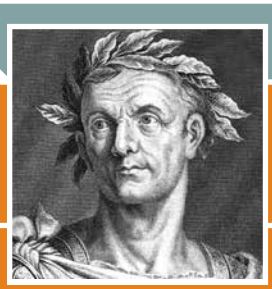
If you haven't led an adult learning group before or it has been a while, here are some suggestions:

- Adults want to know what they're going to discuss. Be clear and focused about your goals and your schedule.
- As you begin, help participants make connections with each other—through introductions and a short response to a question like "What do you hope for from our time together?" Including time for prayer at each session also helps build community.
- Encourage all participants both to speak and to listen. Allow each person who wants to speak to have the time to do so.
- Encourage "I" statements (I feel..., I wonder..., etc.) instead of "you" or "they" statements (you don't know..., they always... etc.).
- Adults bring lots of experience to the conversation. Appreciate their need to integrate new material with what they already know, but also keep the conversation focused.
- At the start of each session, invite participants to write down one question they would like to have answered. Before the closing prayer, invite participants to return to the question and write a response—new information or perhaps new questions.

Facilitating discussion

The study guide includes a number of questions for discussion. To stimulate full participation, consider using one or more of these techniques:

- Divide the group into smaller groups and ask each group to discuss and report on one assigned question. Give them a set time and then have them report to the larger group. Ask the individuals in the larger group to comment on (add to or question) what they're hearing.



MILESTONES IN RELIGION, SCIENCE, AND MEDICINE

In a time of famine, Julius Caesar (100 B.C.–44 B.C.) orders the banishment of all foreigners from Rome, but exempts physicians and teachers.

50 B.C.–0

After he is cured of a rheumatic condition by his physician, Roman emperor Augustus (63 B.C.–14 A.D.) grants all physicians exemption from taxes.

- Ask each person to consider the question at hand, and write down a word, phrase, or other response in 1-2 minutes. Separate the group into pairs and have them share their responses. Allow 3-4 minutes. Then pair up the two-person teams to create groups of four to broaden the discussion. After another 3-4 minutes, invite participants to say what they heard. What key words were used? Is there shared interest in one particular issue?
- Divide the group into three- and four-person teams. Place poster paper on the walls, one sheet for each question. Give the teams 8-10 minutes to discuss the assigned questions and post their "answers" on the poster paper. Give a 2-minute warning. At the end of the allotted time, review the responses, noting similarities, themes, concerns, or ideas.

For more information, interactive stories, data, or to download full chapters of the Hunger Report, see **www.hungerreport.org**

Additional Resources

For more social policy resources on the Hunger Report themes, search the website of your denomination or national group. Throughout the year, hungerreport.org is updated with new stories and statistics you can use. Bread for the World's website, bread.org, has even more resources, including current advocacy campaign materials at www.bread.org/ol. The Alliance to End Hunger, an organization affiliated with Bread for the World and Bread for the World Institute, has created an Advocacy Playbook that enables organizations and volunteers involved in hunger-related service activities to be effective advocates with political leaders to end hunger. See www.alliancetoendhunger.org/advocacy-playbook/. Another Bread publication you may find helpful is the *Biblical Basis for Advocacy to End Hunger,* which can be downloaded or ordered at www.bread.org/library/biblical-basis-advocacy-end-hunger.

Send us your evaluation and suggestions

After completing your study, please tell us how it went and give us suggestions for future Christian Study Guides. A handy evaluative survey is at www.hungerreport.org/survey, or simply email your thoughts to **institute@bread.org.**

Jesus focuses on the meaning of suffering and the healing of the whole person; little distinction is made between healing the body, mind, and spirit.

0–100

Early Christians believe that sickness, whether or not caused by sin, can be healed through prayer.

SESSION 1: HEALTH AND HUNGER—THE VITAL CONNECTIONS

The Word

Read Mark 5:21-24a; 35-43 and Luke 8:40-42a; 49-56

In Scripture, many people are freed from illnesses—physical, psychological, and spiritual. But how this healing takes place varies from story to story. Jesus may offer a caring touch or a bold command. He may apply mud to be washed off or simple words that affirm the person's strong faith. Whatever the means, the results are often miraculous, both to the person cured and to bystanders, family members, and religious officials.

The passages selected for this session are about how Jesus healed Jairus's daughter. The separate accounts by Mark and Luke have elements common to other biblical healing stories. Jesus receives an urgent plea from a parent and responds reassuringly. Events intervene that divert Jesus from the task, heightening the suspense. When Jesus arrives he finds a community lamenting the apparent death of the sick person, and skeptical that his presence can make a difference. Their despair disappears as Jesus miraculously revives the deceased.

These particular stories of Jairus's daughter offer another key insight. As the 12-year old gets up and walks, Jesus directs those around her to feed her. The moment of healing is accomplished—but to restore this child fully, and to sustain her, the community must provide life-giving food. Jesus sees that this child must be nourished back to health.

In Genesis, God's creative impulse provides enough food for all humanity to enjoy life's fullness. But nowadays, in our distracted, fearful lives, we need reminders of our responsibility to distribute, share, and consume food. Jesus became flesh and lived among us as the Bread of Life, a living sign of the Reign of God. Food is at the core of that kingdom's common life, as it was at creation. This is good news for everyone, including those who feel left out. The Beatitudes (Matthew 5:3) say: "Blessed are the poor in spirit, for theirs is the kingdom of heaven." In that promised kingdom, hunger is no more. May it be so on earth as well.

MILESTONES IN RELIGION, SCIENCE, AND MEDICINE

100–300

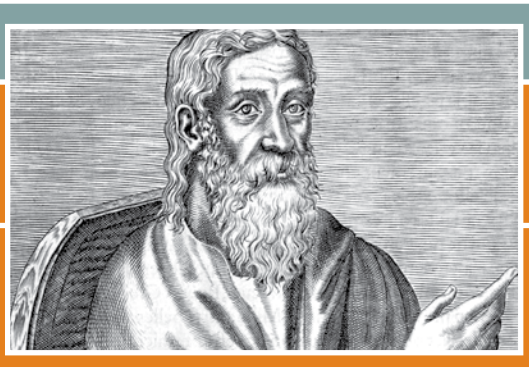
Galen (c. 131–201), a Greek physician, publishes medical treatises that will form the basis of Western medicine for more than a thousand years later, until the beginning of the Renaissance.

- Why do you think Jesus emphasized the need to feed Jairus's daughter? What was at stake?
- The Hebrew word s*halom* embraces "peace" as a deep, wide, and abiding wholeness, not just the absence of conflict. In what ways does this story remind us of the broad, community-based nature of *shalom*?

The Issues


USDA Photo by Lance Cheung

As these healing stories remind us, health and hunger are not distinct aspects of human life. The 2016 Hunger Report shows that they are deeply connected. We see hunger when we stop by a food pantry to pick up food for our families or to volunteer our services. Hunger is a daily reality when we use SNAP (formerly Food Stamp) benefits to buy food in our local grocery, or when a mother with young children in front of us in the checkout line uses WIC to buy cereal, fruit, milk, and eggs. Beyond food pantries and grocery stores, we see hunger's effects in hospitals across our nation among children and adults who suffer illnesses and medical conditions associated with poor nutrition. Hunger wreaks havoc in schools, among children eager to learn but without the capacity to thrive academically. Teachers know that stress, poverty, and hunger make it harder for children to get the education they need to reach their potential. Hunger reduces the productivity of our workforce and undermines our national economic security.



100–300

Clement of Alexandria (150–215), one of the early church fathers, argues that health by medicine has its origin in and its existence from God as well as resulting from human cooperation.

How much and what types of food we eat help determine whether we are healthy or not (see www.healthypeople.gov). But other factors—where we are born, live, grow up, and interact with others—affect our overall quality of life and well-being. Estimates are that these broader factors (social, environmental and behavioral) account for 60 percent of health outcomes. Another 20 percent is based on genetics, and only 20 percent on medical care (See Figure i.8, Introduction, page 25). Improving access to quality housing and education, safe neighborhoods, nutritious food, and clean air and water promote positive health outcomes for individuals and whole communities.

If we asked most Christians to list what the gospel stories about Jesus talk about, it wouldn't be long before the words "healing" and "food" made the list. Jesus constantly healed people, physically and spiritually. When they were hungry, on hillsides or at table, he fed them.

Often, people who lack access to health care are the ones who need it most (Introduction, page 23). Unequal access to health care reflects deeper social inequities. People of color and low-income communities are more likely to experience diabetes, hypertension, obesity, and exposure to toxins, such as lead paint—especially dangerous for children. Some communities have concluded that changing those realities in a lasting way takes more than a few well-targeted programs. It requires a whole new way of thinking about a sustainable future and the health-hunger connections (See the story of Williamson, WV on pages 94-95 of Chapter 2).

The Hunger Report urges citizens to both understand how hunger and health intersect and to act to improve health outcomes. That includes advocating for useful public policy changes. The healthcare sector itself can have a strong voice in ending hunger. Health professionals understand the connections and often have powerful political clout in their communities. ProMedica in Toledo, Ohio, is a healthcare system that works actively to end hunger (see Chapter 2, page 101, and see "Hunger as a Health Issue" at ProMedica's web site, https://www.promedica.org/Pages/service-to-the-community/default.aspx#hunger). At the same time, anti-hunger agencies can be vital partners in the healthcare delivery system, particularly in providing more nutritious and affordable food. Read about the Oregon Food Bank on pages 36-37 of the Introduction.

MILESTONES IN RELIGION, SCIENCE, AND MEDICINE

300–500

Eastern Orthodox Christians, at the insistence of St. Basil, Bishop of Caesar (329–379), establish the first great hospital in Asia Minor.

Saint Augustine of Hippo (354–430) presents a perspective on secular medicine that is positive, and like many other church leaders, he encourages Christians to care for the sick.

Medical care alone cannot shoulder the burden of keeping people healthy. Once we recognize the complex nature of what it takes to be healthy, together we can make things better in all sectors.

- Have you or someone you know experienced a health challenge in which the addition of quality food played a role in improving the health outcome? In what way?
- Before starting this study, what ideas did you have about the connections between hunger and health? What do you hope to learn from this Hunger Report?

Activities

- Read about Sustainable Willliamson in Mingo County, WV, on pages 94-95 of Chapter 2. How does this community's approach to improving health and reducing hunger differ from other communities? Could your community benefit from a more holistic, integrated approach to these issues? Invite someone from local government and someone in health care to address some of these questions with you.
- In small groups, discuss what can be done to address income inequalities that affect people of color in our nation more than other groups? How does income inequality in developing countries affect hundreds of millions of people in those nations? How could better education improve incomes over a lifetime?
- Examine the two maps on page 17 of the Introduction. Do you find anything surprising or interesting about the state and regional differences in food insecurity and obesity levels? What links can you see between the two issues? The Hunger Report says, "Conditions that are common in food insecure households—episodic food shortages, reliance on high energy-dense foods to stretch food dollars, stress and depression—are all risk factors for weight gain." (Introduction, page 19) What other factors might connect food insecurity with obesity?

For suggestions on how you can translate your group's knowledge and energy into concrete forms of advocacy, see www.bread.org.

Between fifth and tenth centuries, the practice of medicine is handed down from master to pupil.

500–1200

By the twelfth century, medicine is taught in medical schools and as part of the education of the clergy.

SESSION 2: HONORING VOICES, EMBRACING CHANGE

The Word

Read Mark 10:46-52

In Mark's gospel, when Jesus meets Bartimaeus, a transformation occurs. But it is different from other healing passages in intriguing ways. At first, the surrounding crowd tries to stop Bartimaeus from attracting Jesus' attention and concern. The bystanders don't welcome his initial cry for help; instead they try to silence him. Bartimaeus' status—blind and living beyond the city gates—marks him as someone outside the acceptable realm in the view of more privileged society. But see what happens when he cries out again and Jesus responds favorably. Jesus' welcoming attitude begins not only Bartimaeus' transformation, but the community's as well. Jesus makes the crowd co-creators in healing—"call him," Jesus says, and their cooperation enables Bartimaeus to rise and come close. Then something astounding happens. Jesus asks what he can do for Bartimaeus—simple, direct, inviting. Jesus makes no assumption about why Bartimaeus has cried out for mercy, despite his obvious blindness (would we ask that same question, or jump to conclusions?). Instead, Jesus invites him into a conversation to identify his pain, to point to the healing he needs, leaving open the chance that his blindness is not the barrier from which Bartimaeus seeks relief.

Implicitly, Jesus invites the entire crowd—and you and me—to address the same question about our own health. Honestly, what needs healing in us? It may not be the obvious thing that a surface examination, or even extensive medical tests, might lead a doctor to identify.

The gospel story ends with Bartimaeus following Jesus on the way—the dangerous path to Jerusalem and the cross. Healing is not an end in itself, but a means to carry out a call, to remove barriers preventing us from offering the fullness of our gifts for the world's greatest needs. It all starts with Jesus' simple question: "What do you want me to do for you?"

- How does society today—like the crowd initially in this story—stifle the voices of those on the margins? What impact does that have on a community's well-being? Each person is God's beloved creation, invited to experience a close relationship with Jesus and other people. Does that affect how we hear and affirm others' voices, and confidently lift up our own? Read Matthew

MILESTONES IN RELIGION, SCIENCE, AND MEDICINE

1200–1400

Because some clergy begin to spend more time treating sick persons than on ecclesiastical duties, the church proclaims edicts that strongly encourage clergy to focus on theological matters, not medicine or surgery.

5:11-12. For those who are reviled and endure persecution and evil, how might their reward be carried out now—in the taste of "heaven" we seek to create on earth?

- Think about Jesus' invitation for Bartimaeus to explain what help he's seeking. What has been your experience with medical professionals in terms of their graciousness and willingness to listen to you? Elsewhere in Scripture Jesus rejects the then-common notion that illness is related to sin (John 9). Jesus instead makes grace, not judgment, the basis for health and wholeness. Is Jesus' question to Bartimaeus in Mark's gospel related to that saving grace?


Meals on Wheels America

The Issues

The Hunger Report says "In the United States, the issues of hunger and health have been seen as two separate and distinct challenges." (Introduction, page 11). Food insecurity has been widespread in our country for years. Yet many health professionals and the general public have not always clearly connected the dots between the related concerns of hunger and health.

The report explores these hunger-health links, and through stories offers a more complete and balanced picture of how people live their lives. We learn deeper realities—for example, that widespread chronic illnesses are more common among low-income communities and people of color than among other groups (Introduction, page 23). Those of us who live and worship in communities experiencing these impacts are already facing these realities and seeking empowering solutions that make sense in our own settings. But lasting solutions work best when wider communities embrace these challenges as a shared responsibility. It is important to invite members of the community to share their stories and to listen intently. Engaging people in the community takes time and dedication to develop strong, authentic relationships that lead to openness and truth. In this study guide session, we reflect on one

1200–1400

The Franciscan monk Bartholomaeus, a professor of theology, writes the *Encyclopedia of Batholomaeus* (1203–1272), which discusses mental illness in terms of natural rather than supernatural causes.

aspect of this journey: the importance of asking the right hunger-related questions and gathering answers from medical patients as keys to ending hunger and improving health. Those questions resonate with the way Jesus welcomed Bartimaeus's honest response that described his own wish for healing.

Some healthcare providers now routinely ask patients questions to assess their food security status. With that information, providers can partner with food service groups to help their patients become healthy.

- In Colorado, Kaiser Permanente works with Hunger Free Colorado, a statewide advocacy and outreach organization, to address food insecurity and diet-related diseases. Kaiser Permanente health providers refer patients at risk of hunger to Hunger Free Colorado, which links them to federal nutrition programs and charitable food programs they might qualify for, and helps patients to apply for these programs (Chapter 2, page 75).
- An Oregon Food Bank employee meets with staff at clinics and hospitals, helping them develop plans to administer a two-question food security screen and enter the results in a patient's electronic medical records. (Introduction, pages 36-37).
- At ProMedica, a Toledo, Ohio-based health system, patients admitted to all its network hospitals are administered a two-question food security screen validated by Children's HealthWatch. Patients at risk of food insecurity receive an emergency food package and community resource information when they leave the hospital (Chapter 2, page 102).

Public policy supports these approaches. The Affordable Care Act (ACA) of 2010 has been politically controversial, and you may have disagreements in your group about that law's overall impact and effectiveness. But invite people, regardless of their wider views on the ACA, to consider one part of that law. The ACA encourages non-profit hospitals to focus more on preventing illnesses, reducing patient readmissions, addressing broader societal influences on health, and developing community partnerships, rather than simply treating illness by prescribing more medical care (see Chapter 2, pages 75-77). The ACA urges hospitals to pay attention to community benefits they can provide, including ensuring adequate nutrition. More and more, healthcare providers look for ways to deal with hunger up front, encourage better eating habits, and offering access to quality food to improve health. What do people in your group think about those approaches?

There are multiple reasons for chronic health challenges. Early childhood is an especially vulnerable time, when deficits have lifelong implications (see Chapter 1, pages 45-50). The same chapter (pages 52-54) connects wider social factors—including abuse, violence, mental health problems, depression, the stress of poverty, and disabilities—to long-term health conditions. Consider the complexity of hunger, and discuss the opportunities you've learned

MILESTONES IN RELIGION, SCIENCE, AND MEDICINE

1400–1600

With the advent of the Renaissance, the split between religion and science widens and the practice of medicine becomes more of a secular discipline.

John Calvin (1509–1564) denies any direct miraculous power from the sacraments or the act of laying on of hands.

from reading the Hunger Report about how to address hunger as a health issue.

- Review Figure 2.6, "The Fruit and Vegetable Prescription Program." Then have half the class read and discuss pages 92-96 in Chapter 2 concerning Wholesome Wave's fruit and vegetable prescription program. Have half the group do the same with the article "'Food is Medicine' in Navajo Nation" (Chapter 2, pages 106-107). These programs target children, pregnant women, and others with health risks to provide them healthy food, which also benefits local farmers. What advantages are there in these programs, and what challenges do you see?
- Assign small groups to read some examples in the report of ways hospitals are evaluating and addressing hunger concerns, such as Boston Hospital (Chapter 1, pages 48-50) and home-visitation programs (Chapter 1, pages 45-47). What aspects of these examples seem the most viable and effective to you? What might be the most adaptable to your own area?

Activities

- Have class members contact local hospitals and clinics. Find out if they do food insecurity screening for incoming patients, and if so what they do with the information. Do they partner with local food banks or pantries for referrals, or is there a fruit and vegetable prescription program in your area, similar to Wholesome Wave's or ProMedica's (see Chapter 2)? If the hospital or clinic is not currently screening for food security, consider ways to advocate that they do so.
- Invite speakers from a local food pantry or food bank and from a local healthcare provider to have a dialogue about the ways their missions intersect. Find out what currently is being done to connect hunger and health, and share your insights from studying the Hunger Report. Think together about possible new approaches to improve health and nutrition in your area.
- Read Chapter 1, pages 42-45, and examine Figure 1.1 on page 42. You can also view, share via social media, and print copies of this infographic online at www.hungerreport.org/infographics. Young children who are at risk get lifelong benefits from significant interventions during that early, vulnerable period of life. In your experience, what are the most effective activities and programs for children and youth that have made a positive difference on their health and well-being? Why do you think more people don't ask for help during this critical phase of life? What gets in the way?

For suggestions on how you can translate your group's knowledge and energy into concrete forms of advocacy, see www.bread.org.

The sisters of Charity of St. Vincent de Paul organize Catholic nuns to serve both religious and secular hospitals.

1600–1800

The Wesleyan-Methodist tradition begins in England, and founder John Wesley (1703–1791) writes extensively on health topics, including his most famous work on the subject, *Primitive Physick.*

SESSION 3: THE WAY FORWARD: IT TAKES A COMMUNITY

The Word

Read Mark 6:7-13; 30-44, and Mark 2:1-12

Jesus sends his disciples out two-by-two with only a few essential resources. They preach, cast out demons, and cure those who are sick. When the disciples come back together, they're worn out, undernourished, and stressed. So Jesus—the good personnel manager and shepherd—invites them to a quiet, restful place. But crowds spot them and interrupt their journey. Jesus—again the shepherd to a larger flock—teaches the crowd. Time passes, people are hungry, and the event we know as the "Feeding of the 5,000" occurs. A story that begins with a small community of exhausted, hungry disciples—who work so hard they have no time to eat—becomes a banquet-like moment for the larger, gathered faith community. We cannot attend to our own intimate health and hunger needs without compassionately and faithfully embracing the broader hunger realities in communities beyond our own family. We cannot take bread and cup in our own faith community's Eucharist without sensing the universal offering of Christ's body and blood to a yearning world.

Some of Jesus' healing stories in Scripture are direct and personal, involving close contact between him and the person needing help. But other stories tell about community creativity and boldness, as in Mark 2:1-12. Bringing a paralyzed man to Jesus for healing, some compassionate people find crowds blocking the way forward. So they decide to break open (quite literally) established structures, show faith and ingenuity in their mission, and gain their friend's restoration.

In today's world, networks of people are part of healthcare systems—not only professionals, but also friends, family, volunteers, farmers, and merchants. Together communities can show vision, hope, and creativity in devising strategies for wholeness. As the Beatitudes remind us, "Blessed are those who hunger and thirst for righteousness, for they will be filled" (Matthew 5:6).

- Recall some people who have helped you when you have had health problems or experienced hunger? How have they partnered to improve your situation?
- Think of creative things going on in your community around health care

MILESTONES IN RELIGION, SCIENCE, AND MEDICINE

1800–1850

The American social reformer Dorothea Dix (1802–1887), a former Methodist turned Unitarian who herself suffers from depression, begins in the 1840s to fight politically for the humane care of poor people suffering from mental illness.

and hunger. What does your church or group do to address those related concerns? Have you found ecumenical responses to be most effective? In what ways and why? What are the biblical roots for faith communities to respond in this way? How does the example of church engagement in Macon County, Georgia inform your response? (Chapter 2, pages 88-89) Are parish nurses a part of church life in your area (see Chapter 1, page 51)?


Joseph Molieri/Bread for the World

The Issues

Scripture passages for this session give examples of energetic, creative partnerships that address hunger and health issues in Jesus' time. In our day, as we saw in Session 2 of this Christian Study Guide, partnerships have effectively addressed the health implications of food insecurity and other life course factors ("life course" is defined in Chapter 1, page 41). We expect that medical care will support healthy outcomes, but it cannot bear the burden alone. Session 2 begins to explore some innovative ways healthcare and food providers are combining resources. That session also notes that The Affordable Care Act (ACA) encourages these solutions. (If the ACA is controversial in your group, see Session 2 for helpful suggestions.) Now, in Session 3, we highlight additional approaches that connect these issues.

Doctors traditionally write prescriptions, usually for drugs or other medications. Yet for years some doctors have realized that a high quality, targeted diet can have a therapeutic effect in combatting particular diseases. So 50 years ago, in Bolivar County, Mississippi, Dr. Jack Geiger began writing prescriptions for specific foods for his patients (Introduction, page 32). But he, and other doctors since, found that health insurance systems and

1800–1850

Two Christian doctors, Peter Parker and David Livingstone, ignite a medical-missionary movement which progresses to involve nearly all major religious denominations and continues to this day.

government medical programs do not routinely reimburse for those costs. That makes food prescription programs like Wholesome Wave's Fruit and Vegetable Rx program at Harlem Hospital Center and Lincoln Medical and Mental Health Center in New York City helpful as test cases. (Chapter 2, page 93).

The Hunger Report describes many innovative programs. Invite the class, perhaps in small groups, to explore several from the list below and compare ideas about them. You do not need to discuss all six.

- The Oregon Food Bank works closely with hospital and clinics, encouraging them to gather food insecurity information from patients and then, with help from nursing students, link the patients to available food sources (Introduction, pages 36-37).
- Bright Beginnings, an early education and childcare center in Washington, DC, provides nutritious foods to children in families experiencing homelessness. The program works intensely with parents on many life issues, including health and nutrition, and helps them develop goals and plans for improving their economic and family lives (Chapter 1, page 56).
- HealthCorps enables young people, as part of a comprehensive health education program, to understand how important nutritious foods are, and how to cope with financial and other barriers to eating well (Chapter 1, page 57).
- Eskenazi Health, a safety-net health system in Indiana, has developed a pilot program with Meals on Wheels America to provide nutritious meals to recently discharged patients for their initial period back at home. Eskenazi also maintains a food pantry at one of its clinics in a low-income neighborhood, and screens patients coming to the clinic for their food security status (Chapter 2, pages 78-79).
- In-home nurse visitation programs for first-time parents improve health, nutrition, and life outcomes for children and parents alike. These efforts supplement WIC and other federal programs targeted to low-income, nutritionally at-risk children and mothers (Chapter 1, pages 45-47).
- McKenna's Wagon, a mobile food truck, serves healthful meals daily to 300 people who are homeless in downtown Washington, DC (Chapter 2, page 84).

Many churches across the United States are involved in health care. They may offer mobile health vans or fairs, host food pantries with healthy food, employ parish nurses, engage with church-sponsored hospitals, or offer mission support for medically-based ministries around the world. In many cases these efforts involve

MILESTONES IN RELIGION, SCIENCE, AND MEDICINE

1850–1900

The first General Conference of the Seventh-Day Adventists (SDAs), based on the teachings of William Miller, emphasize fresh air, exercise, a meat-free diet, sexual purity, drug-free medicine, avoiding stimulants, and sensible dress.

partnerships with other local churches, with ecumenical faith communities, and with denominational groups. This multi-church commitment, despite differences on other issues, is one visible sign of the unity of the church and recognizes both the spiritual and medical components of health and well-being. An example of these factors working well is Columbia St. Mary's Hospital in Milwaukee, which sponsors a chronic disease management program at food pantries in some of the city's lowest income neighborhoods (Chapter 1, page 51). Many pantries are in local churches, and the hospital engages parish nurses to help administer the program. The pantries stock fresh, healthful food aimed at diseases found in those communities. One local denominational group has strengthened its commitment to health ministries as a result. Communities across the country find that interfaith activities are also fruitful, uniting shared values common to different religious traditions.

- Which of these approaches seem most promising? What other ideas do these examples spark in your mind? What obstacles are there?
- Why aren't all churches, hospitals, food banks, and others experimenting with innovative approaches to end hunger and improve health in their communities? What limitations might they face? What role might advocacy play in stimulating more innovation?

Activities

- If there are active parish nurses in your area, invite one to speak to your church or group. Discuss whether a parish nurse would be a good addition to your church's current health and hunger work.
- Many areas have Meals on Wheels programs. Bring together coordinators of that program and staff from local hospitals and clinics to see if your area could support a pilot project like Eskenazi Health's (Chapter 2, pages 78-79).
- Review the online video to the 2016 Hunger Report at www.hungerreport.org/video. This is about how Wholesome Wave's fruit and vegetable prescription program (FVRx®) is improving one family's health and food security (see more about FVRx® in Chapter 2, pages 92-95). What is most striking to you about the story? Is the program effective and sustainable? What might make a similar program work in your area?
- Invite healthcare professionals in your congregation or who are friends of group participants to review the Hunger Report and offer their thoughts to the class.

For suggestions on how you can translate your group's knowledge and energy into concrete forms of advocacy, see www.bread.org.

Louis Pasteur (1822–1895) introduces the germ theory of disease.

1850–1900

Meanwhile, there is a resurgence of faith healing during revivals, pilgrimages to shrines, and exposure to relics.

SESSION 4: ENDING HUNGER: HEALTH IS AT THE CORE

The Word

Read Mark 5:25-34 and John 5:2-15

Some gospel stories that involve healing moments include heartbreaking histories of longstanding illness. In Mark, the woman who has suffered hemorrhages for 12 years has spent all her funds on medical advice, but her condition has only gotten worse. Is her illness a rare disease, or have male doctors misdiagnosed a common condition among women? Whatever the cause, the expensive healthcare system has let her down.

In a different way, the sick man in John's gospel has his own medical setbacks. Ill for nearly four decades, he is constantly outmaneuvered in getting to a soothing pool. People with more physical resources jump ahead of him, denying him access. In both gospel stories the people seeking relief are persistent and courageous. But Jesus offers a means of renewal that other health systems have failed to provide.

Both episodes occur in crowds, so the healing impact extends to those gathered bystanders as they see Jesus bring peace and wholeness into broken, aching places. We're reminded again of the Beatitudes (Matthew 5:8): "Blessed are the pure in heart, for they will see God."

Modern medicine is amazing in its versatility and scope. But even it has limitations and failures. Perhaps part of the issue is our own expectations. Knowing what is possible, we demand the best for ourselves and our family. We don't always consider the consequences for neighbors who lack access or resources to get good health care.

Christian values and international declarations support basic health care as a right for all. Yet as a nation we struggle to make sure there is adequate care for everyone. Laws like the Affordable Care Act (ACA) that point in that direction become major political debating points rather than rallying wide support. We know that top-notch nutrition and health resources for children enhance their entire lives (see Chapter 3, pages 116-120). Yet the global community has not yet made protecting and promoting children's lives a top priority.

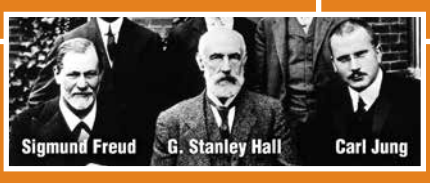
- Knowing the potential and the limitations of healthcare systems, what role can ending hunger play in bridging the gaps?

MILESTONES IN RELIGION, SCIENCE, AND MEDICINE

1900–1950

In the 1930s, a Baptist commission reviewing missionary activity of the church calls for less evangelism and more use of medical and other professional service as a direct means of making converts.

Psychology emerges as a discipline in its own right and distances itself from philosophy and religion, instead modeling itself after scientific disciplines like physics.



- Is perseverance important in maintaining a person's health? Does the biblical witness in these stories show how important it is to foster hope and to take concrete action in seeking the justice of good health care?

The Issues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Several chapters in this Hunger Report discuss the intersection of health care and hunger in the United States. But these same issues arise in the international context, often in different ways and with different solutions than here at home. As in our Scripture passages, perseverance and flexibility are at the center of sustained efforts to end hunger and improve health.

In the year 2000 all the nations of the world committed to a set of concrete, achievable development goals. These aimed to improve global health and well-being, reduce poverty and hunger, and enhance partnerships to meet those goals over the next 15 years. (For background on these Millennium Development Goals (MDGs), see Chapter 3, pages 110-115) The good news is that, despite setbacks in some areas, major progress has been made on many of these MDGs (see page 201 for details on that MDG progress). As the period of the MDGs ends in 2015, the Sustainable Development Goals (SDGs), approved in September 2015, will expand and refine the goals. The SDGs, covering now through 2030, point to challenges not addressed in the MDGs (such as climate change) and new opportunities for progress (see Chapter 3, pages 131-137).

The Hunger Report suggests several key next steps on global issues:

Many countries need to build more capacity in their health systems. Over past decades

Church-related hospitals, first established around the turn of the twentieth century, care for more than a quarter of all hospitalized patients in the United States.

1950–1980

The Catholic Church is the largest non-government provider of health care in the world.

donor nations and financing institutions generously provided funding and support to fight HIV/AIDS, malaria, Ebola and other key health priorities. Those donations saved millions of lives, and continue to do so. Yet money targeted for diseases could be spent even more efficiently, in the short and longer terms, if recipient nations improved their health and information systems (see Chapter 3, pages 120-125). At first glance, providing aid to support these systemic changes may not seem as attractive and motivating as combating specific illnesses. But strengthening health systems promises major benefits.

Another global priority is to train community-based healthcare workers, especially in areas where formal health workers are not readily available (see Chapter 3, page 124). In many parts of the world, and in portions of the United States, trained community workers have helped provide primary health care; served as parish nurses, as midwives, and as maternal and newborn caregivers; and administered vaccinations. One of the MDGs that has not been fully achieved by 2015 is reducing maternal mortality (Chapter 3, page 120). Better health systems and skilled local personnel can change this. (See U.S Leadership: Ending Preventable Child and Maternal Deaths in a Generation, on page 126.)

The Hunger Report discusses "hidden hunger," known technically as 'micronutrient deficiency' (Chapter 3, pages 116-120). When children lack access to key nutrients (including iodine, A and B vitamins, zinc, and iron), a condition known as stunting can result. The most visible sign of stunting is when a child fails to grow to normal height, but other serious problems may also be present. Fortified foods and vitamin supplements can help in those settings. In wealthier nations, consuming more high quality and nutritionally rich foods available on grocery shelves may be more feasible. Yet even there, cost factors, food preferences, and the reality of food deserts can put those healthier alternatives out of reach to many who need them.

- Globally, conflict is a major cause of hunger and impaired health, and vice versa. Consider the Nigerian and Syrian examples in Chapter 3, page 115. How is peacemaking related to ending hunger and ensuring adequate health care for all? In conflict situations, what support do those caught in the middle need most?
- The Hunger Report discusses universal health coverage, which many countries and the global community are working to achieve (Chapter 3, pages 127-130). What would this look like, in the United States and abroad, as a culturally-sensitive goal tailored to meet a particular community's needs and realities? What alternative forms of healing, beyond traditional Western approaches, must we be open to for those practicing them?
- The food industry in the United States plays a major role in the quantity and quality of food available in our communities (Chapter 2, pages 85-87). Think about the sweetened beverages many people drink. Some advocates suggest that public

MILESTONES IN RELIGION, SCIENCE, AND MEDICINE

As many as 100 million charismatic Christians around the world express beliefs in divine healing.

1980–2000

More than 60 medical schools (of the 126 schools in the United States) have courses on religion, spirituality, and medicine.

policies should aim to reduce consumption of these beverages because of their health impacts. Others say this is a matter for personal choice. What are your views on the food industry's role in our nutrition and food decisions? What changes, if any, would you like to see? How could these changes come about given today's economic and political situation?

Activities

- It's likely you have encountered healthcare workers throughout your life, both professionals and those more informally trained. Discuss how these people have made a difference in your well-being. How might the global healthcare system support flexible roles that involve various types of healthcare personnel?
- Look at the infographic on "hidden hunger" online at hungerreport.org/hiddenhunger. Were you surprised at the close link between obesity and micronutrient deficiency and their dual impact on health? Why is this known as 'hidden hunger'? (Read Chapter 3, pages 116-120.) What responses—and on what scale—do you think are appropriate to deal with micronutrient deficiency?
- Health literacy is an emerging area of concern. The Hunger Report says, "Health literacy, as defined by the Robert Wood Johnson Foundation, 'is the degree to which individuals have the capacity to obtain, process and understand basic health information and services needed to make appropriate health decisions and adhere to sometimes complex disease management protocols.'" (See Introduction, page 27, and also Figure i.10.) Do you feel you are literate on health matters? After reading portions of this report and using this study guide, do you feel more comfortable speaking with your doctor about health and nutrition concerns? Would you consider discussing, or sharing information about, some of the issues in this report with your doctor?
- As you think about the role the government plays—in the ACA, in federal food programs, in international development assistance to relieve poverty and hunger—what would you say to our nation's leaders to help create a safer, healthier, and well-nourished world? For example, consider a federal policy, still in effect in some states, that prevents people convicted of certain felony drug offenses from having access to SNAP for the rest of their lives, even after their release from prison. (See Introduction, pages 30-31.). How does this policy impact both the formerly incarcerated person and their families? Are these policies fair and wise? Bread for the World has user-friendly advocacy resources on mass incarceration and other issues at www.bread.org.

For suggestions on how you can translate your group's knowledge and energy into concrete forms of advocacy, see www.bread.org.

2000–2015

Faith-based groups in the United States urge the federal government to increase support to fight the global HIV/AIDS epidemic, resulting in the authorization of the President's Emergency Program For AIDS Relief (PEPFAR), the largest U.S. development assistance program of all time.

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Glossary

Affordable Care Act: The U.S. health care law (a.k.a. Obamacare) signed by President Obama in 2010, with one of its main objectives being to improve access to health coverage for low-income Americans.

Americans with Disabilities Act (ADA): The federal law signed by President George H.W. Bush in 1990 prohibiting discrimination and ensuring equal opportunity for persons with disabilities in employment, state and local government services, public accommodations, commercial facilities, and transportation.

Baby Boomers: A generation of Americans born after World War II until the mid-1960s who are now retiring at a rate of 10,000 per day.

Body Mass Index: A measure used for approximating a person's total body fat based on weight in relation to height.

Capacity building: Development assistance specifically designed to build skills and/or technical and management capacity among the beneficiaries.

Cash transfer: A government transfer of cash often based on conditions that promote poverty reduction and long-term self-sufficiency, such as enrolling children in schools, regular medical check-ups, vaccinations, or more nutritious eating.

Child Tax Credit: A non-refundable tax credit provided to parents. The credit may be as much as $1,000 per qualifying child depending upon the parents' incomes.

Climate change: A change in the state of the climate that can be identified (for example, by using statistical tests) over an extended period, typically decades or longer.

Community benefit requirements: Internal Revenue Service requirements that nonprofit hospitals must meet to maintain their nonprofit status.

Community Health Needs Assessment: A process that assesses the current state or health of a defined community and identifies current health needs necessary for prioritizing health interventions and aligning community benefit activities.

Developed countries: Highly industrialized nations such as the United States, Great Britain, France, Germany, and Japan; also referred to as high-income.

Developing countries: These include low- and middle-income countries, where extreme poverty, hunger and other hardships remain common.

Dietary Guidelines for Americans: The recommendations of the U.S. Departments of Agriculture and Health and Human Services on the foods the U.S. public should be consuming, with one of its goals being to reduce rates of chronic disease.

Double Value Coupon Program: An incentive program that doubles the value of federal nutrition benefits when used at participating farmers' markets to purchase fresh fruits and vegetables.

Early Head Start: The federally funded preschool and early childhood development program for toddlers and children up to the age of 3 from low-income families.

Earned Income Tax Credit (EITC): A federal government program that provides a cash benefit to many low-income working people by refunding a portion of their income taxes.

Epidemiological transition: The replacement of infectious diseases by chronic, noncommunicable diseases as the main cause of death in a population, due mainly to improvements in public health, including reductions in hunger and malnutrition.

Fee for Service: A traditional method of paying for medical services under which doctors and hospitals are paid for each service they provide.

Feed the Future: The U.S. government's global hunger and food security initiative, through which the United States works with host governments, development partners, and other stakeholders to sustainably tackle the root causes of global poverty and hunger.

Food bank: A charitable organization that solicits, receives, inventories, stores and distributes food and grocery products from various sources to charitable organizations.

Food desert: An urban neighborhood or rural town lacking good access to fresh, healthy, and affordable food.

Food insecurity: Uncertain availability or inability to acquire safe, nutritious food in socially acceptable ways.

Food security: Assured access to enough nutritious food to sustain an active and healthy life with dignity.

Food system: The interconnected parts of planning, producing, storing, processing, transporting, marketing, retailing, preparing, eating, and disposing of food at any geographical scale.

Fruit and vegetable prescription program: Prescriptions written by healthcare providers worth a defined amount for low-income patients to redeem at participating farmers markets.

Group of 7 (G-7): The wealthiest industrial countries: Canada, France, Germany, Italy, Japan, United Kingdom, and United States.

Great Recession: The worst economic downturn in the United States since the Great Depression. It started in December 2007 with the bursting of a housing bubble that led to a financial crisis and a steep rise in unemployment.

Green Climate Fund: A fund set up through the United Nations Framework Convention on Climate Change (UNFCCC) with the intent to raise money from developed countries to help developing countries cope with the impacts of climate change.

Greenhouse gas emissions: Gases that trap heat in the atmosphere and are linked to global climate change.

Head Start: The federally funded preschool program for 4-year olds from low-income families.

Health disparities: Differences in health status among distinct segments of the population including differences that occur as a result of gender, race or ethnicity, education or income, disability, or living in various geographic localities.

Healthy, Hunger-Free Kids Act of 2010: The law that reauthorized the federal school meal and child nutrition programs and increased access to healthy food for low-income children.

Hidden hunger: A deficiency in the vitamins, major minerals and trace elements needed for a healthy, balanced diet.

High-income country: Determined by the World Bank as any country that earns an annual income per capita of more than $12,736 USD or more in 2014.

Human development: An expansion of opportunities resulting from improvements in one's economic, health, and educational wellbeing.

Hunger: A condition in which people do not get enough food to provide the nutrients (carbohydrate, fat, protein, vitamins, minerals and water) for fully productive, active, and healthy lives.

Let's Move!: An initiative launched by First Lady Michele Obama dedicated to addressing the challenge of childhood obesity, including by providing children with healthier foods in schools and helping them to become more physically active.

Low food security: A category of food insecurity for households that report food access problems and reduced diet quality, but typically have reported few, if any, indications of reduced food intake. Prior to 2006, households with low food security were described as "food insecure without hunger."

Low-income country: Determined by the World Bank as any country that earns an annual income per capita of $1,045 USD or less in 2014.

Malnutrition: An abnormal physiological condition caused by inadequate, unbalanced or excessive consumption of macronutrients and/or micronutrients.

Marginal food insecurity: A category of food insecurity for households that have problems at times, or anxiety about, accessing adequate food, but the quality, variety, and quantity of their food intake were not substantially reduced.

Mass incarceration: A term for describing the high rates rates of incarceration in the United States.

Medically tailored meals: Meals that are designed for patients with specific medical conditions such as HIV/AIDS, hypertension, or diabetes.

Micronutrients: The vitamins, major minerals and trace elements needed for a healthy, balanced diet.

Middle-income country: Determined by the World Bank as any country that earns an annual income per capita of $1,046-$12,735 USD. It is further divided between lower middle income countries, ($1,046-$4,125) and upper middle income countries, ($4,126-$12,735).

Millennium Development Goals (MDGs): A global agreement officially adopted at the United Nations in the year 2000. The goals served as a road map for development outcomes to be achieved by 2015.

National Health and Nutrition Examination Survey (NHANES): An annual survey conducted by the U.S. Department of Health and Human Services to assess the health and nutritional status of adults and children in the United States.

No Kid Hungry®: A campaign led by anti-hunger organization Share Our Strength to end child hunger in the United States.

Nongovernmental organizations (NGOs): Groups and institutions that are entirely or largely independent of government and that have primarily humanitarian or cooperative rather than commercial objectives.

Obesity: An adult who has a body mass index of 30 or higher is considered obese. See body mass index above.

Older Americans Act (OAA): The federal law that supports a range of home and community-based services, such as Meals on Wheels and other nutrition programs for older individuals.

Overweight: A person who has a body mass index between 25 and 29.9 is considered overweight. See body mass index above.

Paris Declaration on Aid Effectiveness: An international agreement endorsed in 2005 by over one hundred ministers, heads of agencies and other senior officials, committing their countries and organizations to improve harmonization, alignment and management of development aid.

Parish nurse: A registered nurse with additional preparation in holistic ministry who assists members of the congregation to become more aware of their health and serves as a health counselor and facilitator to the health care system.

Plumpy'Nut: A ready-to-use therapeutic food that comes in the form of a fortified peanut paste for treating severely malnourished children

Population health: The health outcomes of a group of individuals, including the distribution of such outcomes within the group.

Poverty: The lack of sufficient money or resources to provide the basic needs of survival for oneself and one's family. The international poverty line is an income equivalent to $1.90 per day. In the United State, poverty thresholds vary according to family size. In 2015, a family of four is in poverty with an annual income of less than $24,250.

President's Emergency Plan for AIDS Relief (PEPFAR): A U.S. government initiative to help save the lives of those suffering from HIV/AIDS around the world, and the largest commitment by any nation to combat a single disease internationally.

Public health: Organized measures to prevent disease, promote health, and prolong life among a population as a whole.

Reach Every Mother and Child Act: A bill introduced in 2015 to implement policies aimed at ending preventable maternal, newborn, and child deaths globally.

Robert Wood Johnson Foundation: The largest philanthropic organization in the United States focused on improving health and access to health care for the American public.

Ryan White CARE Act: The most comprehensive federal program providing services exclusively to people living with HIV. Services include delivery of medically tailored meals.

Scaling Up Nutrition (SUN) movement: An international movement uniting people—from governments, civil society, the United Nations, donors, businesses and researchers—with shared nutrition goals and mobilizing resources to effectively scale up national nutrition programs, with a core focus on empowering women.

School Nutrition Association: A national, nonprofit professional organization representing more than 55,000 members dedicated to providing high-quality, low-cost meals to students across the country.

Social protection: A cash or in-kind transfer to a household to protect against financial hardship resulting from conditions such as disability, old age, poor health, unemployment, care of children or elderly, food insecurity, or lack of housing.

Stunting: A result of chronic malnutrition during the formative years of childhood. The most visible sign is when a child fails to grow to normal height, but may also result in decreased mental capacity and long-term health problems for the rest of a person's life.

Sustainable development: Development which meets the needs of the present without compromising the ability of future generations to meet their own needs.

Sustainable development goals (SDGs): A set of 17 international development goals agreed to by 193 countries at the United Nations General Assembly in 2015. The SDGs succeed the Millennium Development Goals (MDGs) as the most prominent international development framework, and they include goals to end hunger and extreme poverty globally by 2030.

Toxic stress: Repeated exposure during childhood to extreme or damaging stress that permanently affects brain chemistry.

Undernutrition: A condition resulting from inadequate consumption of calories, protein and/or nutrients to meet the basic physical requirements for an active and healthy life.

Universal Declaration of Human Rights: Adopted by the United Nations General Assembly in 1948, it remains the most comprehensive definition of common rights applying to all people in all countries, and in Article 25 states, "Everyone has the right to a standard of living adequate for the health and well-being of himself and his family, including food."

Very low food security: A category of food insecurity that refers to a reduction in food intake and disruption in normal eating patterns because a household lacks money and other resources for food. Prior to 2006, households with very low food security were described as "food insecure with hunger."

War on Poverty: An initiative launched by President Lyndon Johnson in 1964 that included the establishment of a set of government programs, including, among others, Head Start, Medicaid and Medicare, the Food Stamp Program, and improvements to Social Security.

World Health Organization (WHO): A U.N. agency responsible for providing leadership on global health matters, shaping the health research agenda, setting norms and standards, articulating evidence-based policy options, providing technical support to countries, and monitoring and assessing health trends.

Appendix 1:
Federal Nutrition Programs

Supplemental Nutrition Assistance Programs (SNAP)

SNAP (formerly the Food Stamp Program) puts healthy food within reach of millions of people each month via an authorized debit card used to purchase food at most grocery stores. On average, 51 million individuals were eligible for benefits each month in 2013, and 43 million received them. Overall, the program served 85 percent of all eligible individuals in 2013. Through nutrition education partners, SNAP helps clients learn to make healthy eating and active lifestyle choices.

Child Nutrition Programs:

Child and Adult Care Food Program (CACFP)

CACFP plays a vital role in improving the quality of day care and making it more affordable for many low-income families More than 3.3 million children and 120,000 adults receive nutritious meals and snacks each day as part of the day care they receive. CACFP reaches even further to provide meals to children residing in homeless shelters, and snacks and suppers to youths participating in eligible afterschool care programs. The program provides meals to adults who receive care in nonresidential adult day care centers.

Fresh Fruit and Vegetable Program (FFVP)

The FFVP provides free fresh fruits and vegetables in selected low-income elementary schools nationwide. The purpose of the program is to increase children's fresh fruit and vegetable consumption and at the same time combat childhood obesity by improving children's overall diet and create healthier eating habits to impact their present and future health.

National School Lunch Program (NSLP)

School districts and independent schools that choose to take part in the lunch program get cash subsidies and donated commodities from the USDA for each meal they serve. In return, they must serve lunches that meet Federal requirements, and they must offer free or reduced price lunches to eligible children. Children from families with incomes at or below 130 percent of the poverty level are eligible for free meals. Those with incomes between 130 percent and 185 percent of the poverty level are eligible for reduced-price meals, for which students can be charged no more than 40 cents. In the 2013-2014 school year, the NSLP provided a healthy lunch to more than 30 million children per day, with roughly two-thirds receiving these meals for free or at reduced price.

School Breakfast Program (SBP)

The SBP operates in the same manner as the NSLP. In the 2013-2014 school year, the SBP provided a healthy morning meal for 11.2 million low-income children on an average day.

Special Milk Program (SMP)

Participating schools and institutions receive reimbursement from the USDA for each half pint of milk served. They must operate their milk programs on a non-profit basis. They agree to use the Federal reimbursement to reduce the selling price of milk to all children.

Summer Food Service Program (SFSP)

SFSP is the single largest Federal resource available for local sponsors who want to combine a feeding program with a summer activity program. Nationally, 3.2 million children participated in SFSP on an average day in July 2014. For every 100 low-income children participating in school lunch during the 2013-2014 school year, only 16 were eating summer meals through the SFSP in 2014.

Women, Infants, and Children (WIC)

The Special Supplemental Nutrition Program for Women, Infants, and Children–better known as the

WIC Program—serves to safeguard the health of low-income women, infants, & children up to age 5 who are at nutritional risk by providing nutritious foods to supplement diets, information on healthy eating, and referrals to health care. During Fiscal Year (FY) 2014, the number of women, infants, and children receiving WIC benefits each month reached approximately 8.3 million.

Farmers' Market Nutrition Program (FMNP)

The FMNP provides fresh, unprepared, locally grown fruits and vegetables from local farmers' markets to WIC recipients. During FY 2013, 1.5 million WIC participants received FMNP benefits.

Senior Farmers' Market Nutrition Program (SFMNP)

The SFMNP awards grants to States, United States territories, and federally-recognized Indian tribal governments to provide low-income seniors with coupons that can be exchanged for eligible foods at farmers' markets, roadside stands, and community supported agriculture programs. In Fiscal Year (FY) 2013, 835,795 people received SFMNP coupons.

Food Distribution Programs:

Commodity Supplemental Food Program (CSFP)

CSFP works to improve the health of low-income pregnant and breastfeeding women, other new mothers up to one year postpartum, infants, children up to age six, and elderly people at least 60 years of age by supplementing their diets with nutritious USDA commodity foods. It provides food and administrative funds to States to supplement the diets of these groups. An average of more than 573,000 people each month participated in the program in fiscal year (FY) 2014.

Food Distribution Program on Indian Reservations (FDPIR)

FDPIR is a Federal program that provides commodity foods to low-income households, including the elderly, living on Indian reservations, and to Native American families residing in designated areas near reservations. Average monthly participation for FY 2014 was 85,400 individuals.

Nutrition Services Incentive Program (NSIP)

NSIP is a nutrition program for the elderly administered by the Department of Health and Human Service's Administration for Community Living. About 5,000 nutrition service providers together serve over 900,000 meals a day in communities all across the United States in congregate settings and for older individuals who are homebound. The program serves individuals who are age 60 or over, and in some cases, their caregivers, spouses and/or persons with disabilities.

The Emergency Food Assistance Program (TEFAP)

Under TEFAP, commodity foods are made available by USDA to States. States provide the food to local agencies that they have selected, usually food banks, which in turn, distribute the food to soup kitchens and food pantries that directly serve the public. In FY 2014, Congress appropriated $318.15 million for TEFAP—$268.75 million to purchase food and $49.401 million for administrative support for State and local agencies. In addition to USDA Foods purchased with appropriated funds, TEFAP distributes 'bonus' foods purchased by USDA to support agriculture markets. In FY 2013, $228.5 million of such foods were made available to TEFAP.

Sources: U.S. Department of Agriculture, Food and Nutrition Services: Programs and Services: www.fns.usda.gov/programs-and-services; U.S. Department of Health and Human Services, Administration for Community Living, Administration on Aging Nutrition Services: www.aoa.acl.gov/AoA_Programs/HPW/Nutrition_Services/index.aspx; Food Research and Action Center: http://frac.org/.

Appendix 2:
Estimating the Health-Related Costs of Food Insecurity and Hunger

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Introduction

Hunger is a health issue. This report is primarily about health-related costs attributable to food insecurity and hunger in the United States in 2014. The report also includes other kinds of costs associated with food insecurity, but its focus is health-related costs. Our charge is to update information on costs of food insecurity in the United States published in 2011,[1] employing the most recently available data on prevalence of food insecurity in 2014 with the most valid estimation procedures available, and to expand on the health-related costs attributable to food insecurity in the United States.

We gratefully acknowledge the research assistance provided by Rainjade Chung for the review of literature; consultations with Dr. Diana Becker Cutts, principal investigator for the Children's HealthWatch Minneapolis site at Hennepin County Medical Center; and the generous contribution of time, information, and communication from Prof. Don Shepard of Brandeis University regarding prior work and reports on this subject.

Executive Summary

Each September the Economic Research Service of the U.S. Department of Agriculture (USDA) reports estimates of the number and prevalence of people living in food insecure households by various demographic characteristics and levels of severity of food insecurity. Data for this report come from the December implementation by the Census Bureau of the Current Population Survey, a nationally representative survey of the U.S. population. In 2014, there were 48.135 million people (15.4 percent of the total population) living in households that were food insecure at some level of severity (Exhibit 1). The number of food-insecure people in the United States in 2014 was 11.906 million higher than in 2007, the year the Great Recession began, and only 0.697 million lower than in 2010. Between 2010 and 2014 the nation's food security situation did not improve appreciably.

Exhibit 1 **Number and percent of people living in food-insecure households in the US, 2007-2014**

Year	Total Number of Individuals Food Insecure (1000s)	Percent of Individuals Food Insecure
2007	36,229	12.2%
2008	49,108	16.4%
2009	50,162	16.6%
2010	48,832	16.1%
2011	50,120	16.4%
2012	48,966	15.9%
2013	49,078	15.8%
2014	48,135	15.4%

Source: Coleman-Jensen, et al., 2015[2].

The most recent prior estimates of the cost of food insecurity to the nation by researchers at Brandeis University[1] addressed costs within three domains: illness costs, education and related costs, and charity costs. The total illness costs estimated for calendar year 2010 within these three areas was $130.5 Billion.

We surveyed empirical food security research literature published in

peer-reviewed academic journals between 2005 and 2015, and based our estimates on relationships identifiable in that literature. Using information from the research literature reviewed, and from the 2011 Brandeis report, *we estimate the health-related costs attributable to food insecurity to be $160.07 Billion in 2014* (Exhibit 2).

Domains of Costs Addressed in this Report

The cost estimates described in this report address the following domains:

1. Direct costs of treatment of specific disease or health conditions that are plausibly attributable to household food insecurity.
2. Direct costs of special education in public primary and secondary schools plausibly attributable to food insecurity.
3. Indirect costs of lost work productivity resulting from:
   a. Workers' own illnesses or other health problems attributable to food insecurity,
   b. Workers providing care to a family member whose illness is attributable to food insecurity.

Exhibit 2 **Estimated Costs Attributable to Food Insecurity and Hunger in the US, 2014**

Source of Cost	Costs ($Billion 2014 Dollars)
Direct health-related costs in 2014 based on new research evidence	$29.68
Non-overlapping direct health-related costs reported by Brandeis researchers in 2011, continued in 2014 and expressed in 2014 dollars	$124.92
Indirect costs of lost work time due to workers' illnesses or workers providing care for sick family members based on new research evidence	$5.48
Total direct and indirect 2014 health-related costs	**$160.07**
Indirect costs of special education in public primary and secondary schools, based on new research evidence	$5.91
Total costs of dropouts reported by Brandeis researchers in 2011, continued in 2014 and expressed in 2014 dollars	$12.94
TOTAL ESTIMATED COSTS	**$178.93**

Sources described in document text.

Methods

To estimate the direct health-related costs attributable to food insecurity in 2014, we reviewed empirical research literature published in peer-reviewed journals from approximately 2005 to 2015, searching for quantitative findings of associations between food insecurity and health outcomes. We specifically searched for quantitative findings that involved either odds ratios (most often), likelihood ratios, or relative risk ratios expressing the differences in likelihood of a person living in a food-insecure household having a disease or disease condition compared to a person living in a food-secure household (food security status is the exposure variable).

Those probability ratios were then translated into population attributable fractions (PAFs) expressing the proportion of the total prevalence of the disease in the population attributable to food insecurity (i.e., the excess fraction attributable to food insecurity). As noted above, this process requires the assumption that food insecurity is causally related to the disease conditions.

In case-control studies, if adjusted odds ratios (ORs) are available, they can be transformed into relative risk ratios using formula 1 below[3]:

1. $RR = OR/[(1-Po)+(Po*OR)]$,

   where RR is the relative risk ratio,

   OR is the odds ratio, and

   Po is the proportion of the unexposed (food secure) who develop the outcome, or become cases.

This adjustment is desirable since, though the OR is an acceptable estimate of the Relative Risk ratio (RR) in case-control studies, and approaches RR in the situation of rare diseases in which very few of the unexposed develop the disease, the higher the prevalence of the disease in the unexposed popu-

lation (e.g., the food-secure population), the greater the deviation of the RR from the OR.

With the relative risk ratios thus calculated (or if they are available), they can be used to calculate estimates of the excess population attributable fractions (PAF) of the diseases arising due to exposure to the predictor, food insecurity, using formula 2 below[4]:

1. PAF = Pe (RR - 1) / [Pe (RR - 1) + 1] * 100%, where

   PAF is the excess population attributable fraction of disease in the population considered to result from the presence of the exposure variable or condition (i.e., food insecurity),

   RR is the relative risk ratio calculated as above, and

   Pe is the proportion of controls (those who do not have the outcome or disease) who were exposed (live in a food-insecure household).

A complete table of all the conditions for which we found new studies providing the information needed to calculate attributable fractions can be found in Appendix Exhibit A1. For most of the health conditions, the attributable fraction (AF) is relatively small, 10 percent or less. For a few conditions we found research results leading to more than one AF for a condition. In those cases, we either used the average of the AFs, or used the one which was more reliable for the specific age group and condition under consideration. And for a few conditions, we were either unable to find data on the prevalence and number of people in the relevant sub-population with the condition, or data on the cost of treating cases of the condition. In those few instances, we were unable to estimate the disease burden or the costs. This was particularly true when the condition was failure to receive recommended or prescribed treatment, or treatment foregone due to inability to pay as a result of food insecurity.

For a couple of conditions (e.g., PEDS concerns; parents report of developmental concerns about their child), we had to add an additional link to the chain of logic such as obtaining positive predictive value of the indicator (PEDS concerns) and the outcome (special education). With a few conditions for which we could not find needed prevalence data, we relied on data from the U.S. Census Bureau on relationships between reported health status and health services utilization.[5]

Using the information in Exhibit 1A, together with data from the Agency for Healthcare Research and Quality's Medical Expenditure Panel Survey (MEPS, or other national survey data) on the number of cases of each disease condition in the population in 2014 (when available), we estimated the fraction (proportion) of cases of each health condition attributable to food insecurity. Combining the results of these calculations with data on annual expenditures for treatment of individuals with the condition (from MEPS or other national health surveys), we estimated the total annual direct costs of treatment for all individuals with the condition.

Data on numbers of hospitalizations, and average costs of hospital stays were obtained from the Agency for Healthcare Research & Quality's Healthcare Cost & Utilization Project public access data obtained via the HCUPnet online query system (http://hcupnet.ahrq.gov/). Data were obtained from both the HCUP National Inpatient Database and the HCUP Kids' Inpatient Database. Several price index series were used to adjust the price of various healthcare services. These price indices were taken from the Bureau of Labor Statistics' online databases (http://www.bls.gov/cpi/). Resulting estimated costs for each condition are presented in Appendix Exhibit 2.

The Brandeis researchers estimated the cost of the private food assistance system at $17.8 Billion in 2010 ($19.52 Billion in 2014 dollars), and we calculated the total cost of the public food assistance system to be $103.55 Billion in 2014. However discussions with healthcare colleagues and others led us to the position that the costs of these two complementary food assistance systems are more accurately viewed as the costs of prevention of food insecurity, not as a cost of food insecurity itself. The costs of these two food assistance systems are the costs of the vaccine that prevents food insecurity and hunger from occurring in the nation's households, families and children. Thus the costs of these two systems are not included as costs attributable to food insecurity.

Background and Context

A Note on Hunger

Hunger is probably a more complex phenomenon than most people imagine. The term is used to mean several different things, and its scope varies depending on its intended meaning. First, hunger is part of humans' "creatureliness," arising from of our nature as living systems that require regular intake of food to live, act, grow, develop, and be healthy. We all experience hunger every day; we know when we are hungry, and we can tell someone how hungry we are; i.e., we can "self-report" our hunger and its severity.[6]

At its most basic level, hunger is a neurochemical feedback loop: a reinforcing feedback loop that leads to more food intake the hungrier we are. The hunger feedback loop involves transmission of information to the brain as the stomach empties and its biochemical state changes. The time required for this emptying process is approximately 2-4 hours, depending on the contents of the stomach, activity levels, and other factors. It coincides generally with humans' customary schedule of eating three meals per day. When a person's normal pattern of food intake is interrupted by a lack of food, she becomes hungry. If she doesn't eat, she becomes even hungrier.[6]

Hunger can be described and measured in several ways. It is a drive to find and consume food, and the intensity of this drive depends partly on the amount of food eaten during, and length of time since, the last episode of food intake. Hunger also is a state, with physical and mental components; it is the opposite of satiety. When we are hungry, and food is readily available, and accessible, we eat until we are sated, or no longer hungry, and normally then we stop eating. Satiety is also a neurochemical feedback loop; a balancing feedback loop that leads to less food intake as the stomach fills and sends neurochemical signals to the brain causing the feeling of satiety to increase, and the feeling of hunger to decrease. Healthy people, with no eating issues, stop eating when they become sated.

But the "processes" of hunger and satiety are neither mechanistic nor completely regular. And they are not isolated within an individual. They occur within and are strongly influenced by social contexts, because humans are social beings. Each of us is a set of body systems living and acting within concentrically larger and more complex social systems. And we experience hunger as both a personal and a social condition. Our very earliest social interactions involve being fed, and nurtured. And as we grow, food, hunger, eating together, sharing food, being fed, nourished and nurtured, and nourishing and nurturing others, are fundamental social processes through which we learn to trust, respect, and care for each other.

We learn through social interactions around hunger, food, and eating that we depend on others, and that others depend on us. We learn etiquette: basic social rules that form a foundation on which we build ethics, and moral values. We celebrate important life-cycle events, such as birthdays, graduations, marriages, religious and civil holidays, and deaths, by enjoying and sharing food. Food and satisfying hunger are at the base of Maslow's hierarchy of needs,[7] and until their food and hunger needs are met, humans cannot fulfill other higher-order needs. But food and hunger are also social, and they permeate our social lives. We employ food and hunger, and satisfying hunger, in pursuit of higher-order needs.

So hunger is an individual set of feelings and sensations, grounded in individuals' neurochemical feedback loops, but it is even more a set of social feelings and sensations, grounded in humans' social nature. We live in relationships, some intimate, some casual, some formal, some informal, but all fundamental to our nature as social beings. Hunger is both an individual and a social process, experienced and responded to in social contexts through social interactions and processes. And when hunger cannot be satisfied, for whatever reasons, it affects our social beings, our social lives, social relationships, and social interactions.

Hunger becomes problematic when it cannot be reduced, or when we cannot respond to it appropriately, because we lack the wherewithal or resources necessary to obtain and consume food in socially acceptable ways. The reinforcing feedback loop of hunger can become out of control, and cause the system to collapse, literally, if the balancing feedback loop of satiety is not able to operate. But neither of these feedback loops operates

in isolation; both also are social processes operating within social contexts. And they involve and depend on social interactions to reestablish balance.

Hunger becomes a social policy issue when the social context, and all the social relationships it involves, fail to provide socially acceptable ways for individual or family systems to obtain the food needed to address hunger in socially acceptable ways. When this occurs, those systems are placed at risk for toxic stresses. And toxic stress, intense acute stress or less intense chronic stress, can be very corrosive and destructive. It damages both child and adult health, and is especially pernicious in young children. Toxic stress can damage the architecture of children's developing brains[8, 9] and place significant constraints on their human capital development, impairing the trajectories of their entire lives.[10]

The toxic stress of socially ignored or tolerated hunger damages physical and mental health, but it also erodes basic trust in and respect for social relationships, institutions, and the people within them. Our health, well-being, and prosperity depend on a strong functional base of trust, respect, and compassion in all our relationships. These are the glue that binds the public together and makes it healthy and strong. And without a healthy, strong public, none of us can really be healthy and strong or prosperous, either as individuals or in relationships. Humans are social, inter-dependent beings, and our health, strength, well-being and prosperity depend on the public welfare and strong public infrastructure. As trivial as it can sometimes sound, we very literally are all in this together. There is no "us" and "them," there is only us. And when some of us experience food insecurity or hunger, it harms and diminishes us all.

Food Insecurity and Hunger

"Food security—access by all people at all times to enough food for an active, healthy life—is one of several conditions necessary for a population to be healthy and well nourished."[11] Food insecurity and hunger are measured in the US with a household survey administered each December by the U.S. Census Bureau. The U.S. Food Security Survey Module and the Food Security Scales it contains were developed in the 1990s under the Food Security Measurement Study, a multi-agency collaborative effort involving scientists and academics, government analysts and policy experts, and individuals from for-profit and not-for-profit private entities.[6] The primary food security scale development activities were implemented through a competitive contracting process sponsored and overseen by the USDA and the National Center for Health Statistics (NCHS), with Abt Associates, Inc. as the prime contractor.

The food security and hunger scales developed by the Abt team were incorporated into the ongoing national Current Population Survey (CPS) implemented by the Census Bureau annually. Data from administration of the scales in the CPS are delivered by the Census Bureau to the USDA Economic Research Service (ERS) for summary analysis, estimation of prevalence in different socio-demographic subgroups, tabulation and reporting in its annual reports on food security in the US.

A Note on Causality

Establishing causation is correctly the ideal of all scientific endeavor, but it is seldom achieved, especially in the health and social sciences. The experimental design considered by most scientists, and many non-scientists, to be the "gold standard" for determining causality is the randomized controlled trial or "RCT," in which randomization can "control for" unobserved potentially confounding factors that might lead researchers to erroneously infer causation in relationships, by rendering those confounders random in the studied samples. Yet as good as they are, RCTs are not perfect, nor are they immune from various kinds of error.[12]

Moreover, many of the phenomena and conditions of interest in both health sciences and social sciences are not amenable to randomization. It would be unethical, for example, to randomly assign subjects to conditions of food insecurity or hunger, or to randomly assign food-insecure households to receive or not receive food assistance or other interventions. Consequently, food security research almost always relies on creative quasi-experimental designs, and efforts to control for unobserved confounders statistically.

Thus, conclusive, unassailable evidence that food insecurity causes the multitude of illnesses and adverse health conditions that a very large body of research liter-

ature indicates it is strongly related to most likely cannot be produced. Yet, as with the relationships between smoking tobacco and lung, throat, and mouth cancers, the evidence of relationships between food insecurity and these health outcomes is so strong, and the expected consequences of not treating the relationships as causal are so grave that we are justified in acting on strong evidence even if it is not absolutely conclusive and unassailable.

A Groundbreaking Study Helps Provide A Path Forward

An extremely important recent study of the relationships between food insecurity and health care costs in Ontario, Canada, where health insurance is universally available, achieves a major breakthrough toward providing conclusive evidence of causal relationships between food insecurity and adverse health outcomes. Since health insurance is universally available in Ontario, the intractable obstacle of adverse selection bias is virtually eliminated in this study. Successfully merging administrative data on health services utilization and costs in Ontario with data on food security status of Ontario households from the Canadian Community Health Survey, the researchers come closer than any yet to demonstrating that food insecurity causes bad health outcomes.

Results from this path-breaking research show a monotonic dose-response relationship between severity of food insecurity and total health care costs per person, after adjusting for a number of potential confounders known to be social determinants of health, even after excluding prescription drug costs which are only covered for a subset of the population.[13] Moreover, food insecurity was strongly and significantly related to healthcare costs, whereas income quintile of patients' neighborhood was not.[13]

While this study does not connect food insecurity causally with specific diseases, results are described as consistent with findings from other research of strong associations between food insecurity and poorer self-reported health status, increased likelihood of chronic disease diagnoses, poorer management of disease, and increased healthcare costs. The study's authors also note that "the extreme levels of material deprivation associated with household food insecurity, and severe food insecurity in particular, have been associated with extensive dietary compromise, higher levels of stress, and compromises across a broad spectrum of basic needs, all of which diminish individuals' abilities to manage health problems and potentially increase the need for health care.[13]

So while the presence of causal relationships between food insecurity and specific diseases and adverse health outcomes remains to be conclusively established, this study comes closer than any previous research to establishing conclusive causal relationships between food insecurity and higher health services utilization and health related costs. It is, therefore, a breakthrough, and provides strong support for the cost estimates produced in this current study.

Updating the October 2011 Hunger in America Cost Estimates

In October 2011, researchers at Brandeis University published a set of estimates of national-level costs

Exhibit 3 **Estimated costs of food insecurity and hunger in the US, 2007 and 2010.**

	2007 ($Billions)	2010 ($Billions)	Amount of Change, 2007-2010 ($Billions)	Percent Change, 2007-2010
Illness Costs	$98.4	$130.5	$32.1	33%
Education and Related Costs	$13.9	$19.2	$5.3	38%
Charity Costs	$13.2	$17.8	$4.6	35%
Total Hunger Bill	**$125.5**	**$167.5**	**$42.0**	**33%**

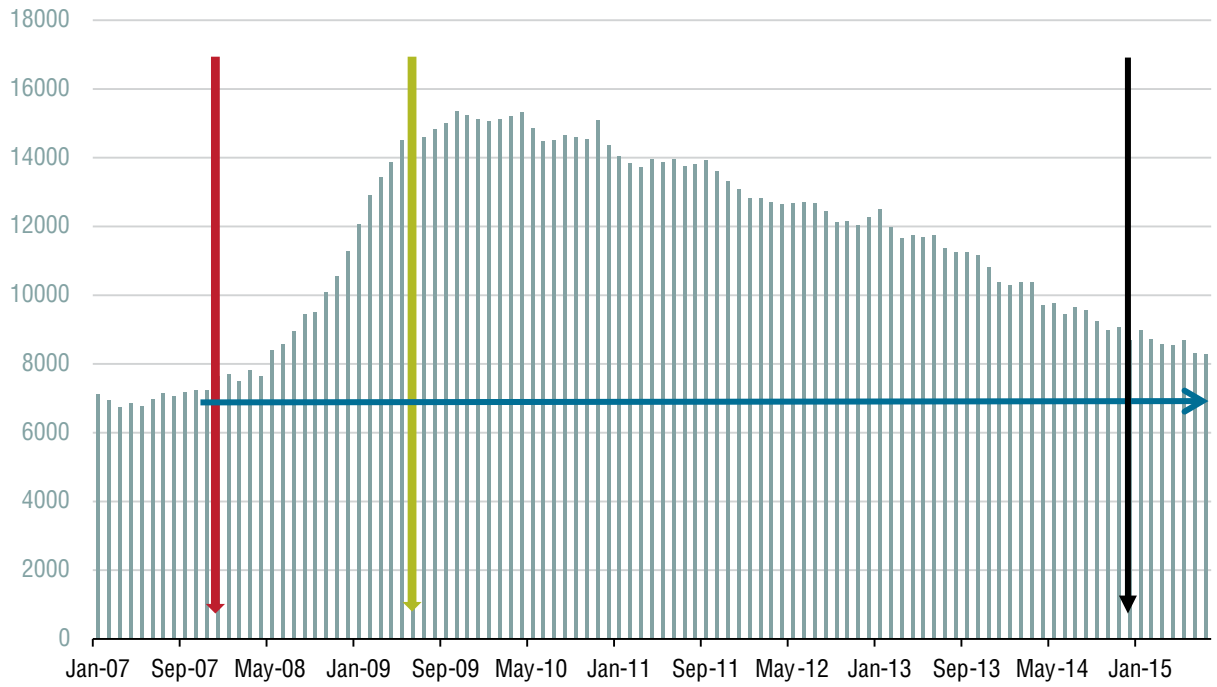
Source: Recreated from Shepard, et al., 2011[1].

attributable to food insecurity and hunger in 2010.[1] Those estimates (Exhibit 3) comprised an update of an earlier set published in 2007.[14] The authors concluded that costs attributable to food insecurity and hunger in 2010 conservatively amounted to a total of $167.5 Billion spread over illness-related costs, education-related costs, and charity costs (Exhibit 3). The costs estimates produced for 2010 ranged from 33 percent to 38 percent higher than the 2007 estimates across these categories. As described in the remainder of this section, there is little evidence that economic conditions in 2014 were sufficiently better than those in 2010 to suggest significant reductions in the costs attributable to food security over that period.

Over the period 2007-2010, food insecurity increased dramatically, mainly due to the Great Recession and the massive increases in unemployment during the recession and after it officially ended (Exhibit 4). In Exhibit 4, the red vertical arrow indicates the month the Great Recession began (December 2007), and the green vertical arrow the month it was determined by the National Bureau of Economic Research (NBER) Business Cycle Dating Committee to have ended (June 2009). The horizontal blue arrow marks the level of unemployment in the month before the recession began (November 2007). As the chart shows, the number unemployed in January 2013 was above 12.3 million, but declined steadily throughout the year, ending at just over 10.3 million. However, more than six years after the end of the recession (July 2015), the number of unemployed people in the U.S. labor force had not returned to its pre-recession level.

In July 2015 there were still more than a million more unemployed workers than in the month prior to the start of the recession (November 2007). Unemployment more than doubled during the recession, going from 7.24 million in November 2007 to 14.71 million in June 2009, the month the recession ended. And it continued to increase, surpassing 15 million in September 2009 and

Exhibit 4 **Number of unemployed workers in the US labor force by month, from January 2007 through July 2015.**



Source: US Bureau of Labor Statistics (http://data.bls.gov/pdq/SurveyOutputServlet;jsessionid=AE49BA7CEF85EEB690DE95D4FC5D758F.tc_instance5).

staying above 15 million until May 2010. The recovery of jobs since the recession ended has been extraordinarily slow, with ups and downs as Exhibit 4 shows.

Among the most harmful aspects of the very high unemployment levels during and after the Great Recession was the unparalleled expansion of the number of long-term unemployed, workers who had been unemployed for 27 weeks or longer. The number of long-term unemployed reached a record high of 6.7 million, 45.1 percent of all the unemployed in the second quarter of 2010. In addition, the proportion of unemployed workers who had been unemployed for 52 weeks or longer reached a record high of 31.9 percent in the second quarter of 2011, and the proportion who had been unemployed for 99 weeks or longer reached a record high of 15.1 percent in the fourth quarter of 2011.[15] And while all three of these measures of long-term employment have declined over the past several years, they remain high by historical standards.

Another extraordinary characteristic of the very slow job recovery from the Great Recession has been the large numbers of people withdrawing from the labor force; some for non-economic reasons, but others because they could not find suitable work, or any work at all. Between the end of the recession in June 2009, and December 2010, nearly 6 million people (5.999 million) withdrew from the labor force. By the end of 2013, an additional 6.6 million had withdrawn. Workers have continued to withdraw from the labor force since the end of 2013, but the rates of withdrawal have slowed and been nearly offset by new entrants. Even so, in July 2015, there were 12.6 million more workers not in the labor force than when the recession ended in June 2009.[16]

Among the 12.6 million people who withdrew from the labor force since the recession ended, nearly half chose to attend or return to school, or to engage in other non-labor force activities voluntarily. However, just over half reported they were available to work and wanted a job, but were not finding any. In addition to these labor-force leavers, the number of so-called "discouraged workers," who had looked for work sometime within the past year, but recently stopped looking because they believed there were no jobs available for them, went from 363,000 to 793,000 during the recession, and reached 1.318 million by December 2010. The number of "discouraged workers" remained close to 1.0 million over 2012-2014, but had declined to 668,000 by July 2015, still nearly double the number when the recession began.

In addition to the very large increases in numbers of unemployed, long-term unemployed, and those who withdrew from the labor force for economic reasons, the Great Recession also led to major increases in the number of "involuntary part time workers," people who wanted to be working full time but were only able to find part-time work. From November 2007, the month before the recession began, to when it ended in June 2009, the number of involuntary part-time workers doubled,[16] increasing from 4.494 million to 9.024 million. And as with unemployment, this number remained little changed through December 2010 when it was 8.935 million. By the end of 2013 the number of involuntary part time workers had fallen to 7.776 million, and in July 2015, at 6.325 million it was still 41 percent higher than in the month before the recession began.[16]

Thus in terms of labor market conditions, the unprecedented high levels of unemployment during and following the Great Recession have slowly declined over the past six years, but labor markets and the employment situation has by no means returned to normal, unless this is the "new normal." While the number of unemployed per month over the period January 2008 to December 2010 averaged 12.683 million workers, during the period January 2011 to December 2013, most of the period over which we are updating the estimates of costs attributable to food insecurity and hunger (indicated by the black vertical arrow in Exhibit 4), the average number of unemployed each month was 12.563 million, less than 1.0 percent lower (0.95 percent) than the average over 2008-2010. Thus on the basis of unemployment, under-employment, long-term unemployment, labor force withdrawals, and other labor force conditions, there is no reason to expect food insecurity, or its costs, to be significantly lower in 2014 than in 2010, and several reasons to expect them to be higher.

While the recovery has been very robust in terms of growth in GDP and corporate profits, with GDP growing at an average annual rate of 3.28 percent, and

corporate profits increasing by an average of nearly 10 percent per year over the period 2010-2014 in the non-financial sector of the economy (which includes manufacturing, transportation, utilities, wholesale and retail trade, and information), average weekly earnings for workers in private non-agricultural industries only increased in real (inflation-adjusted) terms over that period, by an average of 0.08 percent per year. The unavoidable implication of these numbers is that many people who have been able to find jobs during the recovery are earning less and less in real, inflation-adjusted terms, while corporate profits have increased at unprecedented rates.[17] These stagnant weekly earnings resulted in median annual income levels in real 2014 dollars for households declining from 2007-2010 by -6.7 percent. And while median income levels did not decline further from 2010-2014, they only increased by 0.28 percent, i.e., by less than three tenths of a percentage point in real 2014 dollars over the five years. It is worth noting that these trends in real average weekly earnings and real median income are unprecedented in the history of the U.S. economy since the Great Depression ended.

The unprecedented increase in food insecurity during the first year of the Great Recession is apparent in the data on food insecurity levels and prevalence in Exhibit 5, as is the persistence of high prevalence of all levels of severity of household food insecurity throughout the period 2008-2010, as well as 2011-2014. The economic context underlying the dramatic increases in food insecurity prevalence at all levels of severity was characterized primarily by massive increases in job losses and unemployment.* The economic context underlying the persistence of resulting

Exhibit 5 **Numbers and percents of people in the United States living in Food-Insecure households by food security status of the household, 2007-2014.**

Year	Total Number of Individuals Food Insecure (1000s)	Percent of Individuals Food Insecure	Number of Individuals In Households With Low Food Security (1000s)	Percent of Individuals In Households With Low Food Security	Number of Individuals in Households with Very Low Food Security (1000s)	Percent of Individuals in Households with Very Low Food Security
2007	36,229	12.2%	24,287	8.2%	11,942	4.0%
2008	49,108	16.4%	31,824	10.6%	17,284	5.8%
2009	50,162	16.6%	32,499	10.8%	17,663	5.9%
2010	48,832	16.1%	32,777	10.8%	16,055	5.3%
2011	50,120	16.4%	33,232	10.9%	16,888	5.5%
2012	48,966	15.9%	31,787	10.3%	17,179	5.6%
2013	49,078	15.8%	31,974	10.3%	17,104	5.5%
2014	48,135	15.4%	30,922	9.9%	17,213	5.5%

Source: Coleman-Jensen, et al., 2015[2].

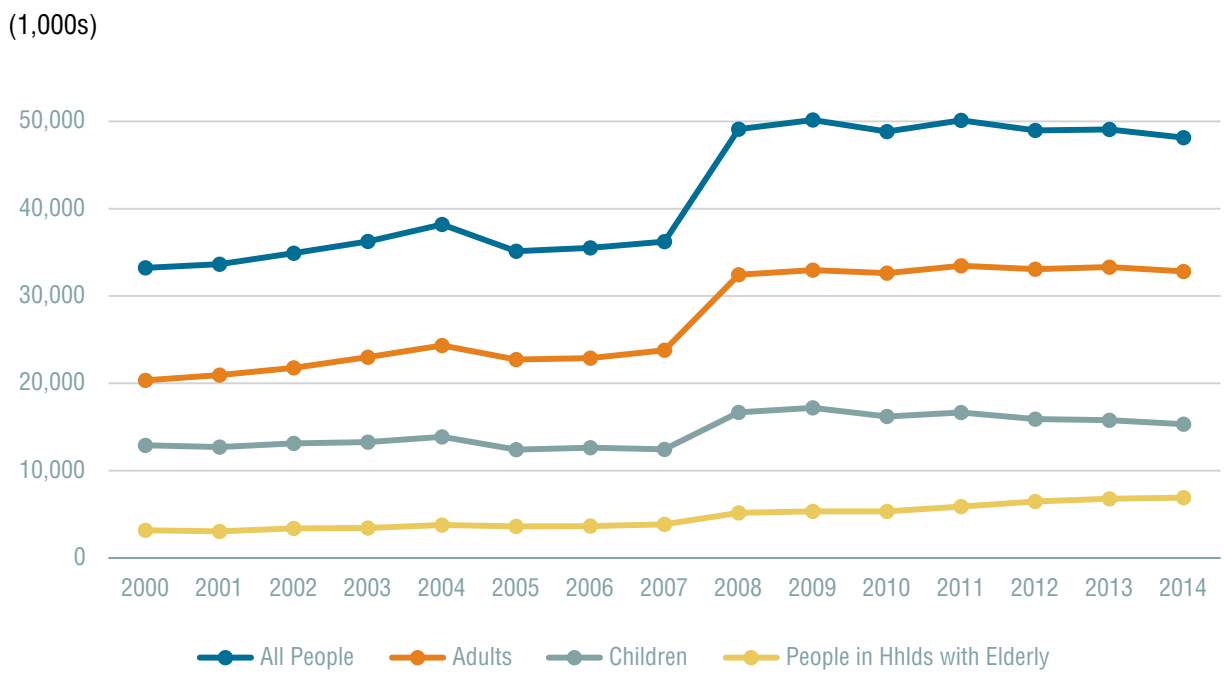
*The bursting of the housing bubble and collapse of the financial institutions whose unfettered speculative gambling with contrived "bundled instruments" of questionable legality was responsible for the subprime mortgage debacle, and ultimately for both the housing bubble and its bursting, led to unprecedented losses of wealth held in the form of owner-occupied residential real estate. That huge loss of wealth together with the large debt loads many homeowners had accumulated through "equity lines of credit" supported by the homes whose mortgages they were no longer able to afford, and the massive devaluation of residential real estate that followed bursting of the bubble, all contributed to the complex, multi-faceted market failures accompanying the financial market collapse. And all these market failures worked to shut down activities that had been employing millions of workers, thus playing a major role in initiation of the Great Recession. While the "too big to fail" banks and other financial institutions who were propped up and bailed out with public revenues quickly recovered and are among the corporations now earning unprecedented profits, the millions of homeowners, and other people who lost their homes, their wealth and their jobs are still struggling to recover. And they are among the millions of Americans still suffering from food insecurity. However, as relevant, interesting and important as this larger story is, its telling is beyond the scope of this project.

high prevalence of food insecurity in the years since the recession ended was one of declining weekly earnings, declining then stagnant real median income levels, major increases in the numbers of people engaging in involuntary part-time work, extraordinary numbers of workers withdrawing from the labor force for economic reasons, mainly because they could not find jobs, and the large increase and persistence of high numbers of long-term unemployed and "discouraged workers" over these two periods. Unfortunately there are few reasons to expect these conditions to change for the better in the near term.

The effects of these labor market dynamics on food insecurity are depicted graphically in Exhibits 6 and 7. While the increase in household food insecurity was rapid and extensive for adults and children, it was less pronounced among people living in households with elderly (Exhibit 6). However, while the number of food insecure adults stabilized at its higher level over the period 2010-2014, and the number of food-insecure children declined slightly from its peak in 2009, the number of food-insecure people in households with elderly continued to increase throughout the period 2010-2013, offsetting the decline in the number of food-insecure children. The net result of these subgroup changes was a fairly stable plateau of the total number of people living in food-insecure households at a level 12-14 million higher than its pre-recession level. Most notably, in spite of the supposed recovery from the recession, and significant declines in the total number of people unemployed over the period 2010-2013, economic conditions persisted that prevented food insecurity from declining.

Though the absolute numbers are comparatively smaller, the number of people living in households with very low food security, or severe food insecurity (previously food insecurity with hunger), increased in a pattern very similar to low food security (Exhibit 6). A notable difference between the trends in low food

Exhibit 6 **Numbers of people in the United States living in food-insecure households by age group, 2000-2014.**



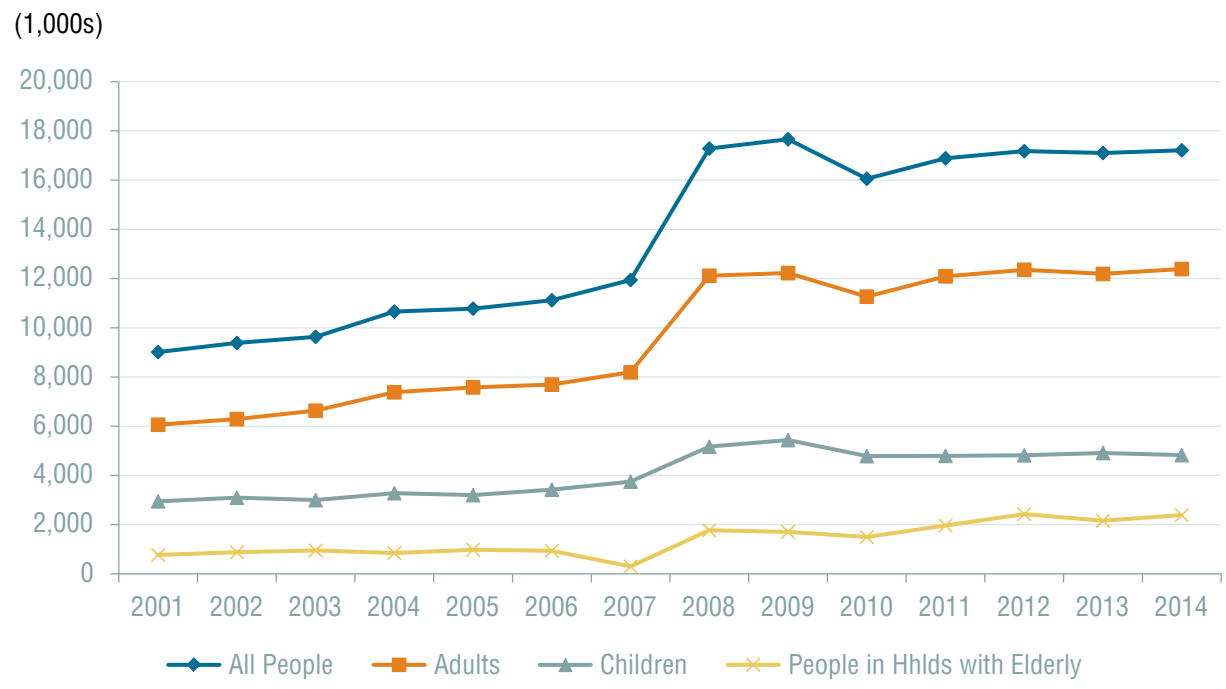
Source: Coleman-Jensen, et al., 2015[2]. (People in households with elderly can be of any age.)

security (Exhibit 6) and those for very low food security (Exhibit 7) is that the prevalence of very low food security had been on an upward trajectory since 2000, especially among adults, but also to a lesser degree among children.

The fall in prevalence of very low food security over 2009-2010 (Exhibit 7) partially reflects the across the board 13 percent increase in SNAP (Supplemental Nutrition Assistance Program) benefits and enhanced eligibility for single adults who had lost jobs, instituted under the American Recovery and Reinvestment Act (ARRA).[18] SNAP is the largest federal food assistance program, and also an entitlement program, making it the most important "counter-cyclical" support program the United States has. Since it is an entitlement, SNAP must be provided to all eligible applicants. Therefore in economic downturns that occur periodically as part of the usual business cycle, when jobs are lost and unemployment increases, more families and individuals become eligible for SNAP, and SNAP enrollment increases. When a recovery gets underway and jobs are created, unemployment falls, and the number of families eligible for SNAP, and SNAP enrollment decline. That makes this food assistance program the only real counter-cyclical program in the United States. Relative to low food security, very low food security appears to have responded more noticeably to the higher SNAP benefit levels.

The persistence of high levels of food insecurity into 2014 is thus largely due to underlying weakness in the recovery from the Great Recession of 2007-2009, especially the extraordinarily slow recovery of jobs in the economy. It is also the result of changes in the structure of labor markets, work, and job stability. Emergence of "contingent labor," companies ability and willingness to rely on contract labor and temporary jobs that do not provide benefits, and to adjust their demand for labor practically in real time by notifying workers on

Exhibit 7 **Numbers of people in the United States living in households with very low food insecurity on the adult or household scale, 2000-2013.**



Source: Coleman-Jensen, et al., 2014[11]. (People in households with elderly can be of any age.)

a daily basis as to whether they are needed, all have made work, earnings, and income less stable. Volatility in earnings for wage workers may be the "new normal," and its effects can be seen in persistent poverty and food insecurity (Exhibit 8).

Effects of efforts to reduce or eliminate SNAP benefits, and other social infrastructure that provide support for U.S. working families are likely reflected in the reductions in both the number of people receiving SNAP and the average SNAP benefits per person from 2013 to 2014 (Exhibit 9). These declines in SNAP benefits and participation are, in turn, likely a factor in the persistence of high food insecurity levels from 2013 to 2014.

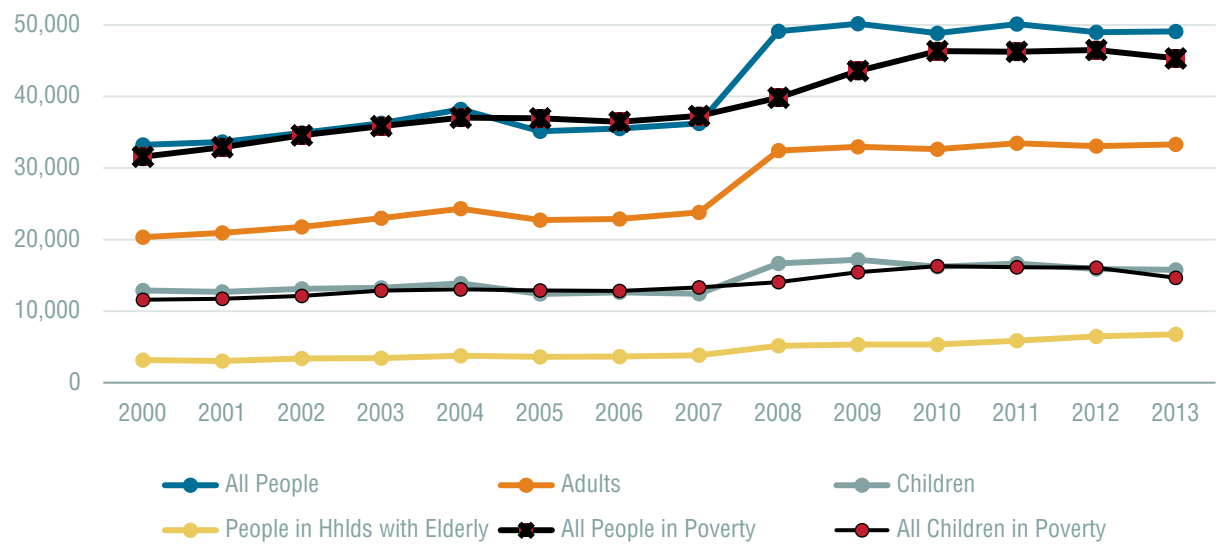
Conclusion

Food insecurity in the US was at an unacceptably high level in 2010, and remained so through 2014. The costs attributable to food insecurity are also unacceptably high. The extraordinarily slow recovery of employment from the Great Recession is a key factor in persistent food insecurity in the United States, however changes in labor market structures and practices also play a role.

The health-related costs associated with food insecurity are clearly high. Though we estimated costs related to several disease conditions that are plausibly attributable to food insecurity, there are others that we did not find sufficient evidence to estimate. What is clear is that the health-related costs of food insecurity and hunger are high, and are likely to increase unless addressed. The Affordable Care Act has provided several windows of opportunity for the healthcare system to engage with and contribute to viable solutions to food insecurity and hunger, and these need to be implemented and supported.

The public and private social infrastructures that have emerged in response to food insecurity and hunger in the United States have very large associated costs, but it is important to acknowledge that both the public and private food assistance systems meet multiple objectives, some of which are not directly related to reducing food insecurity. SNAP is our largest and

Exhibit 8 **Numbers of people in the United States living in food-insecure households by age group, with the numbers of all people and children in households with incomes below poverty, 2000-2013**



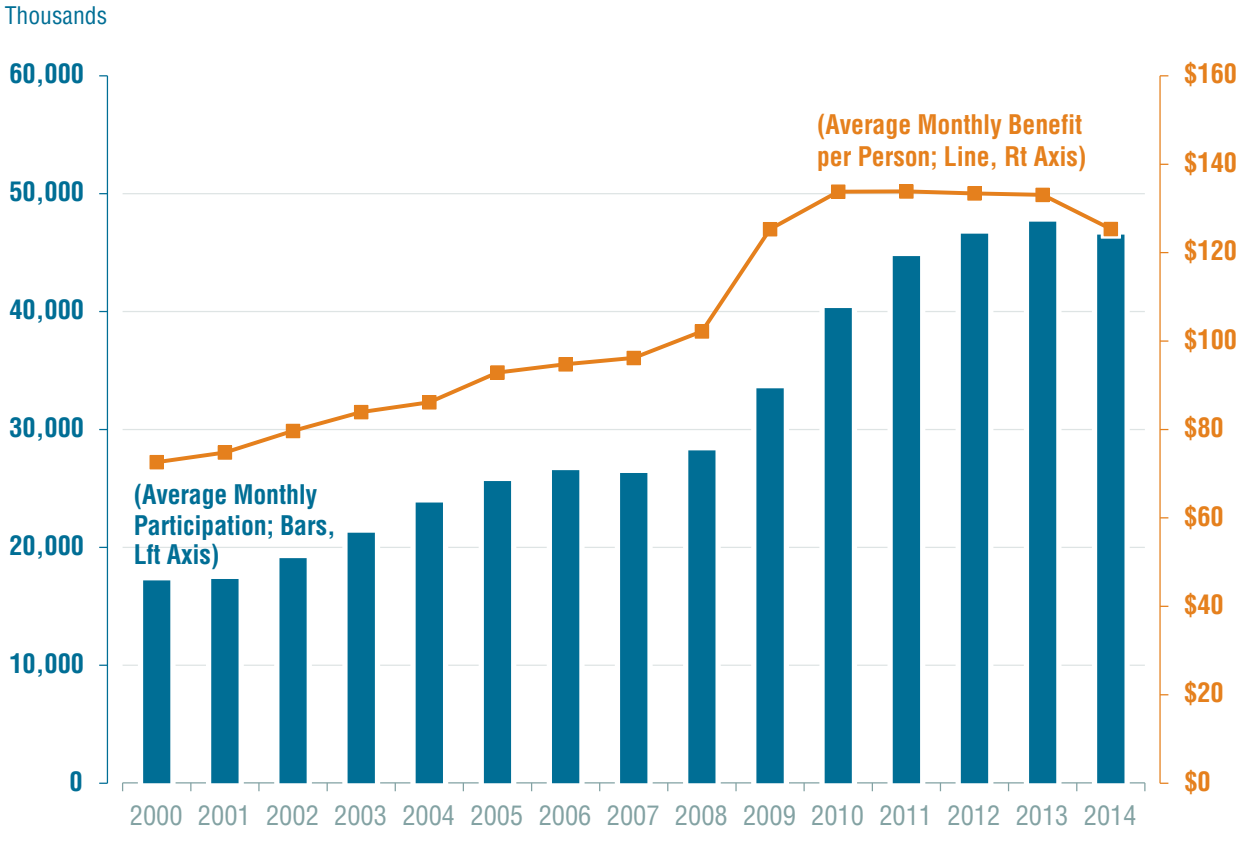
*Though data on poverty in the US in 2014 will be released by the Census Bureau later this month, they are currently only available through 2013.

most effective counter-cyclical program to offset the inevitable downturns in economic activity and availability of jobs that is systemically built into the U.S. economy. WIC provides nutrition education and medical services in addition to food targeted specifically to pregnant and lactating mothers, and infants and children.

In addition to providing much needed food and other services for low-income and food-insecure families and individuals, the private food assistance system also provides opportunities for corporations to remove unprofitable product from their inventories, reduce their tax burdens, and improve public perceptions of their degree of social responsibility. In addition, both the public and private food assistance systems provide much-needed jobs, many of which pay very well.

It is also extremely important to note that the public and private food assistance systems comprise complementary systems for dealing with food insecurity and hunger, with overlap and interaction between the two systems. And it is necessary to state the obvious fact that the two systems combined are still far from adequate solutions to the problems of food insecurity and hunger. Food insecurity and hunger, like poverty, their main proximal cause, are systemic problems that result from numerous market, policy, and leadership failures. And they will not be eliminated until those systemic failures are acknowledged, addressed, and resolved.

Exhibit 9 **Average monthly number of SNAP participants, and average monthly per person benefit level, 2000-2014.**



Source: USDA Food and Nutrition Service; SNAP program data (http://www.fns.usda.gov/pd/supplemental-nutrition-assistance-program-snap)

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Exhibit A1 **Health conditions for which information was available to calculate population attributable fractions indicating the proportion of cases in the population attributable to food insecurity.**

	Relationship	AOR*	RR*	AF*	Source
1)	HFI & Child non-perinatal hospitalization (yes-no):	1.31	1.23	4.55%	Cook, et al., J Nut, 2004[19]
2)	HHLD FI & Caregivers' report of child health status fair/poor:	1.90	1.73	12.47%	Cook, et al., J Nut, 2004[19]
3)	HFI & Caregivers' report of PEDS 1 concerns:	1.76	1.60	10.87%	Rose-Jacobs, et al., Peds, 2008[20]
4)	HHLD FI & Caregivers' report of PEDS 2 concerns:	1.46	1.43	9.09%	Cook, et al., Adv Nut, 2013[21]
5)	CFI & Iron deficiency Anemia:	2.40	2.01	8.25%	Skalicky, et al., J MCH, 2006[22]
6)	HFI & Caregivers' self-reported health status fair/poor:	2.28	1.91	6.81%	Cook, et al., Adv Nut, 2013[21]
7)	HFI & Caregivers' self report of Positive Depressive Symptoms:	3.06	2.28	10.96%	Cook, et al., Adv Nut, 2013[21]
8)	HFI + PDS & Caregivers' report of child health status fair/poor:	2.45	2.12	8.45%	Black, et al., Arch Ped Adoles Med, 2012[23]
9)	HFI + PDS & Child non-perinatal hospitalization (yes-no):	1.35	1.25	2.10%	Black, et al., Arch Ped Adoles Med, 2012[23]
10)	HFI + PDS & Caregivers' report of PEDS 1.	2.49	2.26	9.83%	Black, et al., Arch Ped Adoles Med, 2012[23]
11)	HVLFS % Adults' Depression	3.42	2.97	31.69%	Leung, et al., J Nutr, 2015[24]
12)	FI (based on subset of 4 of the 18 USFSSM questions) & failure of children, 3-5 yrs & 11-17 yrs, to receive recommended well-child visits (postponed recommended care)	1.40	1.09	7.44%	Ma, et al., Ambul Pediatr, 2008[25]
13)	FI (based on subset of 4 of the 18 USFSSM questions) & failure of children, 3-5 yrs & 11-17 yrs, to receive needed health care (foregone needed care)	1.61	1.58	17.66%	Ma, et al., Ambul Pediatr, 2008[25]
14)	FI (based on subset of 4 of the 18 USFSSM questions) & failure of children, 3-5 yrs & 11-17 yrs, to receive prescribed medication (foregone needed care)	2.48	2.42	34.07%	Ma, et al., Ambul Pediatr, 2008[25]
15)	FI and iron deficiency in pregnant women ages 13-54 yrs, based on Ferritin <12 ug/L reported in a 24 hr dietary recall and a 30-day supplement question; NHANES 1999-2010.	2.9	2.05	12.90%	Park; Eicher-Miller J Acad Nutr Diet, 2014[26]
16)	FI, based on 1 ad lib question; "When you were growing up, were there times your family didn't have enough to eat?", and Rheumatoid arthritis (self-reported with any current or past DMARD (disease modifying antirheumatic drugs) use and bilateral swelling, or steroid use and bilateral swelling, in the absence of another autoimmune disease), in women 35-74 yrs old.	1.50	1.49	4.33%	Parks, et al., Ann Rheum Dis, 2013[27]
17)	MFS & LDL cholesterol in males & females 18-50 yrs; NHANES 1999-2002	1.85	1.30	3.68%	Tayie; Zizza Prev Med, 2009[28]
18)	MFS & TRG/HDL ratio in males & females 35-50 yrs; NHANES 1999-2002	1.98	1.33	4.05%	Tayie; Zizza Prev Med, 2009[28]
19)	H LFS & Triglycerides in males & females 35-50 yrs; NHANES 1999-2002	1.91	1.31	3.64%	Tayie; Zizza Prev Med, 2009[28]
20)	H Severe FI (6-10 Adult Scale items affirmed) & Diabetes in Adults ages >20 yrs, NHANES 1999-2002.	2.20	1.89	7.89%	Seligman, et al., J Gen Inter Med, 2007[29]
21)	HFI & poor Diabetes Control in adults ages >21 yrs w DM, from clinics in Boston.	1.97	1.40	5.00%	Berkowitz, et al, Diabetes Care, 2014[30]
22)	FI w/o Hunger (HLFS) & Major Depressive Disorder in Women 20-39 yrs old in a subsample of NHANES 1999-2004 receiving MDD measurement.	2.76	2.43	10.32%	Beydoun; Wang J Affect Disord, 2010[31]

	Relationship	AOR*	RR*	AF*	Source
23)	HFI & Birth Defects (NTD, Orofacial Clefts, Conotruncal Heart Defects) in newborns.	1.41	1.12	1.11%	Carmichael, et al., J Nutr, 2007[32]
24)	HFI, SES, & Dental Caries in Children 5-17 yrs in the NHANES, 2007-2008.	2.51	2.01	15.34%	Chi, et al., Am J Public Health, 2014[33]
25)	VLFS & T2D in Latina Women, 35-60 yrs old	3.33	1.61	7.79%	Fitzgerald, et al., Ethn Dis, 2011[34]
26)	MFS & MDE in Mothers age >18 yrs in the Fragile Families data, 1998-2000.	1.40	1.32	5.53%	Whitaker, et al., Pediatrics, 2006[35]
27)	FI & MDE in Mothers age >18 yrs in the Fragile Families data, 1998-2000.	2.20	1.88	9.10%	Whitaker, et al., Pediatrics, 2006[35]
28)	MFS & GAD in Mothers age >18 yrs in the Fragile Families data, 1998-2000.	1.70	1.66	11.13%	Whitaker, et al., Pediatrics, 2006[35]
29)	FI & GAD in Mothers age >18 yrs in the Fragile Families data, 1998-2000.	2.30	2.20	13.93%	Whitaker, et al., Pediatrics, 2006[35]
30)	MFS & Either MDE or GAD in Mothers age >18 yrs in the Fragile Families data, 1998-2000.	1.40	1.32	5.46%	Whitaker, et al., Pediatrics, 2006[35]
31)	FI & Either DME or GAD in Mothers age >18 yrs in the Fragile Families data, 1998-2000.	2.20	1.86	8.70%	Whitaker, et al., Pediatrics, 2006[35]
32)	MFS & Aggression in 3-yr-old Children of Mothers age >18 yrs in the Fragile Families data, 1998-2000.	1.50	1.45	7.53%	Whitaker, et al., Pediatrics, 2006[35]
33)	FI & Aggression in 3-yr-old Children of Mothers age >18 yrs in the Fragile Families data, 1998-2000.	1.90	1.68	8.11%	Whitaker, et al., Pediatrics, 2006[35]
34)	MFS & Anxiety/Depression in 3-yr-old Children of Mothers age >18 yrs in the Fragile Families data, 1998-2000.	1.80	1.68	10.75%	Whitaker, et al., Pediatrics, 2006[35]
35)	FI & Anxiety/Depression in 3-yr-old Children of Mothers age >18 yrs in the Fragile Families data, 1998-2000.	2.20	1.99	10.97%	Whitaker, et al., Pediatrics, 2006[35]
36)	MFS & Inattention/Hyperactivity in 3-yr-old Children of Mothers age >18 yrs in the Fragile Families data, 1998-2000.	1.60	1.53	8.89%	Whitaker, et al., Pediatrics, 2006[35]
37)	FI & Inattention/Hyperactivity in 3-yr-old Children of Mothers age >18 yrs in the Fragile Families data, 1998-2000.	1.90	1.77	9.29%	Whitaker, et al., Pediatrics, 2006[35]
38)	MFS & Any of the Three Behavior Problems in 3-yr-old Children of Mothers age >18 yrs in the Fragile Families data, 1998-2000.	1.60	1.45	7.12%	Whitaker, et al., Pediatrics, 2006[35]
39)	FI & Any of the Three Behavior Problems in 3-yr-old Children of Mothers age >18 yrs in the Fragile Families data, 1998-2000.	2.10	1.77	8.01%	Whitaker, et al., Pediatrics, 2006[35]
40)	FI & Poor Glycemic Control in Adult Diabetics in the Immigration, Culture & Healthcare Study, San Francisco, CA, 2008-2009.	1.46	1.27	10.17%	Seligman, et al., J Gen Inter Med, 2007[29]
41)	FI & severe obesity in pregnant women ≤400% poverty level in the Pregnancy, Infection, and Nutrition (PIN) cohort in NC, 2001-2005.	2.97	2.07	7.17%	Laraia, et al, J Am Diet Assoc, 2010[36]
42)	HFI and poor glycemic control among diabetics ≥20 yrs old in the NHANES 1999-2008.	1.53	1.42	4.16%	Berkowitz, et al., Diabetes Care, 2013[37]
43)	HFI and poor LDL control among diabetics ≥20 yrs old in the NHANES 1999-2008.	1.86	1.32	2.37%	Berkowitz, et al., Diabetes Care, 2013[37]

*Abbreviations: AOR=Adjusted Odds Ratio; CFI=Child food insecurity; DMARD=Disease modifying antirheumatic drugs; DM=Diabetes mellitus; FI=Food insecurity; HDL=High-density lipoprotein; GAD=Generalized anxiety disorder; HFI=Household food insecurity; HVLFS=Household very low food security; LDL=Low-density lipoprotein; LFS=Low food security; MDD=Major depressive disorder; MDE=Major depressive episode; MFS=Marginal food security; NHANES=National Health and Nutrition Examination Survey; NTD=Neural tube defects; PAF=Population attributable fraction; PEDS=Parents' evaluation of developmental status; PDS=Positive depression screen; RR=Relative risk; SES=Socio-economic status; T2D=Type two diabetes; TRG=Triglycerides; USFSSM=US Food Security Survey Module; VLFS=Very low food security.

Exhibit A2 **Detailed description of costs attributable to food insecurity by condition**

Sources of Costs, 2014 Report	Costs Based on New Evidence ($Billions 2014 Dollars)	Types of Costs, 2010 Report	Costs From 2010 Report ($Billion 2010 Dollars)	Costs From 2010 Report Inflated to 2014 Dollars (% Change in CPI-U for medical care, 1010-2014=9.674%)	TOTAL
Cost of additional non-neonatal hospital stays among children ages <18 years	$1.82	Hospitalizations	$16.10	$17.66	(Estimate based on new evidence was used)
Cost of additional hospital stays among adults ages 18+ years	$8.19				
Cost of additional ambulatory visits among people all ages	$1.51				
		Migraine	$2.20	$2.41	
Cost of additional dental care visits among people all ages	$0.79				
		Colds	$0.80	$0.88	
Cost or treatment of mental health problems in children ages <18 years	$1.22				
		Depression	$29.20	$32.03	
Cost of treatment of mental health problems in adults ages 18-64 years	$4.75				
		Anxiety	$17.40	$19.08	
Cost of treatment of anemias and other deficiencies in people all ages	$0.85	Iron Deficiency	$0.50	$0.55	(Estimate based on new evidence was used)
		Suicide	$19.70	$21.61	
Treatment of osteoarthritis and other inflammation in joints among adults	$3.37				
		Upper GI Disorders	$5.70	$6.25	
Treatment of diabetes mellitus in people all ages	$4.90				
		Health Status	$38.90	$42.66	
Treatment of hyperlipidemia	$1.41				
Treatment of endocrine system problems related to poor control of diabetes mellitus	$0.81				
Treatment of congenital defects and complications of pregnancy and birth	$0.06				
Indirect costs of lost work time due to workers' illnesses or workers providing care for sick family members	$5.48				
TOTAL health costs	$35.16			$124.92	$160.07
Expenditures for special education in public primary and secondary education	$5.91	Special Education	$6.40	$7.02	(Estimate based on new evidence was used)
		Dropout due to Retention	$6.00	$6.58	
		Dropout due to Absenteeism	$5.80	$6.36	
TOTAL education & food assistance	$5.91			$12.94	$18.85
TOTAL health, education & food assistance					**$178.92**

Millennium Development Goals: Progress Chart to Date

This chart provides an overview of progress on the eight Millennium Development Goals. Progress or lack of progress differs in every state, so regional overviews provide a snapshot at an aggregated level. In some instances, trends are driven by high performance or lack of performance by one or a small group of countries.

Goals and Targets	Africa		Asia				Oceania	Latin America and the Caribbean	Caucasus and Central Asia
	Northern	Sub-Saharan	Eastern	South-Eastern	Southern	Western			
GOAL 1 | Eradicate extreme poverty and hunger									
Reduce extreme poverty by half	low poverty	very high poverty	low poverty	moderate poverty	high poverty	low poverty	—	low poverty	low poverty
Productive and decent employment	large deficit	very large deficit	moderate deficit	large deficit	large deficit	large deficit	very large deficit	moderate deficit	small deficit
Reduce hunger by half	low hunger	high hunger	moderate hunger	moderate hunger	high hunger	moderate hunger	moderate hunger	moderate hunger	moderate hunger
GOAL 2 | Achieve universal primary education									
Universal primary schooling	high enrolment	moderate enrolment	high enrolment	high enrolment	high enrolment	high enrolment	high enrolment	high enrolment	high enrolment
GOAL 3 | Promote gender equality and empower women									
Equal girls' enrolment in primary school	close to parity	close to parity	parity	parity	parity	close to parity	close to parity	parity	parity
Women's share of paid employment	low share	medium share	high share	medium share	low share	low share	medium share	high share	high share
Women's equal representation in national parliaments	moderate representation	moderate representation	moderate representation	low representation	low representation	low representation	very low representation	moderate representation	low representation
GOAL 4 | Reduce child mortality									
Reduce mortality of under-five-year-olds by two thirds	low mortality	high mortality	low mortality	low mortality	moderate mortality	low mortality	moderate mortality	low mortality	low mortality
GOAL 5 | Improve maternal health									
Reduce maternal mortality by three quarters	low mortality	high mortality	low mortality	moderate mortality	moderate mortality	low mortality	moderate mortality	low mortality	low mortality
Access to reproductive health	moderate access	low access	high access	moderate access	moderate access	moderate access	low access	high access	moderate access
GOAL 6 | Combat HIV/AIDS, malaria and other diseases									
Halt and begin to reverse the spread of HIV/AIDS	low incidence	high incidence	low incidence	low incidence	low incidence	low incidence	low incidence	low incidence	low incidence
Halt and reverse the spread of tuberculosis	low mortality	high mortality	low mortality	moderate mortality	moderate mortality	low mortality	moderate mortality	low mortality	moderate mortality
GOAL 7 | Ensure environmental sustainability									
Halve proportion of population without improved drinking water	high coverage	low coverage	high coverage	high coverage	high coverage	high coverage	low coverage	high coverage	moderate coverage
Halve proportion of population without sanitation	moderate coverage	very low coverage	moderate coverage	low coverage	very low coverage	high coverage	very low coverage	moderate coverage	high coverage
Improve the lives of slum-dwellers	low proportion of slum-dwellers	very high proportion of slum-dwellers	moderate proportion of slum-dwellers	moderate proportion of slum-dwellers	moderate proportion of slum-dwellers	moderate proportion of slum-dwellers	moderate proportion of slum-dwellers	moderate proportion of slum-dwellers	—
GOAL 8 | Develop a global partnership for development									
Internet users	moderate usage	low usage	high usage	moderate usage	low usage	high usage	low usage	high usage	high usage

The progress chart operates on two levels. The text in each box indicates the present level of development. The colours show progress made towards the target according to the legend below:

Target met or excellent progress. **Good progress.** **Fair progress.** **Poor progress or deterioration.** **Missing or insufficient data.**

For the regional groupings and country data, see *mdgs.un.org*. Country experiences in each region may differ significantly from the regional average. Due to new data and revised methodologies, this Progress Chart is not comparable with previous versions.

Sources: United Nations, based on data and estimates provided by: Food and Agriculture Organization of the United Nations; Inter-Parliamentary Union; International Labour Organization; International Telecommunication Union; UNAIDS; UNESCO; UN-Habitat; UNICEF; UN Population Division; World Bank; World Health Organization—based on statistics available as of June 2015.

TABLE 1

Demographics & Economic Indicators

	Population						Life expectancy	Human development index (HDI)	Employment	Remittances	Migration		
	total 2013	ages 0-14 (%) 2013	growth (%) 2013	density (per sq. km) 2013	rural (%) 2013	urban (%) 2013	life exp. at birth (years) 2013	score (0-1, 1 is most developed) 2013	employment to pop. ratio (% of total pop. above age 15) 2013	workers' remittances & compensation received (current US$) 2010-2013	net migration (number of people) 2012	number of refugees fleeing 2013	number of refugees granted asylum 2013
World	**7,125,096,708**	**26.3**	**1.2**	**54.9**	**47.0**	**53.0**	**71.0**	**..**	**59.7**	**460,224,036,917**	**..**	**15,202,525[c]**	**15,202,525[c]**
High-income countries	**1,306,396,050**	**17.0**	**0.5**	**25.4**	**20.0**	**80.0**	**79.4**	**..**	**56.0**	**135,694,572,094**	**16,941,482**	**138,948**	**1,590,564**
Low- & middle- income countries	**5,818,700,658**	**28.4**	**1.3**	**74.3**	**52.9**	**47.1**	**69.1**	**..**	**60.6**	**324,529,464,823**	**-16,991,204**	**11,303,167**	**14,136,826**
SUB-SAHARAN AFRICA	**936,257,332**	**43.1**	**2.7**	**39.7**	**63.3**	**36.7**	**56.9**	**..**	**64.7**	**4,571,852,769**	**-1,544,836**	**3,703,925**	**3,005,606**
Angola	21,471,618	47.5	3.1	17.2	57.5	42.5	51.9	0.53	65.2	45,000	65,543	10,297	23,783
Benin	10,323,474	42.8	2.7	91.6	56.9	43.1	59.3	0.48	72.1	207,775,439	-10,000	305	194
Botswana	2,021,144	33.5	0.9	3.6	43.1	56.9	47.4	0.68	62.6	36,036,825	20,000	168	2,773
Burkina Faso	16,934,839	45.5	2.8	61.9	71.8	28.2	56.3	0.39	80.8	120,344,772	-125,000	1,688	29,234
Burundi	10,162,532	44.6	3.1	395.7	88.5	11.5	54.1	0.39	76.9	48,639,474	-20,001	72,652	45,490
Cameroon	22,253,959	43.0	2.5	47.1	46.8	53.3	55.0	0.50	67.4	244,059,167	-50,000	11,442	114,753
Cape Verde	498,897	29.5	0.9	123.8	35.9	64.1	74.9	0.64	62.8	175,619,716	-17,215	27	..
Central African Republic	4,616,417	39.8	2.0	7.4	60.5	39.5	50.1	0.34	72.7	..	10,000	252,865	14,322
Chad	12,825,314	48.4	3.0	10.2	77.8	22.2	51.2	0.37	66.6	..	-120,000	48,644	434,479
Comoros	734,917	42.1	2.4	394.9	71.9	28.1	60.9	0.49	53.9	110,209,759	-10,000	515	..
Congo, Dem. Rep.	67,513,677	45.0	2.7	29.8	58.5	41.5	49.9	0.34	66.2	33,111,317	-75,000	499,541	113,362
Congo, Rep.	4,447,632	42.5	2.5	13.0	35.5	64.5	58.8	0.56	66.1	..	-45,363	11,751	51,037
Côte d'Ivoire	20,316,086	41.3	2.4	63.9	47.2	52.8	50.8	0.45	64.6	373,477,566	50,000	85,729	2,980
Equatorial Guinea	757,014	38.9	2.8	27.0	60.4	39.6	53.1	0.56	79.8	..	20,000	200	..
Eritrea	6,333,135	43.2	3.2	62.7	78.2	21.8	62.8	0.38	78.7	..	55,001	308,022	3,166
Ethiopia	94,100,756	42.7	2.6	94.1	81.4	18.6	63.6	0.44	79.0	624,360,670	-60,001	77,118	433,936
Gabon	1,671,711	38.5	2.4	6.5	13.3	86.7	63.4	0.67	48.9	..	5,000	177	1,594
Gambia, the	1,849,285	45.9	3.2	182.7	41.6	58.4	58.8	0.44	72.0	140,991,052	-13,476	3,434	9,563
Ghana	25,904,598	38.5	2.1	113.8	47.3	52.7	61.1	0.57	66.2	119,296,000	-100,000	21,378	18,681
Guinea	11,745,189	42.3	2.5	47.8	63.8	36.2	56.1	0.39	70.7	93,010,000	-10,000	14,594	8,560
Guinea-Bissau	1,704,255	41.5	2.4	60.6	52.3	47.7	54.3	0.40	68.1	45,635,188	-10,000	1,236	8,535
Kenya	44,353,691	42.2	2.7	77.9	75.2	24.8	61.7	0.54	61.1	1,213,552,387	-50,000	8,589	534,938
Lesotho	2,074,465	36.4	1.1	68.3	73.7	26.3	49.3	0.49	49.7	462,478,612	-19,998	15	30
Liberia	4,294,077	42.9	2.4	44.6	51.1	48.9	60.5	0.41	59.3	383,412,500	-20,000	17,576	53,253
Madagascar	22,924,851	42.4	2.8	39.4	66.2	33.8	64.7	0.50	85.4	..	-5,000	296	12
Malawi	16,362,567	45.3	2.8	173.6	84.1	15.9	55.2	0.41	76.7	28,303,380	..	326	5,796
Mali	15,301,650	47.4	3.0	12.5	61.6	38.4	55.0	0.41	60.6	784,108,011	-302,449	152,864	14,316
Mauritania	3,889,880	40.1	2.4	3.8	41.4	58.6	61.5	0.49	37.2	..	-20,000	34,257	92,767
Mauritius	1,258,653	19.7	0.2	620.0	60.0	40.0	74.5	0.77	53.7	585,154	..	81	..
Mozambique	25,833,752	45.4	2.5	32.9	68.3	31.7	50.2	0.39	77.2	217,053,805	-25,004	56	4,445
Namibia	2,303,315	36.0	1.9	2.8	55.3	44.7	64.3	0.62	49.0	11,479,309	-3,336	1,142	2,332
Niger	17,831,270	50.1	3.9	14.1	81.8	18.2	58.4	0.34	61.4	151,843,055	-28,497	733	57,661
Nigeria	173,615,345	44.4	2.8	190.6	53.9	46.1	52.5	0.50	51.8	20,633,319,234	-300,000	31,664	1,694
Rwanda	11,776,522	42.9	2.7	477.4	73.1	26.9	64.0	0.51	85.4	170,052,937	-44,999	83,937	73,349
São Tomé and Príncipe	192,993	41.6	2.6	201.0	36.1	63.9	66.3	0.56	..	26,511,053	-1,500	31	..
Senegal	14,133,280	43.5	2.9	73.4	56.9	43.1	63.4	0.49	68.7	1,613,911,186	-99,996	19,884	14,247
Sierra Leone	6,092,075	41.6	1.9	84.4	60.8	39.2	45.6	0.37	65.2	67,618,450	-21,000	5,320	2,817
Somalia	10,495,583	47.2	2.9	16.7	61.4	38.6	55.0	..	52.2	..	-150,000	1,121,738	2,425
South Africa	53,157,490	29.5	1.5	43.8	36.2	63.8	56.7	0.66	39.2	970,655,337	-100,000	423	65,881
South Sudan	11,296,173	42.1	4.1	..	81.6	18.4	55.2	..	..	..	865,000	114,467	229,587
Sudan	37,964,306	41.2	2.0	20.7	66.5	33.5	62.0	0.47	45.4	424,392,084	-800,000	649,331	159,857
Swaziland	1,249,514	37.8	1.5	72.6	78.7	21.3	48.9	0.53	44.5	30,002,132	-6,000	109	507
Tanzania	49,253,126	44.9	3.0	55.6	69.8	30.2	61.5	0.49	86.0	59,413,995	-150,000	1,040	102,099
Togo	6,816,982	41.8	2.6	125.3	61.0	39.0	56.5	0.47	75.4	336,597,485	-9,994	10,347	20,613
Uganda	37,578,876	48.4	3.3	188.1	84.6	15.4	59.2	0.48	74.5	931,570,330	-150,000	8,177	220,555
Zambia	14,538,640	46.6	3.2	19.6	60.0	40.0	58.1	0.56	68.8	53,980,262	-40,000	232	23,594
Zimbabwe	14,149,648	39.5	3.1	36.6	67.3	32.7	59.8	0.49	81.9	..	400,000	19,681	6,389
column number	1	2	3	4	5	6	7	8	9	10	11	12	13

TABLE 1

Demographics & Economic Indicators

	Gross domestic product				Military spending	Debt & inflation		Exports & imports of goods & services		Exports & imports of food		Income inequality
	GDP (current million US$) 2012-2013	growth (%) 2012-2013	per capita (current US$) 2012-2013	per capita PPP† (current int'l $) 2012-2013	% of gov't spending 2009-2013	value of external debt (current million US$) 2013	annual inflation, consumer prices (%) 2011-2013	exports (% of GDP) 2011-2013	imports (% of GDP) 2009-2013	exports (% of merchan-dise) 2009-2013	imports (% of merchan-dise) 2009-2013	GINI* index, scale (0-100, 100 is maximal inequality) 2009-2012
World	**75,621,858**	**2.3**	**10,613**	**14,402**	**9.3**	**..**	**2.6**	**29.9**	**29.7**	**8.8**	**8.2**	**..**
High income countries	**51,091,048**	**1.4**	**39,108**	**40,648**	**9.5**	**..**	**1.4**	**30.0**	**29.6**	**8.1**	**8.5**	**..**
Low & middle income countries	**24,576,777**	**5.0**	**4,224**	**8,535**	**..**	**..**	**4.3**	**29.3**	**30.5**	**11.0**	**7.2**	**..**
SUB-SAHARAN AFRICA	**1,643,359**	**4.1**	**1,755**	**3,429**	**7.1**	**..**	**5.2**	**29.6**	**32.9**	**13.2**	**11.1**	**..**
Angola	124,178	6.8	5,783	7,736	13.8	17,455	8.8	55.8	40.7	..	..	..
Benin	8,307	5.6	805	1,791	7.5	1,279	1.0	18.3	33.5	36.9	31.3	43.5
Botswana	14,785	5.8	7,315	15,752	7.6	1,438	5.9	55.1	59.9	2.3	10.1	60.5
Burkina Faso	12,885	6.6	761	1,684	9.0	1,703	0.5	25.1	32.0	31.2	12.1	39.8
Burundi	2,715	4.6	267	772	..	1,102	8.0	7.4	34.2	68.8	30.1	..
Cameroon	29,568	5.6	1,329	2,830	..	2,830	1.9	20.7	28.9	17.2	19.4	..
Cape Verde	1,879	0.5	3,767	6,416	2.3	260	1.5	34.9	52.3	86.2	32.1	..
Central African Republic	1,538	-36.0	333	604	14.8	924	1.5	11.6	21.8	1.2	31.2	..
Chad	13,514	4.0	1,054	2,089	..	232	0.1	32.2	37.5	..	..	43.3
Comoros	599	3.5	815	1,446	..	219	2.3	16.4	61.8	72.7	38.2	..
Congo, Dem. Rep.	32,691	8.5	484	809	10.2	10,093	1.6	34.2	40.4	..	..	..
Congo, Rep.	14,086	3.4	3,167	5,868	..	2,084	6.0	76.5	66.1	0.1	6.9	40.2
Côte d'Ivoire	31,062	8.7	1,529	3,210	9.9	4,905	2.6	45.4	45.6	38.5	14.6	..
Equatorial Guinea	15,581	-4.8	20,582	33,768	52.2	..	6.4	88.5	68.4	..	..	..
Eritrea	3,444	1.3	544	1,196	..	520	..	14.4	23.2	..	..	..
Ethiopia	47,525	10.5	505	1,380	10.3	5,042	8.1	12.5	29.1	66.9	12.1	33.6
Gabon	19,344	5.9	11,571	19,264	..	2,714	0.5	58.7	34.8	0.8	17.1	..
Gambia, the	903	4.8	489	1,661	..	375	5.7	37.0	50.8	92.0	37.3	..
Ghana	48,137	7.6	1,858	3,992	1.2	6,100	11.6	42.2	47.2	54.0	18.3	..
Guinea	6,144	2.3	523	1,253	..	1,605	11.9	28.5	54.6	..	..	33.7
Guinea-Bissau	961	0.3	564	1,407	..	787	0.7	..	..	..	..	..
Kenya	55,243	5.7	1,246	2,795	8.5	5,424	5.7	17.7	33.2	47.9	12.0	..
Lesotho	2,335	5.5	1,126	2,576	..	435	4.9	45.0	105.6	8.9	28.1	54.2
Liberia	1,951	11.3	454	878	3.4	3,366	7.6	32.4	89.5	..	..	..
Madagascar	10,613	2.4	463	1,414	7.5	3,091	5.8	30.1	43.0	26.6	18.6	40.6
Malawi	3,705	5.0	226	780	..	2,472	27.3	46.3	64.2	76.0	11.4	46.2
Mali	10,943	2.1	715	1,642	8.8	2,337	-0.6	31.3	37.7	20.3	13.7	33.0
Mauritania	4,158	6.7	1,069	3,043	..	1,557	4.1	66.7	67.0	22.0	11.0	..
Mauritius	11,929	3.2	9,478	17,714	0.7	9,458	3.5	54.3	66.5	39.4	22.1	35.9
Mozambique	15,630	7.4	605	1,105	3.7	4,600	4.3	30.2	40.3	16.7	10.7	45.7
Namibia	13,113	5.1	5,693	9,583	10.2	..	5.6	43.0	61.1	24.1	13.0	61.3
Niger	7,407	4.1	415	916	..	1,702	2.3	23.3	41.4	8.0	32.9	31.2
Nigeria	521,803	5.4	3,006	5,602	9.8	3,143	8.5	18.0	13.0	5.1	17.8	43.0
Rwanda	7,521	4.7	639	1,474	8.4	1,274	8.0	14.4	31.0	39.4	13.5	50.8
São Tomé and Príncipe	311	4.0	1,610	2,971	..	209	7.1	11.0	47.3	85.3	30.6	33.9
Senegal	14,792	2.8	1,047	2,242	9.9	2,712	0.7	26.2	47.4	31.2	24.1	40.3
Sierra Leone	4,136	5.5	679	1,544	0.0	1,415	10.3	53.1	54.4	..	..	35.4
Somalia	0	..	..	..	..	3,841	..	..	..	..	..	..
South Africa	366,058	2.2	6,886	12,867	3.5	69,989	3.3	31.0	33.2	10.5	6.5	65.0
South Sudan	11,804	13.1	1,045	2,030	..	..	47.3	18.2	42.8	..	..	..
Sudan	66,566	-6.0	1,753	3,373	..	25,326	30.0	9.6	16.1	6.7	18.0	35.3
Swaziland	3,791	2.8	3,034	6,685	..	328	5.6	55.3	59.3	..	..	51.5
Tanzania	43,647	7.3	913	2,443	4.8	5,883	7.9	17.9	31.6	45.2	7.9	37.8
Togo	4,339	5.1	636	1,391	10.1	895	1.8	39.4	56.3	23.0	14.0	46.0
Uganda	24,703	3.3	657	1,674	17.2	4,209	5.5	20.2	30.5	66.1	11.5	44.6
Zambia	26,821	6.7	1,845	3,925	8.4	5,774	7.0	41.9	39.7	10.4	4.4	57.5
Zimbabwe	13,490	4.5	953	1,832	..	9,191	1.6	29.5	57.0	37.1	14.3	..
column number	14	15	16	17	18	19	20	21	22	23	24	25

TABLE 1

Demographics & Economic Indicators

	Population						Life expectancy	Human development index (HDI)	Employment	Remittances	Migration		
	total 2013	ages 0-14 (%) 2013	growth (%) 2013	density (per sq. km) 2013	rural (%) 2013	urban (%) 2013	life exp. at birth (years) 2013	score (0-1, 1 is most developed) 2013	employment to pop. ratio (% of total pop. above age 15) 2013	workers' remittances & compensation received (current US$) 2010-2013	net migration (number of people) 2012	number of refugees fleeing 2013	number of refugees granted asylum 2013
MIDDLE EAST & NORTH AFRICA	**345,448,146**	**30.3**	**1.7**	**40.0**	**39.9**	**60.1**	**71.6**	**..**	**40.6**	**26,014,530,403**	**-1,632,058**	**3,072,026**	**7,388,916**
Algeria	39,208,194	27.8	1.9	16.5	30.5	69.5	71.0	0.72	39.6	209,640,491	-50,002	3,662	94,150
Bahrain	1,332,171	21.0	1.1	1,752.9	11.3	88.7	76.7	0.82	65.0	..	22,081	275	294
Djibouti	872,932	33.7	1.5	37.7	22.8	77.2	61.8	0.47	..	35,645,759	-15,996	762	20,015
Egypt, Arab Rep.	82,056,378	31.1	1.6	82.4	57.0	43.0	71.1	0.68	42.9	19,236,400,000	-215,681	12,834	230,086
Iran, Islamic Rep.	77,447,168	23.8	1.3	47.6	27.7	72.3	74.1	0.75	39.2	1,329,781,000	-300,001	75,043	857,354
Iraq	33,417,476	40.1	2.5	76.9	30.7	69.3	69.5	0.64	35.5	271,000,000	449,998	401,417	246,298
Israel	8,059,500	27.7	1.9	372.4	8.0	92.0	82.1	0.89	59.4	764,800,000	-75,985	1,043	48,325
Jordan	6,460,000	34.0	2.2	72.8	16.8	83.2	73.9	0.75	36.3	3,642,676,056	400,002	1,632	2,712,888
Kuwait	3,368,572	24.8	3.6	189.0	1.7	98.3	74.5	0.81	66.3	4,096,630	299,999	977	635
Lebanon	4,467,390	20.8	1.0	436.7	12.5	87.5	80.1	0.77	44.4	7,863,563,802	500,001	3,824	447,328
Libya	6,201,521	29.4	0.8	3.5	21.8	78.2	75.4	0.78	42.6	..	-238,688	3,322	25,561
Morocco	33,008,150	27.9	1.5	74.0	40.8	59.2	70.9	0.62	45.9	6,881,699,960	-450,000	1,318	1,470
Oman	3,632,444	23.5	9.2	11.7	23.3	76.7	76.9	0.78	59.9	39,011,704	1,029,938	26	138
Qatar	2,168,673	13.6	5.6	186.8	0.9	99.1	78.6	0.85	86.2	574,395,604	499,998	17	130
Saudi Arabia	28,828,870	29.0	1.9	13.4	17.3	82.7	75.7	0.84	51.8	268,773,333	300,000	584	559
Syrian Arab Republic	22,845,550	35.1	2.0	124.4	43.1	56.9	74.7	0.66	38.9	1,622,538,750	-1,500,000	2,468,369	517,255
Tunisia	10,886,500	23.2	1.0	70.1	33.5	66.5	73.6	0.72	41.3	2,290,512,364	-32,941	1,371	730
United Arab Emirates	9,346,129	15.3	1.5	111.8	15.0	85.0	77.1	0.83	76.9	..	514,042	90	603
West Bank & Gaza	4,169,506	40.1	3.0	692.6	25.2	74.8	73.2	0.00	31.6	1,748,291,971	-43,750	96,044	1,994,493
Yemen, Rep.	24,407,381	40.2	2.3	46.2	66.6	33.5	63.1	0.50	40.3	3,342,500,000	-135,000	2,428	241,288
SOUTH ASIA	**1,670,808,253**	**30.1**	**1.3**	**350.2**	**67.8**	**32.2**	**66.9**	**..**	**54.0**	**110,979,835,275**	**-7,076,435**	**2,789,102**	**2,099,360**
Afghanistan	30,551,674	46.6	2.4	46.8	74.1	25.9	60.9	0.47	44.0	537,523,432	-399,999	2,556,556	16,863
Bangladesh	156,594,962	30.0	1.2	1,203.0	67.2	32.8	70.7	0.56	67.8	13,857,127,756	-2,040,559	9,839	231,145
Bhutan	753,947	28.1	1.6	19.8	62.9	37.1	68.3	0.58	70.9	11,804,284	10,000	31,567	..
India	1,252,139,596	29.1	1.2	421.1	68.0	32.0	66.5	0.59	52.2	69,970,360,847	-2,294,049	11,042	188,395
Maldives	345,023	28.7	1.9	1,150.1	56.6	43.4	77.9	0.70	59.1	3,304,787	-53	31	..
Nepal	27,797,457	34.7	1.2	193.9	82.1	17.9	68.4	0.54	81.1	5,551,527,542	-400,570	8,112	46,305
Pakistan	182,142,594	33.8	1.7	236.3	62.1	37.9	66.6	0.54	51.6	14,626,000,000	-1,634,420	48,867	1,616,507
Sri Lanka	20,483,000	25.2	0.8	326.6	81.7	18.3	74.2	0.75	52.6	6,422,186,627	-316,785	123,088	145
EAST ASIA & PACIFIC	**2,005,810,617**	**21.0**	**0.7**	**126.0**	**49.1**	**50.9**	**74.0**	**..**	**67.9**	**81,400,882,159**	**-3,060,546**	**1,031,242**	**547,913**
Australia	23,129,300	19.1	1.7	3.0	10.8	89.2	82.2	0.93	61.5	2,464,661,934	749,997	28	34,503
Brunei Darussalam	417,784	25.3	1.3	79.3	23.4	76.6	78.6	0.85	61.6	..	1,760	1	..
Cambodia	15,135,169	31.1	1.8	85.7	79.7	20.3	71.7	0.59	82.3	175,950,000	-174,997	13,748	68
China	1,357,380,000	18.0	0.5	144.6	46.8	53.2	75.4	0.72	68.0	38,818,824,246	-1,500,000	195,137	301,047
Fiji	881,065	28.9	0.7	48.2	47.0	53.0	69.9	0.72	50.5	203,578,810	-28,720	1,112	5
Hong Kong SAR, China	7,187,500	11.7	0.5	6,845.2	..	100.0	83.8	0.89	57.0	359,850,899	150,000	25	126
Indonesia	249,865,631	28.9	1.2	137.9	47.7	52.3	70.8	0.68	63.5	7,614,419,340	-700,000	14,786	3,206
Japan	127,338,621	13.1	-0.2	349.3	7.5	92.5	83.3	0.89	56.8	2,363,853,398	350,000	157	2,584
Kiribati	102,351	31.9	1.5	126.4	55.9	44.1	68.8	0.61	..	12,766,282	-1,000	20	..
Korea, Dem. Rep.	24,895,480	21.7	0.5	206.8	39.4	60.6	69.8	..	74.4	..	..	1,166	..
Korea, Rep.	50,219,669	14.9	0.4	515.9	17.8	82.2	81.5	0.89	59.1	6,424,800,000	300,000	500	547
Lao PDR	6,769,727	35.2	1.8	29.3	63.5	36.5	68.2	0.57	76.6	59,626,040	-74,998	7,745	..
Macao SAR, China	566,375	12.4	1.7	18,942.3	..	100.0	80.3	..	70.2	48,659,083	35,000	1	1
Malaysia	29,716,965	26.1	1.6	90.4	26.7	73.3	75.0	0.77	57.5	1,395,888,416	450,000	485	97,513
Mongolia	2,839,073	27.3	1.5	1.8	29.6	70.4	67.5	0.70	59.8	255,732,281	-15,001	2,064	9
Myanmar	53,259,018	24.9	0.9	81.5	67.0	33.0	65.1	0.52	75.9	229,419,845	-100,000	479,608	..
New Zealand	4,442,100	20.2	0.8	16.9	13.8	86.2	81.4	0.91	63.6	459,239,419	75,003	17	1,403
Papua New Guinea	7,321,262	38.0	2.1	16.2	87.0	13.0	62.4	0.49	70.7	14,253,845	..	221	9,378
Philippines	98,393,574	34.1	1.7	330.0	55.4	44.6	68.7	0.66	60.6	26,699,667,194	-700,000	726	182
column number	1	2	3	4	5	6	7	8	9	10	11	12	13

TABLE 1

Demographics & Economic Indicators

	Gross domestic product				Military spending	Debt & inflation		Exports & imports of goods & services		Exports & imports of food		Income inequality
	GDP (current million US$) 2012-2013	growth (%) 2012-2013	per capita (current US$) 2012-2013	per capita PPP† (current int'l $) 2012-2013	% of gov't spending 2009-2013	value of external debt (current million US$) 2013	annual inflation, consumer prices (%) 2011-2013	exports (% of GDP) 2011-2013	imports (% of GDP) 2009-2013	exports (% of merchan-dise) 2009-2013	imports (% of merchan-dise) 2009-2013	GINI* index, scale (0-100, 100 is maximal inequality) 2009-2012
MIDDLE EAST & NORTH AFRICA	**1,495,674**	**-0.5**	**4,330**	**11,850**	**11.2**	**..**	**4.4**	**..**	**..**	**5.9**	**17.4**	**..**
Algeria	210,183	2.8	5,361	13,320	14.6	3,006	3.3	33.1	30.3	0.6	19.1	..
Bahrain	32,890	5.3	24,689	43,851	13.6	..	3.2	74.3	47.9	1.7	8.3	..
Djibouti	1,456	5.0	1,668	2,999	..	63	2.4	..	..	0.4	29.3	..
Egypt, Arab Rep.	271,973	2.1	3,314	11,089	5.5	30,230	9.5	17.6	24.7	16.4	17.7	..
Iran, Islamic Rep.	368,904	-5.8	4,763	15,590	9.7	3,319	39.3	..	..	3.7	14.1	..
Iraq	229,327	4.2	6,862	14,951	..	..	1.9	34.0	32.7	0.0	..	29.5
Israel	290,551	3.2	36,051	32,491	15.0	..	1.5	32.9	31.6	3.2	7.5	42.8
Jordan	33,679	2.8	5,213	11,783	13.6	21,030	5.5	42.5	71.3	20.3	17.5	33.7
Kuwait	175,831	8.3	52,197	83,840	10.7	..	2.7	71.6	26.5	0.4	15.3	..
Lebanon	44,352	0.9	9,928	17,174	14.9	28,319	4.0	62.5	76.1	21.4	16.5	..
Libya	74,200	-10.9	11,965	21,046	..	..	2.6	..	..	0.0	12.1	..
Morocco	103,836	4.4	3,093	7,198	10.2	26,743	1.9	33.6	46.9	17.2	12.4	..
Oman	79,656	5.8	21,929	45,334	44.3	..	1.2	62.6	35.9	2.4	9.3	..
Qatar	203,235	6.3	93,714	136,727	8.0	..	3.1	71.7	25.8	0.0	9.1	..
Saudi Arabia	748,450	4.0	25,962	53,644	..	..	3.5	51.8	30.6	0.9	14.9	..
Syrian Arab Republic	0	..	..	..	22.8	3,285	36.7	..	..	21.0	21.0	..
Tunisia	46,994	2.5	4,317	11,124	5.1	19,056	5.8	47.0	56.2	9.7	10.6	35.8
United Arab Emirates	402,340	5.2	43,049	59,845	119.5	..	1.1	98.4	77.7	..	..	..
West Bank & Gaza	11,262	-4.4	2,783	4,921	..	..	2.8	16.6	55.9	..	..	34.5
Yemen, Rep.	35,955	4.2	1,473	3,959	..	3,938	11.0	..	..	6.2	28.7	..
SOUTH ASIA	**2,368,286**	**6.6**	**1,417**	**5,036**	**15.8**	**..**	**7.6**	**23.2**	**27.5**	**13.3**	**5.5**	**..**
Afghanistan	20,310	1.9	665	1,946	8.7	707	7.6	6.3	49.1	13.6	7.5	..
Bangladesh	149,990	6.0	958	2,948	13.0	10,995	7.5	19.5	26.8	3.9	19.5	32.1
Bhutan	1,781	2.0	2,363	7,405	..	1,167	7.0	40.8	62.9	8.5	10.9	38.7
India	1,875,141	6.9	1,498	5,418	15.7	339,452	10.9	25.2	28.1	11.2	3.9	33.6
Maldives	2,300	3.7	6,666	11,657	..	475	2.3	111.3	112.3	98.4	22.5	..
Nepal	19,294	3.8	694	2,245	9.4	1,419	9.0	10.7	37.5	20.5	19.2	32.8
Pakistan	232,287	4.4	1,275	4,602	19.5	36,276	7.7	13.2	19.9	20.0	10.3	29.6
Sri Lanka	67,182	7.3	3,280	9,738	14.5	15,951	6.9	22.5	32.0	26.6	12.1	36.4
EAST ASIA & PACIFIC	**11,413,706**	**7.1**	**5,690**	**10,795**	**..**	**..**	**3.0**	**32.5**	**30.3**	**6.4**	**6.3**	**..**
Australia	1,560,372	2.5	67,463	43,202	6.5	..	2.4	19.9	21.1	13.1	5.8	..
Brunei Darussalam	16,111	-1.8	38,563	71,777	..	..	0.4	76.2	32.5	0.2	15.0	..
Cambodia	15,239	7.4	1,007	3,041	13.2	3,392	2.9	65.7	73.8	4.3	6.3	31.8
China	9,240,270	7.7	6,807	11,907	..	839,732	2.6	26.4	23.8	2.7	5.5	37.0
Fiji	3,855	3.5	4,375	7,750	..	525	2.9	58.8	77.6	64.4	15.9	..
Hong Kong SAR, China	274,013	2.9	38,124	53,216	..	..	4.4	229.6	228.7	10.4	4.4	..
Indonesia	868,346	5.8	3,475	9,561	3.9	213,566	6.4	23.7	25.7	17.7	8.8	38.1
Japan	4,919,563	1.6	38,634	36,223	5.2	..	0.4	16.2	19.0	0.6	8.6	..
Kiribati	169	3.0	1,651	1,856	..	..	..	10.5	110.5	87.7	33.7	..
Korea, Dem. Rep.	0	..	..	..	..	..	..	..	..	..	..	..
Korea, Rep.	1,304,554	3.0	25,977	33,062	13.6	..	1.3	53.9	48.9	1.1	4.9	..
Lao PDR	11,243	8.5	1,661	4,822	1.8	5,489	6.4	37.2	46.1	..	..	36.2
Macao SAR, China	51,753	11.9	91,376	142,599	..	..	5.5	106.7	45.8	3.4	14.0	..
Malaysia	313,159	4.7	10,538	23,338	7.1	163,618	2.1	81.7	72.4	11.0	7.7	46.2
Mongolia	11,516	11.7	4,056	9,435	3.5	18,048	8.6	45.1	67.0	0.9	9.1	..
Myanmar	0	..	..	..	..	1,438	5.5	..	..	19.6	8.3	..
New Zealand	185,788	2.5	41,824	34,732	2.2	..	1.3	29.7	27.8	58.7	10.6	..
Papua New Guinea	15,413	5.5	2,105	2,643	..	14,316	5.0	..	..	27.1	11.0	..
Philippines	272,067	7.2	2,765	6,536	7.1	56,042	3.0	27.9	32.0	10.9	10.4	43.0
column number	14	15	16	17	18	19	20	21	22	23	24	25

TABLE 1

Demographics & Economic Indicators

	Population						Life expectancy	Human development index (HDI)	Employment	Remittances	Migration		
	total 2013	ages 0-14 (%) 2013	growth (%) 2013	density (per sq. km) 2013	rural (%) 2013	urban (%) 2013	life exp. at birth (years) 2013	score (0-1, 1 is most developed) 2013	employment to pop. ratio (% of total pop. above age 15) 2013	workers' remittances & compensation received (current US$) 2010-2013	net migration (number of people) 2012	number of refugees fleeing 2013	number of refugees granted asylum 2013
CONTINUED: **EAST ASIA & PACIFIC**													
Samoa	190,372	37.7	0.8	67.3	80.6	19.4	73.3	0.69	..	158,029,426	-12,690	1	..
Singapore	5,399,200	16.1	1.6	7,713.1	..	100.0	82.3	0.90	65.9	..	400,000	65	3
Solomon Islands	561,231	40.2	2.1	20.1	78.6	21.4	67.7	0.49	63.7	16,506,127	-11,868	61	..
Thailand	67,010,502	18.2	0.3	131.2	52.1	47.9	74.4	0.72	71.7	5,689,777,048	100,000	222	136,499
Timor-Leste	1,180,069	45.8	2.7	79.4	68.5	31.5	67.5	0.62	36.2	33,649,747	-75,000	10	1
Tuvalu	9,876	..	0.2	329.2	42.2	57.8	..	..	..	4,056,908	..	2	..
Vanuatu	252,763	37.1	2.2	20.7	74.5	25.5	71.7	0.62	..	23,710,131	..	1	2
Vietnam	89,708,900	22.7	1.0	289.3	67.7	32.3	75.8	0.64	75.9	8,600,000,000	-200,002	314,105	990
EUROPE & CENTRAL ASIA	**272,357,073**	**21.8**	**0.7**	**43.0**	**39.9**	**60.1**	**72.5**	**..**	**51.4**	**40,833,127,318**	**-660,563**	**211,873**	**715,093**
Albania	2,897,366	20.6	-0.1	105.7	44.6	55.4	77.5	0.72	46.3	1,093,922,787	-50,002	10,084	93
Armenia	2,976,566	20.2	0.3	104.6	37.0	63.0	74.5	0.73	53.2	2,192,193,827	-50,001	12,021	13,732
Austria	8,479,823	14.5	0.6	102.9	34.1	65.9	80.9	0.88	58.0	2,810,256,201	150,001	10	55,598
Azerbaijan	9,416,801	22.2	1.3	113.9	45.9	54.1	70.7	0.75	62.5	1,733,168,000	..	10,813	1,380
Belarus	9,466,000	15.3	0.0	46.7	24.1	75.9	72.5	0.79	52.7	1,213,500,000	-10,000	4,444	604
Belgium	11,182,817	17.0	0.5	369.3	2.2	97.8	80.4	0.88	48.8	11,126,212,172	150,007	78	25,633
Bosnia & Herzegovina	3,829,307	15.7	-0.1	75.1	60.5	39.5	76.3	0.73	32.5	1,928,718,700	-5,000	26,811	6,926
Bulgaria	7,265,115	13.7	-0.6	66.9	26.7	73.3	74.5	0.78	46.4	1,666,959,553	-50,000	1,880	4,320
Croatia	4,255,700	14.9	-0.3	76.0	41.6	58.4	77.1	0.81	42.2	1,496,554,548	-20,000	49,760	684
Cyprus	1,141,166	17.0	1.1	123.5	32.9	67.1	79.8	0.85	53.6	82,887,625	35,000	10	3,883
Czech Republic	10,514,272	14.9	0.0	136.1	26.9	73.1	78.3	0.86	55.4	2,270,011,792	199,999	991	3,184
Denmark	5,614,932	17.6	0.4	132.3	12.7	87.3	80.3	0.90	58.1	1,458,688,185	74,999	10	13,170
Estonia	1,317,997	15.8	-0.4	31.1	32.3	67.7	76.4	0.84	56.5	429,014,931	..	352	70
Finland	5,438,972	16.4	0.5	17.9	16.0	84.0	80.8	0.88	54.9	1,065,762,659	50,001	8	11,252
France	65,939,866	18.2	0.4	120.4	20.9	79.1	82.0	0.88	50.1	23,336,428,869	649,998	98	232,487
Georgia	4,487,200	17.9	-0.1	78.3	46.7	53.3	74.1	0.74	55.8	1,945,284,852	-125,007	6,772	847
Germany	80,651,873	13.1	0.3	231.4	25.1	74.9	81.0	0.91	56.7	15,791,512,071	549,998	175	187,567
Greece	11,027,549	14.7	-0.6	85.6	22.7	77.3	80.6	0.85	38.7	804,752,094	49,996	92	3,485
Hungary	9,893,899	14.7	-0.3	109.3	29.7	70.3	75.3	0.82	46.6	4,325,359,521	75,000	1,220	2,440
Iceland	323,764	20.7	0.9	3.2	6.1	93.9	83.1	0.89	69.8	175,671,220	5,429	2	79
Ireland	4,597,558	21.6	0.2	66.7	37.3	62.7	81.0	0.90	52.6	718,459,819	50,000	9	6,001
Italy	60,233,948	14.1	1.2	204.8	31.3	68.7	82.3	0.87	43.1	7,471,026,821	900,000	66	78,061
Kazakhstan	17,035,275	25.8	1.4	6.3	46.6	53.4	70.5	0.76	68.7	207,247,135	..	2,136	584
Kosovo	1,824,000	27.5	0.9	167.5	..	..	70.8	..	..	1,121,797,308	..	..	..
Kyrgyz Republic	5,719,600	30.4	2.0	29.8	64.5	35.5	70.2	0.63	62.0	2,277,998,114	-175,003	2,311	466
Latvia	2,012,647	14.8	-1.1	32.4	32.5	67.5	74.0	0.81	53.8	762,400,000	-10,000	233	160
Lithuania	2,957,689	15.2		47.2	33.4	66.6	74.2	0.83	53.8	2,059,621,211	-28,394	220	916
Luxembourg	543,360	17.5	2.3	209.8	10.4	89.6	81.8	0.88	54.2	1,818,397,154	25,602	1	2,873
Macedonia, FYR	2,107,158	16.7	0.1	83.6	43.0	57.0	75.2	0.73	39.2	376,055,981	-4,999	1,633	982
Malta	423,374	14.7	0.9	1,323.0	4.9	95.1	80.7	0.83	48.6	33,873,632	4,512	6	9,906
Moldova	3,558,566	16.6	0.0	124.0	55.1	44.9	68.8	0.66	38.6	1,984,920,000	-103,050	2,207	250
Montenegro	621,383	18.7	0.0	46.2	36.4	63.6	74.8	0.79	40.1	423,399,012	-2,500	597	8,476
Netherlands	16,804,432	17.1	0.3	498.4	10.7	89.3	81.1	0.92	60.1	1,565,444,526	50,006	64	74,707
Norway	5,080,166	18.6	1.2	13.9	20.1	79.9	81.5	0.94	62.6	791,457,692	149,997	13	46,106
Poland	38,514,479	15.0	-0.1	125.8	39.4	60.6	76.8	0.83	50.7	6,984,000,000	-38,090	1,429	16,438
Portugal	10,457,295	14.8	-0.5	114.2	37.7	62.3	80.4	0.82	50.4	4,372,365,530	99,995	32	598
Romania	19,981,358	15.1	-0.4	86.9	45.8	54.2	74.5	0.78	52.4	3,518,000,000	-44,999	2,329	1,770
Russian Federation	143,499,861	15.8	0.2	8.8	26.1	73.9	71.1	0.78	60.1	6,750,810,396	1,100,002	74,357	3,458
Serbia	7,164,132	16.2	-0.5	81.9	44.6	55.4	75.1	0.74	40.8	4,022,602,528	-99,999	48,693	57,083
Slovak Republic	5,413,393	15.1	0.1	112.6	46.1	53.9	76.3	0.83	51.1	2,071,747,804	14,999	323	701
column number	1	2	3	4	5	6	7	8	9	10	11	12	13

TABLE 1

Demographics & Economic Indicators

	Gross domestic product				Military spending	Debt & inflation		Exports & imports of goods & services		Exports & imports of food		Income inequality
	GDP (current million US$) 2012-2013	growth (%) 2012-2013	per capita (current US$) 2012-2013	per capita PPP† (current int'l $) 2012-2013	% of gov't spending 2009-2013	value of external debt (current million US$) 2013	annual inflation, consumer prices (%) 2011-2013	exports (% of GDP) 2011-2013	imports (% of GDP) 2009-2013	exports (% of merchandise) 2009-2013	imports (% of merchandise) 2009-2013	GINI* index, scale (0-100, 100 is maximal inequality) 2009-2012
CONTINUED: **EAST ASIA & PACIFIC**												
Samoa	802	-1.1	4,212	5,769	..	238	0.6	30.6	50.3	31.8	27.3	..
Singapore	297,941	3.9	55,182	78,763	25.6	..	2.4	190.5	167.5	2.4	3.5	..
Solomon Islands	1,096	3.0	1,954	2,069	..	135	5.4	54.5	64.6	10.2	17.6	..
Thailand	387,252	1.8	5,779	14,394	7.0	118,466	2.2	73.6	70.3	13.0	5.5	39.4
Timor-Leste	1,270	7.8	1,105	2,076	..	..	11.2	12.1	124.6	30.5	14.4	..
Tuvalu	38	1.3	3,880	3,645	..	..	..	..	..	..	..	..
Vanuatu	828	2.0	3,277	2,991	..	70	1.4	47.8	51.3	85.3	25.0	..
Vietnam	171,390	5.4	1,911	5,294	..	35,811	6.6	83.9	79.8	14.4	8.3	35.6
EUROPE & CENTRAL ASIA	**2,001,154**	**3.7**	**7,348**	**13,966**	**6.4**	**..**	**2.8**	**40.5**	**44.5**	**12.3**	**7.3**	**..**
Albania	12,923	1.4	4,460	9,931	..	5,811	1.9	35.1	52.9	4.5	17.7	29.0
Armenia	10,432	3.5	3,505	7,776	16.8	6,513	5.8	27.0	48.0	30.1	20.3	30.3
Austria	428,322	0.2	50,511	45,079	2.0	..	2.0	53.5	49.9	7.3	7.7	..
Azerbaijan	73,560	5.8	7,812	17,143	21.0	6,048	2.4	48.7	26.9	3.6	15.7	..
Belarus	71,710	0.9	7,575	17,620	4.2	27,123	18.3	61.2	64.0	14.4	9.2	26.5
Belgium	524,806	0.3	46,930	41,575	2.3	..	1.1	82.8	81.4	9.1	8.7	..
Bosnia & Herzegovina	17,851	2.5	4,662	9,536	3.0	7,853	-0.1	32.0	53.1	7.5	17.9	..
Bulgaria	54,480	1.1	7,499	15,732	4.9	48,185	0.9	68.4	69.0	17.6	9.1	34.3
Croatia	57,869	-0.9	13,598	21,351	4.6	..	2.2	42.9	42.5	12.5	12.5	..
Cyprus	21,911	-5.4	25,249	28,224	4.1	..	-0.4	40.1[b]	46.6	38.0	20.0	..
Czech Republic	208,796	-0.7	19,858	29,018	3.2	..	1.4	77.2	71.4	4.9	6.3	26.4
Denmark	335,878	-0.5	59,819	43,782	3.2	..	0.8	54.3	48.5	18.7	13.7	26.9
Estonia	24,880	1.6	18,877	25,823	6.2	..	2.8	86.1	85.2	10.2	10.3	32.7
Finland	267,329	-1.2	49,151	39,740	3.1	..	1.5	38.2	39.1	3.0	7.9	27.8
France	2,806,428	0.3	42,560	37,532	4.8	..	0.9	28.3	29.8	13.2	9.0	..
Georgia	16,140	3.3	3,597	7,160	11.4	11,161	-0.5	44.7	57.6	38.3	16.1	41.4
Germany	3,730,261	0.1	46,251	43,884	4.7	..	1.5	45.6	39.8	5.7	7.8	30.6
Greece	242,230	-3.3	21,966	25,667	4.4	..	-0.9	30.2	33.2	17.8	13.1	34.7
Hungary	133,424	1.5	13,485	23,334	2.4	168,815	1.7	88.8	81.2	8.9	5.2	28.9
Iceland	15,330	3.5	47,349	41,859	0.4	..	3.9	55.7	47.4	47.0	10.5	26.3
Ireland	232,077	0.2	50,478	45,684	1.4	..	0.5	105.3	84.5	11.5	14.4	32.1
Italy	2,149,485	-1.9	35,686	35,281	4.0	..	1.2	28.6	26.3	8.3	10.6	35.5
Kazakhstan	231,876	6.0	13,612	23,214	..	123,430	5.8	38.2	26.7	3.2	9.1	28.6
Kosovo	7,072	3.0	3,877	8,884	..	981	1.8	17.4	49.0	..	..	..
Kyrgyz Republic	7,226	10.5	1,263	3,213	14.0	4,354	6.6	47.2	95.9	28.5	14.1	33.4
Latvia	30,957	4.1	15,381	22,569	3.2	..	2.2	58.8	62.7	19.0	13.8	36.0
Lithuania	45,932	3.3	15,530	25,454	2.4	..	1.1	77.1	78.6	18.2	13.3	32.6
Luxembourg	60,131	2.0	110,665	91,048	1.3	..	1.7	203.3	168.1	9.6	11.0	..
Macedonia, FYR	10,195	3.1	4,838	11,612	4.2	6,215	2.8	53.9	72.8	15.2	12.7	..
Malta	9,642	2.9	22,775	29,127	1.3	..	1.4	93.6	88.9	6.0	10.4	..
Moldova	7,970	8.9	2,240	4,671	0.9	5,393	4.6	43.8	81.5	57.6	13.7	30.6
Montenegro	4,416	3.3	7,107	14,132	..	2,380	2.2	41.8	62.1	..	..	30.6
Netherlands	853,539	-0.7	50,793	46,162	3.0	..	2.5	82.9	72.6	15.6	12.4	28.9
Norway	512,580	0.6	100,898	64,406	4.2	..	2.1	38.9	28.2	7.3	9.3	26.8
Poland	525,866	1.7	13,654	23,690	5.4	..	1.0	46.1	44.2	12.6	8.7	32.8
Portugal	227,324	-1.4	21,738	27,804	4.5	..	0.3	39.3	38.3	11.6	15.5	..
Romania	189,638	3.5	9,491	18,974	4.1	117,651	4.0	42.0	42.5	10.2	8.2	27.3
Russian Federation	2,096,777	1.3	14,612	25,248	15.3	..	6.8	28.4	22.5	3.1	13.2	39.7
Serbia	45,520	2.6	6,354	13,020	5.3	28,446	7.7	40.8	51.9	..	..	29.7
Slovak Republic	97,707	1.4	18,049	26,497	3.2	..	1.4	93.0	88.4	4.9	6.2	26.6
column number	14	15	16	17	18	19	20	21	22	23	24	25

TABLE 1

Demographics & Economic Indicators

	Population						Life expectancy	Human development index (HDI)	Employment	Remittances	Migration		
	total 2013	ages 0-14 (%) 2013	growth (%) 2013	density (per sq. km) 2013	rural (%) 2013	urban (%) 2013	life exp. at birth (years) 2013	score (0-1, 1 is most developed) 2013	employment to pop. ratio (% of total pop. above age 15) 2013	workers' remittances & compensation received (current US$) 2010-2013	net migration (number of people) 2012	number of refugees fleeing 2013	number of refugees granted asylum 2013
CONTINUED: **EUROPE & CENTRAL ASIA**													
Slovenia	2,059,953	14.3	0.1	102.3	50.2	49.8	80.3	0.87	51.8	685,996,280	22,000	28	213
Spain	46,617,825	15.4	-0.3	93.5	20.9	79.1	82.4	0.87	43.3	9,583,975,225	599,997	56	4,637
Sweden	9,600,379	16.9	0.8	23.6	14.5	85.5	81.7	0.90	58.9	1,166,877,137	200,000	17	114,175
Switzerland	8,087,875	14.8	1.1	204.7	26.2	73.8	82.7	0.92	65.2	3,148,894,363	320,000	15	52,464
Tajikistan	8,207,834	35.9	2.5	58.6	73.4	26.6	67.4	0.61	60.7	3,625,512,075	-99,999	661	2,048
Turkey	74,932,641	25.7	1.3	97.4	27.6	72.4	75.2	0.76	44.5	1,135,000,000	350,000	66,607	609,938
Turkmenistan	5,240,072	28.5	1.3	11.2	50.7	49.4	65.5	0.70	55.0	..	-24,998	517	45
Ukraine	45,489,600	14.5	-0.2	78.5	30.7	69.3	71.2	0.73	54.7	9,667,000,000	-40,006	5,172	2,968
United Kingdom	64,106,779	17.6	0.6	265.0	17.9	82.1	81.0	0.89	57.4	1,711,912,725	900,000	142	126,055
Uzbekistan	30,243,200	28.6	1.6	71.1	63.8	36.2	68.2	0.66	55.1	..	-200,000	4,965	141
LATIN AMERICA & CARIBBEAN	**588,019,237**	**27.2**	**1.1**	**30.8**	**21.0**	**79.0**	**74.7**	**..**	**62.4**	**60,729,236,901**	**-3,016,766**	**494,999**	**379,938**
Argentina	41,446,246	24.2	0.9	15.1	8.5	91.5	76.2	0.81	56.2	532,412,910	-99,998	388	3,362
Bahamas, the	377,374	21.3	1.4	37.7	17.3	82.7	75.1	0.79	64.1	..	9,672	210	15
Belize	331,900	33.9	2.4	14.6	55.7	44.3	73.9	0.73	56.0	74,401,710	7,596	40	21
Bolivia	10,671,200	34.9	1.7	9.9	32.3	67.7	67.2	0.67	70.6	1,201,339,479	-125,000	601	748
Brazil	200,361,925	24.1	0.9	24.0	14.8	85.2	73.9	0.74	65.6	2,537,114,311	-190,000	986	5,196
Chile	17,619,708	21.1	0.9	23.7	10.8	89.2	79.8	0.82	58.1	300,000	30,000	596	1,743
Colombia	48,321,405	27.7	1.3	43.6	24.1	75.9	74.0	0.71	60.3	4,119,493,057	-120,000	396,635	224
Costa Rica	4,872,166	23.5	1.4	95.4	25.0	75.0	79.9	0.76	58.2	596,399,211	64,260	462	20,569
Cuba	11,265,629	16.2	0.0	105.8	23.1	76.9	79.2	0.81	54.9	..	-140,000	7,428	384
Dominican Republic	10,403,761	30.2	1.2	215.3	22.9	77.1	73.5	0.70	55.2	4,485,500,000	-140,000	306	721
Ecuador	15,737,878	30.0	1.6	63.4	36.7	63.3	76.5	0.71	65.7	2,458,803,089	-30,000	707	123,133
El Salvador	6,340,454	30.0	0.7	306.0	34.2	65.8	72.3	0.66	58.2	3,971,079,071	-225,002	9,638	44
Guatemala	15,468,203	40.4	2.5	144.3	49.3	50.7	72.0	0.63	65.8	5,370,644,500	-75,000	6,615	160
Guyana	799,613	36.1	0.5	4.1	71.6	28.4	66.2	0.64	54.5	328,200,000	-32,770	800	11
Haiti	10,317,461	35.0	1.4	374.4	43.8	56.2	63.1	0.47	61.2	1,780,995,274	-175,001	38,660	3
Honduras	8,097,688	35.2	2.0	72.4	46.5	53.5	73.8	0.62	60.0	3,136,002,216	-50,000	3,301	16
Jamaica	2,714,734	27.2	0.3	250.7	45.7	54.3	73.5	0.72	53.8	2,160,966,584	-80,000	1,503	21
Mexico	122,332,399	28.5	1.2	62.9	21.3	78.7	77.4	0.76	58.5	23,022,469,746	-1,200,191	9,396	1,831
Nicaragua	6,080,478	32.8	1.5	50.5	41.9	58.1	74.8	0.61	58.8	1,081,300,000	-120,000	1,538	189
Panama	3,864,170	28.3	1.6	52.0	34.0	66.0	77.6	0.77	62.8	451,900,000	28,575	105	17,665
Paraguay	6,802,295	32.4	1.7	17.1	40.8	59.2	72.3	0.68	66.6	591,044,000	-40,000	95	136
Peru	30,375,603	28.8	1.3	23.7	22.0	78.0	74.8	0.74	73.3	2,707,246,390	-300,001	4,765	1,162
Suriname	539,276	27.4	0.9	3.5	33.9	66.1	71.0	0.70	50.3	6,993,693	-5,000	17	1
Trinidad & Tobago	1,341,151	20.8	0.3	261.4	91.3	8.7	69.9	0.77	60.4	126,068,000	-15,000	336	20
Uruguay	3,407,062	21.8	0.3	19.5	5.0	95.0	77.1	0.79	61.3	122,748,000	-30,000	146	203
Venezuela, RB	30,405,207	28.5	1.5	34.5	11.1	88.9	74.6	0.76	60.2	118,000,000	40,000	8,395	204,340
NORTH AMERICA	**351,348,142**	**19.2**	**0.8**	**19.3**	**18.7**	**81.3**	**79.1**	**..**	**58.2**	**9,119,208,234**	**6,100,001**	**4,861**	**424,011**
Canada	35,154,279	16.4	1.2	3.9	18.5	81.5	81.4	0.90	61.5	1,199,321,836	1,099,999	100	160,349
United States	316,128,839	19.5	0.7	34.6	18.7	81.3	78.8	0.91	57.8	6,695,000,000	5,000,002	4,761	263,662
column number	1	2	3	4	5	6	7	8	9	10	11	12	13

TABLE 1

Demographics & Economic Indicators

	Gross domestic product				Military spending	Debt & inflation		Exports & imports of goods & services		Exports & imports of food		Income inequality
	GDP (current million US$) 2012-2013	growth (%) 2012-2013	per capita (current US$) 2012-2013	per capita PPP† (current int'l $) 2012-2013	% of gov't spending 2009-2013	value of external debt (current million US$) 2013	annual inflation, consumer prices (%) 2011-2013	exports (% of GDP) 2011-2013	imports (% of GDP) 2009-2013	exports (% of merchandise) 2009-2013	imports (% of merchandise) 2009-2013	GINI* index, scale (0-100, 100 is maximal inequality) 2009-2012
CONTINUED: **EUROPE & CENTRAL ASIA**												
Slovenia	47,987	-1.0	23,295	28,859	2.8	..	1.8	74.7	68.7	4.0	8.4	24.9
Spain	1,393,040	-1.2	29,882	33,094	3.1	..	1.4	31.6	28.1	15.3	11.1	35.8
Sweden	579,680	1.5	60,381	44,658	3.7	..	0.0	43.8	38.9	5.8	10.4	..
Switzerland	685,434	1.9	84,748	56,950	4.3	..	-0.2	72.1	60.0	4.0	6.0	..
Tajikistan	8,508	7.4	1,037	2,512	..	2,358	5.0	19.2	68.3	..	..	30.8
Turkey	822,135	4.1	10,972	18,783	6.8	351,054	7.5	25.6	32.2	11.2	4.6	40.0
Turkmenistan	41,851	10.2	7,987	14,004	..	298	..	73.3	44.4	..	..	..
Ukraine	177,431	1.9	3,900	8,790	6.4	120,136	-0.3	46.9	55.4	26.8	10.3	24.8
United Kingdom	2,678,455	1.7	41,781	38,259	5.3	..	2.6	29.8	31.7	8.0	13.4	38.0
Uzbekistan	56,796	8.0	1,878	5,168	..	6,047	..	27.7	31.6	..	..	..
LATIN AMERICA & CARIBBEAN	**5,657,372**	**2.5**	**9,621**	**14,517**	**..**	**..**	**3.3**	**22.5**	**24.4**	**21.7**	**7.0**	**..**
Argentina	609,889	2.9	14,715	..	..	103,922	..	14.5	14.8	55.2	2.3	43.6
Bahamas, the	8,420	0.7	22,312	23,264	..	..	0.4	42.0	55.8	25.2	16.1	..
Belize	1,624	1.5	4,894	8,487	4.3	925	0.7	60.9	66.3	76.6	14.1	..
Bolivia	30,601	6.8	2,868	6,131	..	4,189	5.7	44.2	37.2	16.8	6.7	46.6
Brazil	2,245,673	2.5	11,208	15,037	5.7	409,134	6.2	12.6	15.0	34.3	4.9	52.7
Chile	277,199	4.1	15,732	21,942	10.1	..	1.8	32.6	32.9	21.0	7.7	50.8
Colombia	378,415	4.7	7,831	12,424	12.6	78,035	2.0	17.8	20.2	9.2	10.0	53.5
Costa Rica	49,621	3.5	10,185	13,876	..	14,302	5.2	35.1	38.7	34.5	10.5	48.6
Cuba	68,234[c]	2.7[c]	6,051	18,796	..	..	..	20.0	19.1	..	..	..
Dominican Republic	61,164	4.6	5,879	12,186	4.3	17,898	4.8	25.5	31.2	21.7	13.5	45.7
Ecuador	94,473	4.6	6,003	10,890	..	14,728	2.7	29.2	31.6	31.1	7.3	46.6
El Salvador	24,259	1.7	3,826	7,764	5.6	11,030	0.8	26.4	45.8	21.9	15.2	41.8
Guatemala	53,797	3.7	3,478	7,297	3.4	13,177	4.3	23.7	35.0	43.9	13.3	52.4
Guyana	2,990	5.2	3,739	6,546	..	1,444	1.8	..	..	64.0	15.6	..
Haiti	8,459	4.3	820	1,703	..	977	5.9	18.2	52.9	..	..	..
Honduras	18,550	2.6	2,291	4,593	4.3	3,048	5.2	47.9	69.5	56.9	16.7	57.4
Jamaica	14,362	1.3	5,290	8,893	2.7	12,670	9.3	30.4	53.0	21.5	17.4	..
Mexico	1,260,915	1.1	10,307	16,370	..	390,245	3.8	31.7	32.4	6.4	6.6	48.1
Nicaragua	11,256	4.6	1,851	4,643	4.4	6,103	7.1	40.5	52.1	49.3	17.2	45.7
Panama	42,648	8.4	11,037	19,416	..	13,267	4.0	79.8	75.0	67.1	13.8	51.9
Paraguay	29,009	14.2	4,265	8,093	6.5	9,922	2.7	49.4	44.7	65.3	8.0	48.0
Peru	202,350	5.8	6,662	11,774	7.4	50,596	2.8	23.7	24.6	19.9	9.8	45.3
Suriname	5,299	2.9	9,826	16,071	..	..	2.0	..	..	1.8	14.3	..
Trinidad & Tobago	24,641	1.6	18,373	30,446	4.0	..	5.2	63.2	40.0	2.5	11.2	..
Uruguay	55,708	4.4	16,351	19,594	6.2	..	8.6	24.0	27.3	66.7	11.3	41.3
Venezuela, RB	438,284	1.3	14,415	18,198	..	108,723	40.6	26.2	24.2	0.1	14.7	..
NORTH AMERICA	**18,600,528**	**2.2**	**52,940**	**52,013**	**15.1**	**..**	**1.2**	**14.7**	**17.7**	**10.4**	**5.7**	**..**
Canada	1,826,769	2.0	51,964	42,753	5.9	..	0.9	30.1	31.8	10.7	7.6	33.7
United States	16,768,100	2.2	53,042	53,042	16.5	..	1.5	13.5	16.5	10.2	5.3	41.1
column number	14	15	16	17	18	19	20	21	22	23	24	25

.. Data not available.
0 Zero, or rounds to zero at displayed number of decimal.
a Data refers to 2009.
b Data refers to 2010.
c Data refers to 2011.
d Data refers to 2012.
e Data refers to 2013.
f Data refers to 2014.

† Purchasing Power Parity: a method of currency conversion that equalizes the purchasing power of different currencies.
* GINI index measures the extent to which the distribution of income or consumption expenditure among individuals or households within an economy deviates from a perfectly equal distribution.

Sources for tables on page 235.

TABLE 2

MDG 1: Eradicate Extreme Poverty

	People living in poverty					Distribution of income by population quintiles					
	below national poverty line (% of total population) 2009-2013	below national rural poverty line (% of rural population) 2009-2013	below national urban poverty line (% of urban population) 2009-2013	below $2 PPP† per day (%) 2009-2012	below $1.25 PPP† per day (%) 2009-2012	share held by lowest 20% 2009-2012	share held by second 20% 2009-2012	share held by third 20% 2009-2012	share held by fourth 20% 2009-2012	share held by highest 20% 2009-2012	share of lowest pop. quintile in national consumption (%) 2008-2012
World	..	..		..	**14.5**	..	..	..	..	..	..
High-income countries	..	..	..	..	..	..	..	..	..	..	..
Low- & middle-income countries	..	..	..	**36.3**	**17.0**	..	..	..	..	..	..
SUB-SAHARAN AFRICA	..	..	..	**69.5**	**46.8**	..	..	..	..	..	..
Angola	..	..	..	..	..	..	..	..	..	..	5.4
Benin	36.2	39.7	31.4	74.3	51.6	6.1	9.4	13.6	20.4	50.5	6.1
Botswana	19.3	24.3	11.0	27.8	13.4	2.8	5.7	9.5	16.9	65.0	2.8
Burkina Faso	46.7	52.8	25.2	72.4	44.5	6.7	10.6	14.8	20.9	47.0	6.7
Burundi	..	..	..	..	..	..	..	..	..	..	..
Cameroon	..	..	..	..	..	..	..	..	..	..	..
Cape Verde	..	..	..	..	..	..	..	..	..	..	..
Central African Republic	..	..	..	..	..	..	..	..	..	..	3.4
Chad	46.7	52.5	20.9	60.5	36.5	4.9	9.7	14.8	22.0	48.7	4.9
Comoros	..	..	..	..	..	..	..	..	..	..	..
Congo, Dem. Rep.	63.6	64.9	61.6	..	..	..	..	..	..	..	..
Congo, Rep.	46.5	74.8	..	57.3	32.8	5.6	10.3	15.5	22.7	45.9	..
Côte d'Ivoire	..	..	..	..	..	..	..	..	..	..	5.2
Eritrea	..	..	..	..	..	..	..	..	..	..	..
Ethiopia	29.6	30.4	25.7	72.2	36.8	8.0	12.4	16.3	21.6	41.9	8.0
Gabon	..	..	..	..	..	..	..	..	..	..	..
Gambia, the	48.4	73.9	32.7	..	..	..	..	..	..	..	..
Ghana	24.2	37.9	10.6	..	..	..	..	..	..	..	..
Guinea	55.2	64.7	35.4	72.7	40.9	7.6	12.1	16.5	22.3	41.6	7.6
Guinea-Bissau	69.3	75.6	51.0	..	..	..	..	..	..	..	..
Kenya	..	..	..	..	..	..	..	..	..	..	..
Lesotho	57.1	61.2	39.6	73.4	56.2	2.8	6.7	11.9	20.5	58.0	2.8
Liberia	..	..	..	..	..	..	..	..	..	..	..
Madagascar	75.3	81.5	51.1	95.1	87.7	6.5	10.7	14.6	20.3	48.0	6.5
Malawi	50.7	56.6	17.3	88.1	72.2	5.4	9.1	13.4	19.9	52.2	5.4
Mali	43.6	50.6	18.9	78.8	50.6	8.0	12.0	16.3	22.4	41.3	8.0
Mauritania	..	..	..	..	..	..	..	..	..	..	6.0
Mauritius	..	..	..	1.9	0.4	7.4	11.7	15.8	21.6	43.6	7.4
Mozambique	54.7	56.9	49.6	82.5	60.7	5.2	9.5	13.7	20.1	51.5	5.2
Namibia	28.7	37.4	14.6	43.2	23.5	3.4	5.5	9.0	16.0	66.2	3.4
Niger	48.9	55.2	18.6	76.1	40.8	9.0	12.7	16.4	21.4	40.5	9.0
Nigeria	46.0	52.8	34.1	82.2	62.0	5.4	9.6	14.5	21.6	48.9	5.4
Rwanda	44.9	48.7	22.1	82.3	63.0	5.2	8.3	11.9	17.8	56.8	5.2
São Tomé and Príncipe	61.7	59.4	63.8	73.1	43.5	7.5	11.9	16.4	22.6	41.7	7.5
Senegal	46.7	57.1	33.1	60.3	34.1	6.0	10.3	15.0	21.8	46.9	6.0
Sierra Leone	52.9	66.1	31.2	82.5	56.6	7.8	11.6	15.6	21.4	43.6	..
Somalia	..	..	..	..	..	..	..	..	..	..	..
South Sudan	50.6	55.4	24.4	..	..	..	..	..	..	..	..
South Africa	53.8	77.0	39.2	26.2	9.4	2.5	4.3	7.7	15.7	69.9	2.5
Sudan	46.5	57.6	26.5	44.1	19.8	6.8	11.7	16.4	22.7	42.4	6.8
Swaziland	63.0	73.1	31.1	59.1	39.3	4.1	7.4	12.0	20.0	56.6	4.1
Tanzania	28.2	33.3	15.5	73.0	43.5	7.4	11.0	15.0	20.8	45.7	..
Togo	58.7	73.4	34.6	72.8	52.5	4.8	8.6	13.5	21.5	51.6	4.8
Uganda	19.5	22.4	9.6	62.9	37.8	5.8	9.3	13.6	20.3	51.1	5.8
Zambia	60.5	77.9	27.5	86.6	74.3	3.6	6.4	10.4	17.5	62.2	3.6
Zimbabwe	72.3	84.3	46.5	..	..	..	..	..	..	..	0.0
column number	1	2	3	4	5	6	7	8	9	10	11

TABLE 2

MDG 1: Eradicate Extreme Poverty

	People living in poverty					Distribution of income by population quintiles					
	below national poverty line (% of total population) 2009-2013	below national rural poverty line (% of rural population) 2009-2013	below national urban poverty line (% of urban population) 2009-2013	below $2 PPP† per day (%) 2009-2012	below $1.25 PPP† per day (%) 2009-2012	share held by lowest 20% 2009-2012	share held by second 20% 2009-2012	share held by third 20% 2009-2012	share held by fourth 20% 2009-2012	share held by highest 20% 2009-2012	share of lowest pop. quintile in national consumption (%) 2008-2012
MIDDLE EAST & NORTH AFRICA	..	..	..	**11.6**	**1.7**	..	..	..	..	..	..
Algeria	..	..	..	..	..	..	..	..	..	..	..
Djibouti	..	..	..	..	..	..	..	..	..	..	..
Egypt, Arab Rep.	25.2	32.3	15.3	..	..	..	..	..	..	..	..
Iran, Islamic Rep.	..	..	..	..	..	..	..	..	..	..	..
Iraq	18.9	30.6	14.8	21.2	3.9	8.8	13.1	17.1	22.5	38.5	8.8
Jordan	14.4	16.8	13.9	1.2	0.1	8.2	12.0	16.0	21.5	42.3	8.2
Lebanon	..	..	..	..	..	..	..	..	..	..	..
Libya	..	..	..	..	..	..	..	..	..	..	..
Morocco	..	..	..	..	..	..	..	..	..	..	..
Syrian Arab Republic	..	..	..	..	..	..	..	..	..	..	..
Tunisia	15.5	..	..	4.5	0.7	6.8	11.5	16.2	22.6	42.9	6.8
West Bank & Gaza	25.8	19.4	26.1	0.6	0.1	7.7	11.9	15.9	21.9	42.6	..
Yemen, Rep.	..	..	..	..	..	..	..	..	..	..	..
SOUTH ASIA	..	..	..	**60.2**	**24.5**	..	..	..	..	..	..
Afghanistan	35.8	38.3	27.6	..	..	..	..	..	..	..	..
Bangladesh	31.5	35.2	21.3	76.5	43.3	8.9	12.4	16.1	21.3	41.4	8.9
Bhutan	12.0	16.7	1.8	15.2	2.4	6.8	10.8	15.1	21.4	46.0	6.8
India	21.9	25.7	13.7	59.2	23.6	8.5	12.1	15.7	20.8	42.8	8.5
Maldives	..	..	..	..	..	..	..	..	..	..	..
Nepal	25.2	27.4	15.5	56.0	23.7	8.3	12.2	16.2	21.9	41.5	8.3
Pakistan	..	..	..	50.7	12.7	9.6	13.1	16.5	21.3	39.5	9.6
Sri Lanka	6.7	7.6	2.1	23.9	4.1	7.7	11.4	15.3	21.0	44.6	7.7
EAST ASIA & PACIFIC	..	..	..	**22.7**	**7.9**	..	..	..	..	..	..
Cambodia	17.7	20.8	6.4	41.3	10.1	9.0	12.5	16.1	21.2	41.2	9.0
China	..	8.5	..	18.6	6.3	4.7	9.7	15.3	23.2	47.1	4.7
Fiji	..	..	..	..	..	..	..	..	..	..	6.2
Indonesia	11.3	14.2	8.3	43.3	16.2	7.6	11.3	15.6	21.8	43.7	7.6
Kiribati	..	..	..	..	..	..	..	..	..	..	..
Korea, Dem. Rep.	..	..	..	..	..	..	..	..	..	..	..
Lao PDR	23.2	28.6	10.0	62.0	30.3	7.6	11.5	15.5	21.1	44.3	..
Malaysia	1.7	3.4	1.0	2.3	..	4.5	8.7	13.7	21.6	51.5	4.5
Mongolia	27.4	35.5	23.2	..	..	..	..	..	..	..	..
Myanmar	..	..	..	..	..	..	..	..	..	..	0.0
Papua New Guinea	39.9	41.6	29.3	..	..	..	..	..	..	..	..
Philippines	25.2	..	..	41.7	19.0	5.9	9.4	13.9	21.2	49.7	5.9
Samoa	..	..	..	..	..	..	..	..	..	..	..
Solomon Islands	..	..	..	..	..	..	..	..	..	..	0.0
Thailand	12.6	16.7	9.0	3.5	0.3	6.8	10.5	14.6	21.5	46.7	6.8
Timor-Leste	..	..	..	..	..	..	..	..	..	..	..
Tuvalu	..	..	..	..	..	..	..	..	..	..	..
Vanuatu	..	..	..	..	..	..	..	..	..	..	0.0
Vietnam	17.2	22.1	5.4	12.5	2.4	7.0	11.6	16.1	22.2	43.0	..
EUROPE & CENTRAL ASIA	..	..	..	**2.2**	**0.5**	..	..	..	..	..	..
Albania	14.3	15.3	13.6	3.0	0.5	8.9	13.2	17.3	22.8	37.8	8.9
Armenia	32.0	31.7	32.2	15.5	1.8	8.8	12.9	17.0	22.1	39.2	8.8
Azerbaijan	5.3	..	..	..	..	..	..	..	..	..	8.1
column number	1	2	3	4	5	6	7	8	9	10	11

TABLE 2

MDG 1: Eradicate Extreme Poverty

	People living in poverty					Distribution of income by population quintiles					
	below national poverty line (% of total population) 2009-2013	below national rural poverty line (% of rural population) 2009-2013	below national urban poverty line (% of urban population) 2009-2013	below $2 PPP† per day (%) 2009-2012	below $1.25 PPP† per day (%) 2009-2012	share held by lowest 20% 2009-2012	share held by second 20% 2009-2012	share held by third 20% 2009-2012	share held by fourth 20% 2009-2012	share held by highest 20% 2009-2012	share of lowest pop. quintile in national consumption (%) 2008-2012
CONTINUED: **EUROPE & CENTRAL ASIA**											
Belarus	5.5	9.0	4.2	0.0	0.0	9.4	14.0	17.9	22.8	35.9	9.4
Bosnia & Herzegovina	17.9	..	..	..	..	..	..	..	..	..	..
Bulgaria	21.0	..	..	3.9	1.9	6.4	12.7	17.1	22.7	41.1	6.4
Georgia	14.8	18.8	10.5	31.3	14.1	5.3	10.2	15.2	22.2	47.1	5.3
Kazakhstan	2.9	4.9	1.3	0.8	0.1	9.5	13.4	16.9	22.1	38.3	9.5
Kosovo	29.7	31.5	26.7	..	..	..	..	..	..	..	..
Kyrgyz Republic	37.0	41.4	28.5	21.1	5.1	7.7	12.3	16.4	22.3	41.4	..
Latvia	19.4	..	..	2.0	1.1	6.2	12.1	16.5	22.2	42.9	6.2
Lithuania	20.6	..	..	1.2	0.8	7.0	12.8	17.2	23.0	40.0	7.0
Macedonia, FYR	27.1	..	..	..	..	..	..	..	..	..	..
Moldova	12.7	18.8	8.2	2.8	0.2	8.5	12.9	16.9	22.4	39.3	..
Montenegro	11.3	18.1	8.1	0.7	0.2	8.3	13.2	17.1	22.4	39.1	8.3
Romania	22.4	..	..	1.6	..	8.9	13.8	17.9	23.2	36.3	8.9
Russian Federation	10.8	..	..	0.3	0.0	6.5	10.6	14.8	21.2	47.0	6.5
Serbia	24.6	..	..	0.5	0.1	8.4	13.3	17.4	22.8	38.2	8.4
Tajikistan	47.2	49.2	41.8	27.4	6.5	8.4	12.9	17.2	22.9	39.3	8.4
Turkey	2.3	5.9	0.6	2.6	0.1	5.8	10.6	15.2	21.9	46.5	5.8
Turkmenistan	..	..	..	..	..	..	..	..	..	..	..
Ukraine	8.4	..	..	0.0	0.1	10.2	14.3	17.9	22.4	35.2	10.2
United Kingdom	..	..	..	..	..	5.8	11.4	16.2	22.6	44.1	5.8
Uzbekistan	16.0	..	..	..	..	..	..	..	..	..	..
LATIN AMERICA & CARIBBEAN	**..**	**..**	**..**	**9.3**	**4.6**	**..**	**..**	**..**	**..**	**..**	**..**
Belize	..	..	..	..	..	..	..	..	..	..	..
Bolivia	45.0	61.3	36.8	12.7	8.0	3.3	9.0	14.6	22.7	50.5	3.3
Brazil	8.9	..	..	6.8	3.8	3.4	7.7	12.4	19.3	57.2	3.4
Chile	14.4	27.9	12.4	1.9	0.8	4.5	8.2	11.9	18.4	57.0	4.5
Colombia	30.6	42.8	26.9	12.0	5.6	3.3	7.3	11.9	19.7	57.9	3.3
Costa Rica	22.4	30.3	19.5	3.1	1.4	4.2	8.4	12.9	20.6	53.9	4.2
Cuba	..	..	..	..	..	..	..	..	..	..	..
Dominican Republic	41.1	51.2	36.3	8.8	2.3	5.0	9.2	13.6	20.7	51.6	5.0
Ecuador	22.5	35.3	16.4	8.4	4.0	4.3	9.0	13.9	21.2	51.6	4.3
El Salvador	29.6	36.0	26.2	8.8	2.5	5.7	10.2	14.7	21.3	48.1	5.7
Guatemala	53.7	71.4	35.0	29.8	13.7	3.9	7.8	12.0	19.2	57.2	3.9
Guyana	..	..	..	..	..	..	..	..	..	..	..
Haiti	58.5	74.9	40.6	..	..	..	..	..	..	..	..
Honduras	64.5	68.5	60.4	29.2	16.5	2.6	6.5	11.1	18.6	61.2	2.6
Jamaica	19.9	..	..	..	..	..	..	..	..	..	..
Mexico	52.3	63.6	45.5	4.1	1.0	4.9	8.8	12.8	19.5	54.1	4.9
Nicaragua	42.5	63.3	26.8	20.8	8.5	4.6	9.3	13.9	21.1	51.1	4.6
Panama	25.8	49.4	13.8	8.9	4.0	3.2	7.8	12.6	20.2	56.3	3.2
Paraguay	23.8	33.8	17.0	7.7	3.0	4.1	8.7	13.8	20.7	52.7	4.1
Peru	23.9	48.0	16.1	8.0	2.9	4.2	9.2	14.5	21.9	50.1	4.2
Suriname	..	..	..	..	..	..	..	..	..	..	..
Uruguay	11.5	3.0	12.0	1.3	0.3	5.2	10.0	15.1	22.8	46.9	5.2
Venezuela, RB	25.4	..	..	..	..	..	..	..	..	..	..
column number	1	2	3	4	5	6	7	8	9	10	11

.. Data not available.
0 Zero, or rounds to zero at displayed number of decimal.
a Data refers to 2009.
b Data refers to 2010.
c Data refers to 2011.
d Data refers to 2012.
e Data refers to 2013.
f Data refers to 2014.

† Purchasing Power Parity: a method of currency conversion that equalizes the purchasing power of different currencies.

Sources for tables on page 235.

TABLE 3

MDG 1: Eradicate Extreme Hunger

	Population hungry			Children (under 5) hungry			Nutritional supplements		Exclusive breastfeeding
	million(s) 2015	% of total population 2013-2015	low birth weight newborns (%) 2009-2012	underweight (%) 2009-2014	wasting (%) 2009-2014	stunting (%) 2009-2014	vitamin A coverage rate (% of children under 5) 2010-2013	consumption of iodized salt (% of households) 2009-2013	received by infants under 6 months (%) 2009-2013
World	**..**	**13.0**	**9.2**	**15.0**	**7.7**	**24.5**	**..**	**73.7**	**..**
High-income countries	**..**	**..**	**7.4**	**0.9**	**0.7**	**2.5**	**..**	**..**	**..**
Low- & middle-income countries	**..**	**13.3**	**..**	**17.0**	**8.5**	**27.1**	**..**	**73.7**	**35.9**
SUB-SAHARAN AFRICA	**..**	**19.5**	**..**	**21.0**	**9.2**	**37.4**	**73.1**	**58.6**	**37.7**
Angola	3.2	14.2	..	..	..	..	48.0	..	..
Benin	0.8	7.5	..	..	..	..	99.0	86.0	32.5
Botswana	0.5	24.1	..	..	..	..	83.0	..	..
Burkina Faso	3.7	20.7	14.1	26.2	15.4	35.1	99.0	95.9	38.2
Burundi	..	0.0	12.9	29.1	6.1	57.5	75.0	96.1	69.3
Cameroon	2.3	9.9	..	15.1	5.8	32.6	99.0	85.1	20.4
Cape Verde	0.1	9.4	..	..	..	..	..	..	..
Central African Republic	2.3	47.7	13.7	23.5	7.4	40.7	40.0	64.5	34.3
Chad	4.7	34.4	19.9	30.3	15.7	38.7	91.0	53.8	3.4
Comoros	..	0.0	..	16.9	11.1	32.1	18.0	..	12.1
Congo, Dem. Rep.	..	..	9.5	23.4	8.1	42.6	98.0	58.6	47.6[f]
Congo, Rep.	..	30.5	..	11.8	5.9	25.0	83.5	..	20.5
Côte d'Ivoire	2.8	13.3	..	15.7	7.6	29.6	99.0	..	12.1
Eritrea	..	0.0	..	38.8	15.3	50.3	37.0	..	68.7
Ethiopia	31.6	32.0	..	25.2	8.7	40.4	79.0	15.4	52.0
Gabon	..	5.0	..	6.5	3.4	17.5	2.0	..	6.0
Gambia, the	..	5.3	10.2	17.4	9.5	23.4	46.0	22.0	33.5
Ghana	1.4	5.0	10.7	13.4	6.2	22.7	96.0	34.5	45.7
Guinea	2.0	16.4	..	16.3	5.6	35.8	99.0	..	20.5
Guinea-Bissau	0.4	20.7	11.0	18.1	5.8	32.2	97.0	11.7	38.3
Kenya	9.9	21.2	8.0	16.4	7.0	35.2	19.0	93.4	31.9
Lesotho	0.2	11.2	10.7	13.5	3.9	39.0	66.0	79.4	53.5
Liberia	1.4	31.9	..	15.3	5.6	32.1	88.0	..	55.2
Madagascar	8.0	33.0	16.0	..	..	49.2	94.0	50.3	41.9
Malawi	3.6	20.7	13.5	16.7	3.8	42.4	90.0	62.1	71.4
Mali	..	5.0	18.0	..	..	..	98.0	..	33.8
Mauritania	0.2	5.6	34.7	19.5	11.6	22.0	99.0	7.3	26.9
Mauritius	..	5.0	..	..	..	..	..	..	..
Mozambique	6.9	25.3	16.9	15.6	6.1	43.1	99.0	44.8	42.8
Namibia	1.0	42.3	..	13.2	7.1	23.1	63.0	..	..
Niger	1.8	9.5	..	37.9	18.7	43.0	96.0	18.6	23.3
Nigeria	12.9	7.0	15.2	31.0	18.1	36.4	70.0	79.8	17.4
Rwanda	3.9	31.6	7.1	11.7	3.0	44.3	3.0	99.3	84.9
São Tomé and Príncipe	0.1	6.6	9.9	..	..	..	67.0	64.8	51.4
Senegal	3.7	24.6	18.6	16.8	8.9	19.2	99.0	43.1	39.0
Sierra Leone	..	22.3	10.5	18.1	9.4	37.9	99.0	62.6	32.0
Somalia	..	0.0	..	..	..	..	12.0	3.9	..
South Sudan	..	0.0	..	27.6	22.7	31.1	66.0	45.3	45.1
South Africa	..	5.0	..	..	..	..	42.0	..	..
Sudan	..	0.0	..	..	..	..	83.0	9.5	41.0
Swaziland	0.3	26.8	8.7	5.8	0.8	31.0	31.0	51.6	44.1
Tanzania	..	32.1	8.4	13.6	6.6	34.8	92.0	55.7	49.8
Togo	0.8	11.4	11.1	16.5	4.8	29.8	61.0	31.5	62.4
Uganda	10.3	25.5	11.8	14.1	4.8	33.7	65.0	99.0	63.2
Zambia	7.4	47.8	..	..	..	..	93.0	..	..
Zimbabwe	5.0	33.4	11.0	11.2	3.3	27.6	34.0	94.0	31.4
column number	1	2	3	4	5	6	7	8	9

TABLE 3

MDG 1: Eradicate Extreme Hunger

	Population hungry			Children (under 5) hungry			Nutritional supplements		Exclusive breastfeeding
	million(s) 2015	% of total population 2013-2015	low birth weight newborns (%) 2009-2012	underweight (%) 2009-2014	wasting (%) 2009-2014	stunting (%) 2009-2014	vitamin A coverage rate (% of children under 5) 2010-2013	consumption of iodized salt (% of households) 2009-2013	received by infants under 6 months (%) 2009-2013
MIDDLE EAST & NORTH AFRICA	**..**	**8.7**	**13.6**	**6.0**	**6.8**	**17.0**	**..**	**..**	**39.0**
Algeria	..	5.0	..	..	..	..	..	..	..
Djibouti	0.1	15.9	..	29.8	21.5	33.5	66.0	..	..
Egypt, Arab Rep.	..	5.0	..	..	..	..	62.0	..	..
Iran, Islamic Rep.	..	5.0	7.7	..	..	..	..	..	53.1
Iraq	8.1	22.8	13.4	8.5	7.4	22.6	..	29.0	19.6
Jordan	..	5.0	..	3.0	2.4	7.8	..	..	22.7
Lebanon	..	5.0	11.5	..	..	..	..	70.7	14.8
Libya	..	..	..	..	..	..	..	..	..
Morocco	1.7	5.0	..	3.1	2.3	14.9	..	..	..
Syrian Arab Republic	..	0.0	10.3	10.1	11.5	27.5	33.0	..	42.6
Tunisia	..	5.0	6.9	2.3	2.8	10.1	..	..	8.5
West Bank & Gaza	..	..	9.1	1.4	1.2	7.4	..	76.6	28.8
Yemen, Rep.	..	26.1	32.0	35.5	13.3	46.6	87.0	..	10.3
SOUTH ASIA	**..**	**16.3**	**..**	**32.5**	**15.4**	**38.0**	**60.4**	**68.8**	**..**
Afghanistan	8.6	26.8	..	..	..	..	97.0	20.4	..
Bangladesh	26.3	16.4	..	31.9	9.6	42.0	97.0	57.6	64.1
Bhutan	..	0.0	9.9	12.8	5.9	33.6	45.0	..	48.7
India	194.6	15.2	..	..	..	..	53.0	71.1	..
Maldives	0.1	5.2	11.0	17.8	10.2	20.3	76.0	..	47.8
Nepal	2.2	7.8	17.8	29.1	11.2	40.5	99.0	80.0	69.6
Pakistan	41.4	22.0	..	31.6	10.5	45.0	99.0	69.1	37.7
Sri Lanka	4.7	22.0	..	26.3	21.4	14.7	92.0	..	..
EAST ASIA & PACIFIC	**..**	**10.9**	**6.0**	**5.2**	**3.6**	**11.9**	**..**	**85.0**	**30.1**
Cambodia	2.2	14.2	11.3	29.0	10.8	40.9	90.0	82.7	73.5
China	133.8	9.3	2.4	3.4	2.3	9.4	..	96.8	..
Fiji	..	5.0	..	..	..	..	..	..	..
Indonesia	19.4	7.6	11.1	19.9	13.5	36.4	82.0	57.6	41.5
Kiribati	..	5.0	8.3	14.9	..	..	..	..	69.0
Korea, Dem. Rep.	..	41.6	5.7	15.2	4.0	27.9	98.0	24.5	68.9
Lao PDR	..	18.5	14.8	26.5	6.4	43.8	87.0	79.5	40.4
Malaysia	..	5.0	11.1	..	..	..	..	..	..
Mongolia	0.6	20.5	4.7	1.6	1.0	10.8	95.0	69.9	65.7
Myanmar	7.7	14.2	8.6	22.6	7.9	35.1	86.0	68.8	23.6
Papua New Guinea	..	0.0	..	27.9	14.3	49.5	15.0	..	..
Philippines	13.7	13.5	15.9	20.2	7.3	33.6	89.0	80.1	27.0
Samoa	..	5.0	10.2	..	..	..	..	..	51.3
Solomon Islands	0.1	11.3	..	..	..	..	..	..	..
Thailand	5.0	7.4	11.3	9.2	6.7	16.3	..	70.9	12.3
Timor-Leste	0.3	26.9	..	45.3	18.9	57.7	40.0	..	51.5
Tuvalu	..	0.0	..	..	..	..	..	..	..
Vanuatu	0.1	6.4	..	..	..	..	..	..	..
Vietnam	..	11.0	5.1	12.0	4.4	23.3	98.0	45.1	17.0
EUROPE & CENTRAL ASIA	**..**	**..**	**8.1**	**1.6**	**1.4**	**10.8**	**..**	**..**	**34.5**
Albania	..	5.0	3.6	6.3	9.4	23.1	..	75.1	38.6
Armenia	0.2	5.8	8.0	5.3	4.2	20.8	..	..	34.6
Azerbaijan	..	5.0	..	..	..	..	87.0	..	..
column number	1	2	3	4	5	6	7	8	9

MDG 1: Eradicate Extreme Hunger

	Population hungry			Children (under 5) hungry			Nutritional supplements		Exclusive breastfeeding
	million(s) 2015	% of total population 2013-2015	low birth weight newborns (%) 2009-2012	underweight (%) 2009-2014	wasting (%) 2009-2014	stunting (%) 2009-2014	vitamin A coverage rate (% of children under 5) 2010-2013	consumption of iodized salt (% of households) 2009-2013	received by infants under 6 months (%) 2009-2013
CONTINUED: **EUROPE & CENTRAL ASIA**									
Belarus	..	5.0	5.1	..	..	..	..	85.4	19.0
Bosnia & Herzegovina	..	5.0	4.5	1.5	2.3	8.9	..	..	18.5
Bulgaria	..	5.0	8.8	..	..	..	..	91.9	..
Georgia	0.3	7.4	6.5	1.1	1.6	11.3	..	99.9	54.8
Kazakhstan	..	5.0	6.1	3.7	4.1	13.1	..	85.4	31.8
Kosovo	..	..	..	..	..	..	..	..	..
Kyrgyz Republic	..	6.0	6.3	2.8	2.8	12.9	97.4	..	56.1
Latvia	..	5.0	4.6	..	..	..	..	..	..
Lithuania	..	5.0	4.8	..	..	..	..	..	..
Macedonia, FYR	..	5.0	5.5	1.3	1.8	4.9	..	..	23.0
Moldova	..	5.0	5.8	2.2	1.9	6.4	..	44.3	36.4
Montenegro	..	5.0	5.1	1.0	2.8	9.4	..	..	..
Romania	..	5.0	8.4	..	..	..	..	..	..
Russian Federation	..	5.0	6.1	..	..	..	..	..	..
Serbia	..	5.0	6.1	1.8	3.9	6.0	..	..	13.7
Tajikistan	2.9	33.2	..	13.3	9.9	26.8	93.0	38.6	34.3
Turkey	..	5.0	..	1.9	1.7	9.5	..	..	..
Turkmenistan	..	5.0	4.8	..	..	..	..	..	..
Ukraine	..	5.0	5.3	..	..	..	..	20.7	19.7
United Kingdom	..	5.0	7.0	..	..	..	..	..	..
Uzbekistan	1.6	5.0	..	..	..	..	99.0	..	..
LATIN AMERICA & CARIBBEAN	**..**	**8.2**	**9.0**	**2.8**	**1.4**	**11.7**	**..**	**..**	**35.3**
Belize	0.1	6.2	11.1	6.2	3.3	19.3	..	..	14.7
Bolivia	1.8	15.9	..	..	..	..	40.0	..	..
Brazil	..	5.0	8.5	..	..	..	..	..	..
Chile	..	5.0	5.9	0.5	0.3	1.8	..	..	..
Colombia	4.4	8.8	9.5	3.4	0.9	12.7	..	..	42.8
Costa Rica	0.3	5.0	7.3	..	..	..	..	..	32.5
Cuba	..	5.0	5.2	..	..	..	..	..	48.6
Dominican Republic	1.3	12.3	..	4.0	2.4	7.1	..	..	6.7
Ecuador	1.8	10.9	8.6	6.4	2.3	25.2	..	..	..
El Salvador	0.8	12.4	8.7	..	..	..	81.0	..	..
Guatemala	2.5	15.6	11.4	13.0	1.1	48.0	13.0	..	49.6
Guyana	0.1	10.6	14.3	11.1	5.3	19.5	..	10.3	33.2
Haiti	..	53.4	23.0	11.6	5.2	21.9	13.0	18.0	39.7
Honduras	1.0	12.2	9.9	7.1	1.4	22.7	59.0	..	31.2
Jamaica	0.2	8.1	11.3	3.2	3.5	4.8	..	..	23.8
Mexico	..	5.0	9.2	2.8	1.6	13.6	..	..	14.4
Nicaragua	1.0	16.6	7.6	..	..	..	7.0	..	..
Panama	0.4	9.5	8.3	..	..	..	..	..	..
Paraguay	0.7	10.4	6.3	..	..	..	..	93.4	..
Peru	2.3	7.5	6.9	3.5	0.6	18.4	..	88.3	72.3
Suriname	0.1	8.0	13.9	5.8	5.0	8.8	..	..	2.8
Uruguay	..	5.0	8.1	4.5	1.1	11.7	..	..	65.2
Venezuela, RB	..	5.0	8.6	2.9	4.1	13.4	..	..	..
column number	1	2	3	4	5	6	7	8	9

.. Data not available.
0 Zero, or rounds to zero at displayed number of decimal.
a Data refers to 2009.
b Data refers to 2010.
c Data refers to 2011.
d Data refers to 2012.
e Data refers to 2013.
f Data refers to 2014.

Sources for tables on page 235.

TABLE 4
MDG 2: Achieve Universal Primary Education

	School enrollment			Persistence	Literacy rate	
	primary (% net)	secondary (% net)	tertiary (% gross)	to grade 5 (% of students)	ages 15-24 (%)	above age 15 (%)
	2009-2014	2009-2014	2009-2014	2009-2012	2009-2012	2009-2012
World	**89.1**	**64.6**	**32.1**	**..**	**89.4**	**84.3**
High-income countries	**95.6**	**89.9**	**75.1**	**..**	**..**	**..**
Low- & middle-income countries	**88.2**	**61.0**	**25.3**	**..**	**87.8**	**80.4**
SUB-SAHARAN AFRICA	**76.8**	**32.5**	**8.1**	**67.4**	**69.6**	**59.3**
Angola	85.7	13.5	7.5	44.8	73.0	70.6
Benin	95.5	42.0	12.4	61.1	..	..
Botswana	83.8	..	17.9	..	96.0	86.7
Burkina Faso	67.5	21.7	4.8	80.7	..	..
Burundi	94.8	21.2	3.2	57.4	..	..
Cameroon	91.5	..	11.9	78.7	80.6	71.3
Cape Verde	98.1	69.9	22.8	93.6	98.1	85.3
Central African Republic	71.9	13.9	2.8	56.7	36.4	36.8
Chad	79.2	..	2.3	56.6	48.9	37.3
Comoros	81.4	47.3	9.9	..	86.4	75.9
Congo, Dem. Rep.	..	..	8.2	73.7	..	..
Congo, Rep.	90.2	..	9.6	..	80.9	79.3
Côte d'Ivoire	61.9	..	9.1	78.4	48.3	41.0
Eritrea	..	..	2.0	69.0	91.0	70.5
Ethiopia	..	..	..	44.1	..	..
Gabon	..	..	..	..	88.5	82.3
Gambia, the	68.7	..	..	76.5	69.4	52.0
Ghana	88.9	54.6	12.2	89.8	85.7	71.5
Guinea	74.4	30.4	9.9	59.5	31.4	25.3
Guinea-Bissau	69.8	..	..	..	74.3	56.7
Kenya	83.6	56.0	4.0	..	..	..
Lesotho	79.6	33.4	10.8	69.1	83.2	75.8
Liberia	37.7	16.7	11.6	..	..	..
Madagascar	..	30.9	4.1	38.0	64.9	64.5
Malawi	96.9	31.2	0.8	69.6	72.1	61.3
Mali	64.4	35.6	7.5	56.5	47.1	33.6
Mauritania	72.8	21.6	5.4	75.3	..	..
Mauritius	98.1	..	41.2	97.0	98.1	89.2
Mozambique	87.4	18.3	5.2	50.1	67.1	50.6
Namibia	87.7	..	..	92.8	..	..
Niger	62.8	12.2	1.8	64.6	23.5	15.5
Nigeria	63.9	..	..	86.0	..	..
Rwanda	93.4	..	6.9	51.2	77.3	65.9
São Tomé and Príncipe	96.4	49.3	7.7	88.4	..	..
Senegal	73.4	..	7.6	73.3	66.0	52.1
Sierra Leone	..	37.9	..	59.7	62.7	44.5
Somalia	..	..	..	..	..	..
South Sudan	41.3	..	..	..	..	..
South Africa	..	..	19.7	..	98.9	93.7
Sudan	..	..	17.2	86.8	87.9	73.4
Swaziland	..	35.4	5.3	84.7	93.5	83.1
Tanzania	83.5	..	3.9	83.7	74.6	67.8
Togo	97.5	..	10.0	72.5	79.9	60.4
Uganda	91.5	22.7	4.4	48.2	87.4	73.2
Zambia	91.4	..	..	74.5	..	..
Zimbabwe	93.9	..	5.8	..	90.9	83.6
column number	1	2	3	4	5	6

TABLE 5
MDG 3: Promote Gender Equality & Empower Women

	School enrollment ratio (female to male)			Literacy rate ratio (female to male)		Participation of women	
	primary	secondary	tertiary	ages 15-24	above age 15	in non-agricultural sector (% of employment)	in national parliaments (% of seats held)
	2009-2014	2009-2014	2009-2014	2009-2013	2009-2013	2009-2012	2012-2014
World	**0.97**	**0.97**	**1.08**	**0.94**	**0.91**	**..**	**22.2**
High-income countries	**1.00**	**0.99**	**1.26**	**..**	**..**	**47.6**	**25.6**
Low- & middle-income countries	**0.97**	**0.96**	**1.01**	**0.93**	**0.87**	**..**	**20.9**
SUB-SAHARAN AFRICA	**0.92**	**0.84**	**0.64**	**0.85**	**0.75**	**..**	**22.1**
Angola	0.64	0.65	0.37	0.83	0.72	..	36.8
Benin	0.90	0.66	0.27	..	..	25.9	8.4
Botswana	0.97	..	1.33	1.04	1.01	41.4	9.5
Burkina Faso	0.97	0.85	0.49	..	..	..	18.9
Burundi	1.01	0.78	0.51	..	..	..	30.5
Cameroon	0.88	0.86	0.73	0.89	0.83	26.4	31.1
Cape Verde	0.92	1.16	1.46	1.01	0.89	..	20.8
Central African Republic	0.74	0.51	0.36	0.55	0.48	..	12.5
Chad	0.77	0.46	0.24	0.82	0.59	..	14.9
Comoros	0.94	1.04	0.86	1.00	0.88	..	3.0
Congo, Dem. Rep.	0.88	0.59	0.55	..	..	..	10.6
Congo, Rep.	1.07	0.87	0.75	0.90	0.84	..	7.4
Côte d'Ivoire	0.87	0.68	0.62	0.66	0.59	..	9.4
Eritrea	..	..	0.50	0.95	0.76	..	22.0
Ethiopia	..	..	..	..	..	41.6	27.8
Gabon	0.97	..	..	1.02	0.94	34.5	15.0
Gambia, the	1.04	0.95	..	0.89	0.70	..	9.4
Ghana	1.00	0.94	0.61	0.94	0.83	..	10.9
Guinea	0.84	0.63	0.37	0.58	0.33	17.5	21.9
Guinea-Bissau	0.93	..	..	0.86	0.63	..	13.7
Kenya	1.00	0.93	0.70	..	..	..	19.1
Lesotho	0.98	1.40	1.51	1.24	1.30	..	26.7
Liberia	0.92	0.78	0.63	..	..	24.1	11.0
Madagascar	0.99	0.96	0.92	0.97	0.91	35.4	20.5
Malawi	1.03	0.91	0.65	0.94	0.71	..	16.7
Mali	0.88	0.80	0.43	0.69	0.57	..	9.5
Mauritania	1.05	0.94	0.44	..	..	..	25.2
Mauritius	0.99	1.04	1.22	1.01	0.94	38.3	18.8
Mozambique	0.91	0.91	0.69	0.71	0.54	..	39.2
Namibia	0.97	..	..	..	..	42.4	24.4
Niger	0.84	0.67	0.34	0.44	0.38	..	13.3
Nigeria	0.92	0.89	..	..	..	..	6.7
Rwanda	1.02	1.07	0.77	1.02	0.87	..	63.8
São Tomé and Príncipe	0.98	1.11	0.86	..	..	..	18.2
Senegal	1.09	0.91	0.59	0.80	0.61	..	43.3
Sierra Leone	1.00	0.87	..	0.75	0.61	..	12.1
Somalia	..	..	..	..	..	..	13.8
South Sudan	0.66	..	..	..	..	..	26.5
South Africa	0.95	1.07	1.37	1.01	0.97	47.3	41.5
Sudan	0.89	0.91	1.12	0.95	0.80	..	24.3
Swaziland	0.92	0.99	1.05	1.03	0.98	..	6.2
Tanzania	1.04	0.92	0.55	0.95	0.81	31.1	36.0
Togo	0.89	..	0.39	0.84	0.65	..	17.6
Uganda	1.02	0.87	0.78	0.95	0.78	34.9	35.0
Zambia	0.99	..	..	..	..	..	10.8
Zimbabwe	0.99	0.97	0.85	1.03	0.91	33.9	31.5
column number	1	2	3	4	5	6	7

TABLE 4

MDG 2: Achieve Universal Primary Education

	School enrollment			Persistence	Literacy rate	
	primary (% net)	secondary (% net)	tertiary (% gross)	to grade 5 (% of students)	ages 15-24 (%)	above age 15 (%)
	2009-2014	2009-2014	2009-2014	2009-2012	2009-2012	2009-2012
MIDDLE EAST & NORTH AFRICA	**95.9**	**71.9**	**33.1**	**95.3**	**91.1**	**77.7**
Algeria	97.3	..	31.5	92.8	..	..
Djibouti	58.7	..	4.9	84.4	..	..
Egypt, Arab Rep.	95.1	82.5	30.1	97.2	89.3	73.9
Iran, Islamic Rep.	98.5	81.7	55.2	96.2	98.0	84.3
Iraq	..	..	..	..	82.2	79.0
Jordan	97.1	87.9	46.6	98.5	99.1	97.9
Lebanon	93.4	67.5	47.9	96.0	..	..
Libya	..	..	..	..	99.9	89.9
Morocco	98.3	56.0	16.2	92.7	81.5	67.1
Syrian Arab Republic	61.8	44.1	28.4	..	95.6	85.1
Tunisia	98.7	..	35.2	95.7	97.3	79.7
West Bank & Gaza	91.2	80.1	45.6	..	99.3	95.9
Yemen, Rep.	87.9	42.3	10.3	..	87.4	66.4
SOUTH ASIA	**89.8**	**..**	**21.1**	**..**	**79.3**	**61.4**
Afghanistan	..	46.8	3.7	..	47.0	31.7
Bangladesh	91.5	47.7	13.2	66.2	79.9	58.8
Bhutan	88.1	56.8	9.4	87.4	..	..
India	93.3	..	24.8	..	..	..
Maldives	94.5	..	..	87.4	..	..
Nepal	98.5	60.2	14.5	60.4	82.4	57.4
Pakistan	71.9	37.9	9.8	62.2	70.8	54.7
Sri Lanka	93.8	85.4	17.0	96.6	98.2	91.2
EAST ASIA & PACIFIC	**93.9**	**74.9**	**27.6**	**..**	**98.8**	**94.5**
Cambodia	98.4	..	15.8	69.9	87.1	73.9
China	..	..	26.7	..	99.6	95.1
Fiji	96.6	83.0	..	97.1	..	..
Indonesia	92.2	76.1	31.5	89.5	98.8	92.8
Kiribati	..	..	..	..	..	..
Korea, Dem. Rep.	..	..	..	..	..	..
Lao PDR	97.3	44.7	17.7	73.3	..	..
Malaysia	..	68.8	37.2	99.3	98.4	93.1
Mongolia	94.7	..	62.3	..	98.5	98.3
Myanmar	..	47.0	13.4	74.8	96.0	92.6
Papua New Guinea	85.6	..	..	..	71.2	62.9
Philippines	88.2	61.4	28.2	..	..	..
Samoa	94.8	79.7	..	91.7	99.5	98.9
Solomon Islands	..	..	..	83.9	..	..
Thailand	95.6	79.5	51.2	..	96.6	96.4
Timor-Leste	91.1	37.7	17.7	84.2	79.5	58.3
Tuvalu	74.5	69.4	..	..	..	..
Vanuatu	..	51.6	..	..	94.9	83.4
Vietnam	98.1	..	24.6	94.5	97.1	93.5
EUROPE & CENTRAL ASIA	**92.3**	**85.6**	**51.2**	**..**	**99.5**	**98.1**
Albania	..	..	55.5	98.7	98.8	96.8
Armenia	..	89.1	46.1	..	99.7	99.6
Azerbaijan	89.1	86.8	20.4	..	99.9	99.8
Belarus	92.8	96.9	92.9	..	99.8	99.6
column number	1	2	3	4	5	6

TABLE 5

MDG 3: Promote Gender Equality & Empower Women

	School enrollment ratio (female to male)			Literacy rate ratio (female to male)		Participation of women	
	primary	secondary	tertiary	ages 15-24	above age 15	in non-agricultural sector (% of employment)	in national parliaments (% of seats held)
	2009-2014	2009-2014	2009-2014	2009-2013	2009-2013	2009-2012	2012-2014
MIDDLE EAST & NORTH AFRICA	**0.93**	**0.94**	**1.03**	**0.94**	**0.82**	**16.9**	**16.8**
Algeria	0.94	1.04	1.48	..	..	15.1	31.6
Djibouti	0.87	0.81	0.68	..	..	..	12.7
Egypt, Arab Rep.	0.96	0.98	0.96	0.93	0.81	19.1	2.0
Iran, Islamic Rep.	1.02	0.94	1.00	0.99	0.89	15.3	3.1
Iraq	..	..	..	0.96	0.84	..	25.3
Jordan	0.98	1.03	1.15	1.00	0.99	..	12.0
Lebanon	0.92	1.01	1.09	..	..	..	3.1
Libya	..	..	..	1.00	0.87	..	16.0
Morocco	0.95	0.86	0.89	0.83	0.76	21.5	17.0
Syrian Arab Republic	0.97	1.00	1.02	0.98	0.87	15.9	12.0
Tunisia	0.97	1.05	1.59	0.98	0.82	27.7	31.3
West Bank & Gaza	1.01	1.10	1.50	1.00	0.95	16.7	..
Yemen, Rep.	0.84	0.69	0.44	0.80	0.61	11.7	0.3
SOUTH ASIA	**1.00**	**0.93**	**0.78**	**0.85**	**0.69**	**19.3**	**19.2**
Afghanistan	0.70	0.55	0.33	0.52	0.39	..	27.7
Bangladesh	1.06	1.14	0.72	1.05	0.88	18.3	19.8
Bhutan	1.01	1.07	0.69	..	..	26.3	8.5
India	1.02	0.94	0.78	..	..	19.3	11.4
Maldives	0.97	..	..	..	..	40.5	5.9
Nepal	1.09	1.06	0.64	0.87	0.66	..	29.5
Pakistan	0.87	0.73	0.98	0.81	0.63	..	20.7
Sri Lanka	1.00	1.06	1.66	1.01	0.97	30.4	5.8
EAST ASIA & PACIFIC	**0.99**	**1.02**	**1.13**	**1.00**	**0.95**	**..**	**19.0**
Cambodia	0.93	..	0.61	0.97	0.80	41.1	20.3
China	1.00	1.02	1.13	1.00	0.95	..	23.4
Fiji	1.01	1.11	..	..	..	..	14.0
Indonesia	1.00	1.03	1.03	1.00	0.94	32.9	16.9
Kiribati	1.04	..	..	..	..	43.9	8.7
Korea, Dem. Rep.	..	..	..	..	..	..	16.3
Lao PDR	0.95	0.89	0.88	..	..	..	25.0
Malaysia	..	0.94	1.21	1.00	0.95	38.7	10.4
Mongolia	0.97	1.07	1.42	1.01	1.00	49.9	14.9
Myanmar	0.99	1.05	1.23	1.00	0.95	..	5.6
Papua New Guinea	0.91	0.76	..	1.13	0.92	..	2.7
Philippines	0.98	1.08	1.24	..	..	41.4	27.3
Samoa	1.00	1.11	..	1.00	1.00	..	6.1
Solomon Islands	0.99	0.94	..	..	..	..	2.0
Thailand	0.95	1.06	1.34	1.00	1.00	45.4	6.1
Timor-Leste	0.95	1.02	0.73	0.98	0.83	..	38.5
Tuvalu	0.98	1.17	..	..	..	..	6.7
Vanuatu	0.99	1.00	..	1.00	0.96	..	1.9
Vietnam	0.98	..	0.90	0.99	0.95	..	24.3
EUROPE & CENTRAL ASIA	**0.99**	**0.97**	**1.05**	**1.00**	**0.98**	**42.7**	**18.1**
Albania	..	..	1.32	1.00	0.98	37.1	20.0
Armenia	1.14	1.15	1.51	1.00	1.00	45.7	10.7
Azerbaijan	0.98	0.99	1.05	1.00	1.00	42.7	15.6
Belarus	1.00	0.98	1.35	1.00	1.00	52.2	26.6
column number	1	2	3	4	5	6	7

TABLE 4
MDG 2: Achieve Universal Primary Education

	School enrollment			Persistence	Literacy rate	
	primary (% net)	secondary (% net)	tertiary (% gross)	to grade 5 (% of students)	ages 15-24 (%)	above age 15 (%)
	2009-2014	2009-2014	2009-2014	2009-2012	2009-2012	2009-2012
CONTINUED: **EUROPE & CENTRAL ASIA**						
Bosnia & Herzegovina	..	..	..	82.8	99.7	98.2
Bulgaria	95.0	85.3	62.7	..	97.9	98.4
Georgia	96.5	91.7	33.1	99.8	99.8	99.7
Kazakhstan	85.9	86.3	44.5	..	99.8	99.7
Kosovo	..	..	..	..	..	..
Kyrgyz Republic	90.5	80.4	47.6	..	99.8	99.2
Latvia	97.7	83.6	65.1	92.5	99.8	99.9
Lithuania	95.8	96.8	73.9	..	99.9	99.8
Macedonia, FYR	86.5	..	38.5	..	98.6	97.5
Moldova	87.9	77.2	41.3	..	100.0	99.1
Montenegro	98.4	..	55.5	80.5	99.2	98.4
Romania	85.8	..	51.6	..	99.0	98.6
Russian Federation	96.2	..	76.1	..	99.7	99.7
Serbia	94.8	93.0	56.4	..	99.3	98.2
Tajikistan	95.6	83.2	22.5	..	99.9	99.7
Turkey	94.0	82.1	69.4	90.0	99.0	94.9
Turkmenistan	..	..	8.0	..	99.8	99.6
Ukraine	97.4	87.1	79.0	..	99.8	99.7
United Kingdom	99.8	94.6	61.9	..	..	..
Uzbekistan	88.5	..	8.9	..	99.9	99.5
LATIN AMERICA & CARIBBEAN	**92.3**	**72.7**	**41.9**	**..**	**97.8**	**92.2**
Belize	96.6	74.3	25.9	93.6	..	..
Bolivia	81.6	71.6	..	98.0	99.0	94.5
Brazil	..	..	..	..	98.6	91.3
Chile	92.7	84.1	74.4	98.7	98.9	98.6
Colombia	87.7	73.7	48.3	84.7	98.2	93.6
Costa Rica	90.0	73.3	47.6	89.9	99.1	97.4
Cuba	96.2	88.3	47.8	96.7	100.0	99.8
Dominican Republic	86.5	62.1	46.4	94.8	97.5	90.9
Ecuador	95.0	83.5	40.5	90.2	98.6	93.3
El Salvador	91.0	62.5	25.5	87.4	96.5	85.5
Guatemala	89.1	46.9	18.7	72.1	93.7	78.3
Guyana	71.5	92.6	12.9	94.6	93.1	85.0
Haiti	..	..	..	..	..	..
Honduras	89.3	48.6	21.1	76.0	95.0	85.4
Jamaica	85.2	68.9	28.7	87.5	95.9	87.5
Mexico	96.3	67.9	29.0	96.7	98.9	94.2
Nicaragua	91.8	45.4	..	..	..	..
Panama	90.4	68.2	43.5	92.1	97.6	94.1
Paraguay	81.9	62.6	34.5	83.8	98.6	93.9
Peru	91.8	76.3	40.6	78.8	98.7	93.8
Suriname	80.4	52.5	..	..	98.4	94.7
Uruguay	99.5	72.0	63.2	94.8	99.0	98.4
Venezuela, RB	91.4	74.7	77.9	96.4	98.5	95.5
column number	1	2	3	4	5	6

TABLE 5
MDG 3: Promote Gender Equality & Empower Women

	School enrollment ratio (female to male)			Literacy rate ratio (female to male)		Participation of women	
	primary	secondary	tertiary	ages 15-24	above age 15	in non-agricultural sector (% of employment)	in national parliaments (% of seats held)
	2009-2014	2009-2014	2009-2014	2009-2013	2009-2013	2009-2012	2012-2014
CONTINUED: **EUROPE & CENTRAL ASIA**							
Bosnia & Herzegovina	..	..	..	1.00	0.97	41.4	21.4
Bulgaria	0.99	0.96	1.27	1.00	0.99	49.8	20.0
Georgia	1.01	1.01	1.26	1.00	1.00	45.7	12.0
Kazakhstan	1.01	0.97	1.43	1.00	1.00	49.5	25.2
Kosovo	..	..	..	..	..	..	..
Kyrgyz Republic	0.98	1.00	1.61	1.00	0.99	42.0	23.3
Latvia	0.99	0.97	1.54	1.00	1.00	53.8	18.0
Lithuania	0.99	0.96	1.44	1.00	1.00	53.7	24.1
Macedonia, FYR	1.00	0.99	1.20	1.00	0.98	41.9	33.3
Moldova	1.00	1.01	1.29	1.00	0.99	54.9	17.8
Montenegro	1.01	1.01	1.27	1.00	0.98	47.2	17.3
Romania	0.99	0.98	1.33	1.00	0.99	45.6	13.5
Russian Federation	1.01	0.98	1.26	1.00	1.00	50.6	13.6
Serbia	1.00	1.03	1.33	1.00	0.98	45.0	34.0
Tajikistan	0.99	0.90	0.52	1.00	1.00	28.9	16.9
Turkey	0.99	0.95	0.85	0.99	0.93	25.0	14.4
Turkmenistan	0.98	0.96	0.64	1.00	1.00	..	26.4
Ukraine	1.02	0.97	1.19	1.00	1.00	49.6	11.7
United Kingdom	1.00	1.00	1.36	..	..	49.2	22.6
Uzbekistan	0.97	0.98	0.65	1.00	1.00	..	22.0
LATIN AMERICA & CARIBBEAN	**0.97**	**1.07**	**1.28**	**1.00**	**0.99**	**43.7**	**28.6**
Belize	0.96	1.06	1.68	..	..	..	3.1
Bolivia	0.97	1.00	..	1.00	0.95	36.5	53.1
Brazil	..	..	..	1.01	1.01	47.2	9.9
Chile	0.97	1.04	1.12	1.00	1.00	38.5	15.8
Colombia	0.98	1.08	1.14	1.01	1.00	45.6	19.9
Costa Rica	0.99	1.07	1.24	1.00	1.00	43.1	33.3
Cuba	0.99	1.00	1.65	1.00	1.00	44.8	48.9
Dominican Republic	0.91	1.12	1.60	1.02	1.01	41.6	20.8
Ecuador	1.00	1.05	1.31	1.00	0.98	39.8	41.6
El Salvador	0.96	1.01	1.13	1.01	0.94	32.7	27.4
Guatemala	0.96	0.92	1.04	0.96	0.85	28.9	13.3
Guyana	1.13	1.15	2.14	1.01	1.06	..	31.3
Haiti	..	..	..	..	..	..	4.2
Honduras	0.99	1.22	1.38	1.02	0.99	..	25.8
Jamaica	0.94	1.04	2.29	1.06	1.12	..	12.7
Mexico	1.00	1.08	0.96	1.00	0.98	40.0	37.4
Nicaragua	0.98	1.10	..	..	..	..	42.4
Panama	0.97	1.07	1.56	0.99	0.99	43.9	19.3
Paraguay	0.96	1.05	1.40	1.00	0.98	41.1	15.0
Peru	0.99	0.98	1.09	1.00	0.94	37.6	22.3
Suriname	0.96	1.29	..	1.01	0.99	36.3	11.8
Uruguay	0.97	1.14	1.73	1.01	1.01	48.2	16.2
Venezuela, RB	0.98	1.09	..	1.01	1.00	44.0	17.0
column number	1	2	3	4	5	6	7

.. Data not available.
0 Zero, or rounds to zero at displayed number of decimal.
a Data refers to 2009.
b Data refers to 2010.
c Data refers to 2011.
d Data refers to 2012.
e Data refers to 2013.
f Data refers to 2014.

Sources for tables on page 235.

TABLE 6
MDG 4: Reduce Child Mortality

	Child mortality rate		Immunizations	
	under age 1 (deaths per 1,000 live births)	under age 5 (deaths per 1,000 live births)	measles (% of children 12-23 months)	DPT† (% of children 12-23 months)
	2013	2013	2013	2013
World	**33.6**	**45.6**	**83.9**	**83.8**
High-income countries	**5.3**	**6.3**	**93.9**	**95.8**
Low- & middle-income countries	**36.9**	**50.4**	**82.7**	**82.3**
SUB-SAHARAN AFRICA	**61.0**	**92.2**	**73.7**	**74.4**
Angola	101.6	167.4	91.0	93.0
Benin	56.2	85.3	63.0	69.0
Botswana	36.3	46.6	94.0	96.0
Burkina Faso	64.1	97.6	82.0	88.0
Burundi	54.8	82.9	98.0	96.0
Cameroon	60.8	94.5	83.0	89.0
Cape Verde	21.9	26.0	91.0	93.0
Central African Republic	96.1	139.2	25.0	23.0
Chad	88.5	147.5	59.0	48.0
Comoros	57.9	77.9	82.0	83.0
Congo, Dem. Rep.	86.1	118.5	73.0	72.0
Congo, Rep.	35.6	49.1	65.0	69.0
Côte d'Ivoire	71.3	100.0	74.0	88.0
Eritrea	36.1	49.9	96.0	94.0
Ethiopia	44.4	64.4	62.0	72.0
Gabon	39.1	56.1	70.0	79.0
Gambia, the	49.4	73.8	96.0	97.0
Ghana	52.3	78.4	89.0	90.0
Guinea	64.9	100.7	62.0	63.0
Guinea-Bissau	77.9	123.9	69.0	80.0
Kenya	47.5	70.7	93.0	76.0
Lesotho	73.0	98.0	92.0	96.0
Liberia	53.6	71.1	74.0	89.0
Madagascar	39.6	56.0	63.0	74.0
Malawi	44.2	67.9	88.0	89.0
Mali	77.6	122.7	72.0	74.0
Mauritania	67.1	90.1	80.0	80.0
Mauritius	12.5	14.3	99.0	98.0
Mozambique	61.5	87.2	85.0	78.0
Namibia	35.2	49.8	82.0	89.0
Niger	59.9	104.2	67.0	70.0
Nigeria	74.3	117.4	59.0	58.0
Rwanda	37.1	52.0	97.0	98.0
São Tomé and Príncipe	36.7	51.0	91.0	97.0
Senegal	43.9	55.3	84.0	92.0
Sierra Leone	107.2	160.6	83.0	92.0
Somalia	89.8	145.6	46.0	42.0
South Sudan	64.1	99.2	30.0	45.0
South Africa	32.8	43.9	66.0	65.0
Sudan	51.2	76.6	85.0	93.0
Swaziland	55.9	80.0	85.0	98.0
Tanzania	36.4	51.8	99.0	91.0
Togo	55.8	84.7	72.0	84.0
Uganda	43.8	66.1	82.0	78.0
Zambia	55.8	87.4	80.0	79.0
Zimbabwe	55.0	88.5	93.0	95.0
column number	1	2	3	4

TABLE 7
MDG 5: Improve Maternal Health

	Maternal mortality		Maternal health care			Fertility		
	mortality ratio (per 100,000 live births)	lifetime risk of maternal death (%)	pregnant women receiving prenatal care (%)	births attended by skilled health staff (%)	nurses & midwives (per 1,000 people)	births (per woman)	births (per 1,000 women ages 15-19)	contraceptive prevalence (% of women ages 15-49)
	2013	2013	2009-2013	2009-2013	2009-2013	2013	2013	2009-2013
World	**210**	**0.54**	**82.7**	**68.5**	**3.3**	**2.5**	**45.3**	**63.4**
High-income countries	**17**	**0.03**	**..**	**..**	**8.6**	**1.7**	**17.7**	**..**
Low- & middle-income countries	**230**	**0.64**	**82.5**	**67.7**	**2.0**	**2.6**	**49.3**	**62.0**
SUB-SAHARAN AFRICA	**510**	**2.61**	**77.0**	**48.6**	**1.1**	**5.0**	**106.0**	**23.6**
Angola	460	2.88	..	..	1.7	5.9	166.6	..
Benin	340	1.70	83.5	80.9	0.8	4.8	87.7	12.9
Botswana	170	0.50	..	..	2.8	2.6	42.9	..
Burkina Faso	400	2.28	94.3	65.9	0.6	5.6	112.3	16.2
Burundi	740	4.45	98.9	60.3	..	6.0	29.6	21.9
Cameroon	590	2.91	84.7	63.6	0.4	4.8	113.3	23.4
Cape Verde	53	0.14	..	..	0.6	2.3	69.1	..
Central African Republic	880	3.70	68.2	53.8	0.3	4.4	96.7	15.2
Chad	980	6.49	53.2	22.7	..	6.3	146.6	4.8
Comoros	350	1.71	92.1	82.2	..	4.7	50.0	19.4
Congo, Dem. Rep.	730	4.32	88.4[f]	80.1[f]	..	5.9	134.3	20.4[f]
Congo, Rep.	410	2.10	92.6	92.5	0.8	5.0	124.9	44.7
Côte d'Ivoire	720	3.43	90.6	59.4	0.5	4.9	126.4	18.2
Eritrea	380	1.91	88.5	34.1	..	4.7	63.3	8.4
Ethiopia	420	1.93	42.5	23.1	0.2	4.5	76.3	28.6
Gabon	240	1.06	94.7	89.3	..	4.1	98.9	31.1
Gambia, the	430	2.55	98.1	56.6	0.6	5.8	114.1	13.3
Ghana	380	1.52	96.4	68.4	0.9	3.9	56.9	34.3
Guinea	650	3.31	85.2	45.3	0.0	4.9	126.8	5.6
Guinea-Bissau	560	2.77	92.6	43.0	0.6	4.9	97.0	14.2
Kenya	400	1.89	91.5	43.8	0.9	4.4	92.5	45.5
Lesotho	490	1.56	91.8	61.5	..	3.0	86.2	47.0
Liberia	640	3.22	95.9	61.1	0.3	4.8	114.0	20.2
Madagascar	440	2.11	82.1	44.3	..	4.5	120.8	39.8
Malawi	510	2.92	94.7	71.4	0.3	5.4	143.3	46.1
Mali	550	3.85	74.2	58.7	0.4	6.8	174.1	9.8
Mauritania	320	1.51	84.2	65.1	0.7	4.7	71.6	11.4
Mauritius	73	0.11	..	..	..	1.4	30.7	..
Mozambique	480	2.45	90.6	54.3	0.4	5.2	133.1	11.6
Namibia	130	0.43	..	..	2.8	3.1	51.7	..
Niger	630	4.96	82.8	29.3	0.1	7.6	205.5	13.9
Nigeria	560	3.25	60.6	38.1	1.6	6.0	117.6	15.1
Rwanda	320	1.52	98.0	69.0	0.7	4.5	32.3	51.6
São Tomé and Príncipe	210	0.99	97.9	81.7	..	4.1	63.2	38.4
Senegal	320	1.66	94.5	65.1	0.4	4.9	91.9	17.8
Sierra Leone	1,100	4.74	97.1	59.7	0.2	4.7	97.6	16.6
Somalia	850	5.48	..	..	0.1	6.6	107.1	..
South Sudan	730	3.53	40.3	19.4	..	4.9	72.0	4.0
South Africa	140	0.33	..	..	5.1	2.4	49.4	..
Sudan	360	1.65	74.3	23.1	0.8	4.4	80.3	9.0
Swaziland	310	1.06	96.8	82.0	1.6	3.3	69.4	65.2
Tanzania	410	2.28	87.8	48.9	0.4	5.2	121.2	34.4
Togo	450	2.16	71.6	59.4	0.3	4.6	88.9	15.2
Uganda	360	2.28	93.3	57.4	1.3	5.9	122.3	30.0
Zambia	280	1.69	..	..	0.8	5.7	122.0	..
Zimbabwe	470	1.87	89.8	66.2	1.3	3.5	58.2	58.5
column number	1	2	3	4	5	6	7	8

TABLE 6
MDG 4: Reduce Child Mortality

	Child mortality rate		Immunizations	
	under age 1 (deaths per 1,000 live births)	under age 5 (deaths per 1,000 live births)	measles (% of children 12-23 months)	DPT† (% of children 12-23 months)
	2013	2013	2013	2013
MIDDLE EAST & NORTH AFRICA	**21.3**	**25.5**	**88.2**	**88.8**
Algeria	21.6	25.2	95.0	95.0
Djibouti	57.4	69.6	80.0	82.0
Egypt, Arab Rep.	18.6	21.8	96.0	97.0
Iran, Islamic Rep.	14.4	16.8	98.0	98.0
Iraq	28.0	34.0	63.0	68.0
Jordan	16.0	18.7	97.0	98.0
Lebanon	7.8	9.1	79.0	81.0
Libya	12.4	14.5	98.0	98.0
Morocco	26.1	30.4	99.0	99.0
Syrian Arab Republic	11.9	14.6	61.0	41.0
Tunisia	13.1	15.2	94.0	98.0
West Bank & Gaza	18.6	21.8	..	..
Yemen, Rep.	40.4	51.3	78.0	88.0
SOUTH ASIA	**44.6**	**56.6**	**74.6**	**74.9**
Afghanistan	70.2	97.3	75.0	71.0
Bangladesh	33.2	41.1	93.0	97.0
Bhutan	29.7	36.2	94.0	97.0
India	41.4	52.7	74.0	72.0
Maldives	8.4	9.9	99.0	99.0
Nepal	32.2	39.7	88.0	92.0
Pakistan	69.0	85.5	61.0	72.0
Sri Lanka	8.2	9.6	99.0	99.0
EAST ASIA & PACIFIC	**16.1**	**19.5**	**95.0**	**93.4**
Cambodia	32.5	37.9	90.0	92.0
China	10.9	12.7	99.0	99.0
Fiji	20.0	23.6	94.0	99.0
Indonesia	24.5	29.3	84.0	85.0
Kiribati	45.1	58.2	91.0	95.0
Korea, Dem. Rep.	21.7	27.4	99.0	93.0
Lao PDR	53.8	71.4	82.0	87.0
Malaysia	7.2	8.5	95.0	97.0
Mongolia	26.4	31.8	97.0	98.0
Myanmar	39.8	50.5	86.0	75.0
Papua New Guinea	47.3	61.4	70.0	68.0
Philippines	23.5	29.9	90.0	94.0
Samoa	15.5	18.1	99.0	95.0
Solomon Islands	25.1	30.1	76.0	83.0
Thailand	11.3	13.1	99.0	99.0
Timor-Leste	46.2	54.6	70.0	82.0
Tuvalu	24.4	29.2	96.0	90.0
Vanuatu	14.6	16.9	52.0	68.0
Vietnam	19.0	23.8	98.0	59.0
EUROPE & CENTRAL ASIA	**19.9**	**23.0**	**94.8**	**94.5**
Albania	13.3	14.9	99.0	99.0
Armenia	14.0	15.6	97.0	95.0
Azerbaijan	29.9	34.2	98.0	93.0
Belarus	3.7	4.9	99.0	98.0
Bosnia & Herzegovina	5.7	6.6	94.0	92.0
Bulgaria	10.1	11.6	94.0	95.0
Georgia	11.7	13.1	96.0	98.0
column number	1	2	3	4

TABLE 7
MDG 5: Improve Maternal Health

	Maternal mortality		Maternal health care			Fertility		
	mortality ratio (per 100,000 live births)	lifetime risk of maternal death (%)	pregnant women receiving prenatal care (%)	births attended by skilled health staff (%)	nurses & midwives (per 1,000 people)	births (per woman)	births (per 1,000 women ages 15-19)	contraceptive prevalence (% of women ages 15-49)
	2013	2013	2009-2013	2009-2013	2009-2013	2013	2013	2009-2013
MIDDLE EAST & NORTH AFRICA	**78**	**0.23**	**84.7**	**89.0**	**2.1**	**2.8**	**36.6**	**63.8**
Algeria	89	0.26	92.9	96.9	1.9	2.8	9.6	55.9
Djibouti	230	0.77	87.7	87.4	0.8	3.4	18.1	19.0
Egypt, Arab Rep.	45	0.14	..	..	3.5	2.8	42.0	..
Iran, Islamic Rep.	23	0.05	96.9	96.4	1.4	1.9	31.5	77.4
Iraq	67	0.29	77.7	90.9	1.4	4.0	67.7	52.5
Jordan	50	0.17	99.1	99.6	4.0	3.2	26.0	61.2
Lebanon	16	0.03	..	..	2.7	1.5	11.9	53.7
Libya	15	0.04	..	..	6.8	2.4	2.4	..
Morocco	120	0.33	77.1	73.6	0.9	2.7	34.8	67.4
Syrian Arab Republic	49	0.16	87.7	96.2	1.9	3.0	40.9	53.9
Tunisia	46	0.10	98.1	98.6	3.3	2.3	4.4	62.5
West Bank & Gaza	47	0.20	98.0	99.0	..	4.0	45.1	52.5
Yemen, Rep.	270	1.14	..	..	0.7	4.1	45.6	..
SOUTH ASIA	**190**	**0.53**	**71.8**	**50.0**	**1.4**	**2.6**	**38.3**	**52.8**
Afghanistan	400	2.04	48.0	38.6	0.1	4.9	83.2	21.2
Bangladesh	170	0.41	52.5	34.4	0.2	2.2	79.4	62.0
Bhutan	120	0.29	97.3	64.5	1.0	2.2	40.2	65.6
India	190	0.52	..	..	1.7	2.5	32.4	..
Maldives	31	0.08	99.1	98.8	5.0	2.3	4.1	34.7
Nepal	190	0.50	58.3	36.0	..	2.3	71.6	49.7
Pakistan	170	0.57	73.1	52.1	0.6	3.2	26.7	35.4
Sri Lanka	29	0.07	..	..	1.6	2.3	16.8	..
EAST ASIA & PACIFIC	**75**	**0.14**	**94.6**	**92.4**	**1.8**	**1.9**	**20.3**	**80.5**
Cambodia	170	0.55	89.1	74.0	0.8	2.9	43.7	50.5
China	32	0.05	95.0	99.8	1.9	1.7	8.6	87.9
Fiji	59	0.16	..	99.6	2.2	2.6	42.4	44.3
Indonesia	190	0.45	95.7	83.1	1.4	2.3	47.8	61.9
Kiribati	130	0.39	88.4	79.8	3.7	3.0	15.6	22.3
Korea, Dem. Rep.	87	0.16	100.0	100.0	..	2.0	0.6	70.6
Lao PDR	220	0.75	54.2	41.5	0.9	3.0	63.6	49.8
Malaysia	29	0.06	96.5	98.7	3.3	2.0	5.6	..
Mongolia	68	0.18	99.0	98.8	3.6	2.4	18.2	54.9
Myanmar	200	0.40	83.1	70.6	1.0	1.9	11.3	46.0
Papua New Guinea	220	0.84	..	..	0.6	3.8	61.3	..
Philippines	120	0.40	95.5	72.8	..	3.0	46.5	55.1
Samoa	58	0.23	93.0	80.8	1.9	4.1	27.7	28.7
Solomon Islands	130	0.55	..	..	2.1	4.0	63.9	..
Thailand	26	0.03	98.1	99.6	2.1	1.4	40.0	79.3
Timor-Leste	270	1.51	84.4	29.3	1.1	5.2	49.8	22.3
Tuvalu	..	..	..	..	5.8	..	..	..
Vanuatu	86	0.31	75.6	89.4	1.7	3.4	44.3	49.0
Vietnam	49	0.09	93.7	92.9	1.2	1.7	28.8	77.8
EUROPE & CENTRAL ASIA	**28**	**0.06**	**95.2**	**96.9**	**6.0**	**2.0**	**29.4**	**63.2**
Albania	21	0.04	97.3	99.3	3.8	1.8	14.4	69.3
Armenia	29	0.06	99.1	99.5	4.8	1.7	26.8	54.9
Azerbaijan	26	0.05	..	99.4	6.5	2.0	39.0	..
Belarus	1	0.00	99.7	100.0	10.6	1.6	19.9	63.1
Bosnia & Herzegovina	8	0.01	87.0	99.9	5.6	1.3	14.7	45.8
Bulgaria	5	0.01	..	99.5	4.8	1.5	34.3	..
Georgia	41	0.08	97.6	99.8	0.1	1.8	46.0	53.4
column number	1	2	3	4	5	6	7	8

TABLE 6
MDG 4: Reduce Child Mortality

	Child mortality rate		Immunizations	
	under age 1 (deaths per 1,000 live births)	under age 5 (deaths per 1,000 live births)	measles (% of children 12-23 months)	DPT† (% of children 12-23 months)
	2013	2013	2013	2013
CONTINUED: **EUROPE & CENTRAL ASIA**				
Kazakhstan	14.6	16.3	99.0	98.0
Kosovo	..	..	..	..
Kyrgyz Republic	21.6	24.2	99.0	97.0
Latvia	7.4	8.4	96.0	95.0
Lithuania	4.0	4.9	93.0	93.0
Macedonia, FYR	5.8	6.6	96.0	98.0
Moldova	13.3	15.4	91.0	90.0
Montenegro	4.9	5.3	88.0	94.0
Romania	10.5	12.0	92.0	89.0
Russian Federation	8.6	10.1	98.0	97.0
Serbia	5.8	6.6	92.0	95.0
Tajikistan	40.9	47.7	92.0	96.0
Turkey	16.5	19.2	98.0	98.0
Turkmenistan	46.6	55.2	99.0	98.0
Ukraine	8.6	10.0	79.0	76.0
United Kingdom	3.9	4.6	95.0	96.0
Uzbekistan	36.7	42.5	97.0	99.0
LATIN AMERICA & CARIBBEAN	**15.5**	**18.2**	**91.6**	**88.8**
Belize	14.3	16.7	99.0	95.0
Bolivia	31.2	39.1	95.0	94.0
Brazil	12.3	13.7	99.0	95.0
Chile	7.1	8.2	90.0	91.0
Colombia	14.5	16.9	92.0	91.0
Costa Rica	8.4	9.6	91.0	95.0
Cuba	5.0	6.2	99.0	96.0
Dominican Republic	23.6	28.1	79.0	83.0
Ecuador	19.1	22.5	97.0	99.0
El Salvador	13.5	15.7	94.0	92.0
Guatemala	25.8	31.0	85.0	85.0
Guyana	29.9	36.6	99.0	98.0
Haiti	54.7	72.8	65.0	68.0
Honduras	18.9	22.2	89.0	87.0
Jamaica	14.3	16.6	94.0	93.0
Mexico	12.5	14.5	89.0	83.0
Nicaragua	20.0	23.5	99.0	98.0
Panama	15.4	17.9	92.0	80.0
Paraguay	18.7	21.9	92.0	86.0
Peru	12.9	16.7	85.0	88.0
Suriname	20.3	22.8	93.0	86.0
Uruguay	9.5	11.1	96.0	94.0
Venezuela, RB	12.9	14.9	85.0	82.0
column number	1	2	3	4

TABLE 7
MDG 5: Improve Maternal Health

	Maternal mortality		Maternal health care			Fertility		
	mortality ratio (per 100,000 live births)	lifetime risk of maternal death (%)	pregnant women receiving prenatal care (%)	births attended by skilled health staff (%)	nurses & midwives (per 1,000 people)	births (per woman)	births (per 1,000 women ages 15-19)	contraceptive prevalence (% of women ages 15-49)
	2013	2013	2009-2013	2009-2013	2009-2013	2013	2013	2009-2013
CONTINUED: **EUROPE & CENTRAL ASIA**								
Kazakhstan	26	0.07	99.2	99.9	8.3	2.6	28.7	51.0
Kosovo	..	..	..	..	..	2.2	..	..
Kyrgyz Republic	75	0.25	97.0	99.1	6.2	3.2	28.2	36.3
Latvia	13	0.02	..	..	3.4	1.4	12.8	..
Lithuania	11	0.02	..	..	7.2	1.6	10.1	..
Macedonia, FYR	7	0.01	98.6	98.3	0.6	1.4	17.6	40.2
Moldova	21	0.03	98.8	99.2	6.4	1.5	28.6	59.5
Montenegro	7	0.01	..	100.0	5.4	1.7	14.6	..
Romania	33	0.05	..	98.5	5.6	1.5	30.9	..
Russian Federation	24	0.04	..	99.7	8.5	1.7	25.5	68.0
Serbia	16	0.02	99.0	99.7	4.5	1.5	16.5	60.8
Tajikistan	44	0.19	78.8	87.4	5.0	3.8	41.5	27.9
Turkey	20	0.04	95.0	95.0	2.4	2.0	29.4	73.0
Turkmenistan	61	0.16	..	..	4.4	2.3	17.5	..
Ukraine	23	0.03	98.6	99.0	7.7	1.5	24.7	65.4
United Kingdom	8	0.01	..	..	8.8	1.9	25.7	84.0
Uzbekistan	36	0.09	..	..	11.9	2.2	37.0	..
LATIN AMERICA & CARIBBEAN	**87**	**0.20**	**96.8**	**92.4**	**4.3**	**2.2**	**67.7**	**..**
Belize	45	0.13	96.2	96.2	2.0	2.7	70.2	55.2
Bolivia	200	0.69	..	84.0	1.0	3.2	70.8	..
Brazil	69	0.13	98.2	98.1	7.6	1.8	70.0	..
Chile	22	0.04	..	99.9	0.1	1.8	54.8	..
Colombia	83	0.20	97.0	99.1	0.6	2.3	67.5	79.1
Costa Rica	38	0.07	98.1	99.1	0.8	1.8	60.0	76.2
Cuba	80	0.10	100.0	100.0	9.1	1.4	42.9	74.3
Dominican Republic	100	0.28	99.3	98.6	1.3	2.5	98.0	71.9
Ecuador	87	0.24	..	90.5	2.2	2.6	75.9	..
El Salvador	69	0.17	..	99.5	0.4	2.2	74.8	..
Guatemala	140	0.58	93.2	52.3	0.9	3.8	95.5	54.1
Guyana	250	0.66	92.1	91.9	0.5	2.5	87.4	42.5
Haiti	380	1.24	90.3	37.3	..	3.1	41.3	34.5
Honduras	120	0.39	96.6	82.9	..	3.0	82.4	73.2
Jamaica	80	0.19	97.7	99.1	..	2.3	68.8	..
Mexico	49	0.11	97.6	96.0	2.5	2.2	62.4	72.5
Nicaragua	100	0.30	94.7	88.0	1.4[f]	2.5	98.9	80.4
Panama	85	0.22	95.8	93.5	1.4	2.5	77.5	52.2
Paraguay	110	0.34	..	95.8	1.0	2.9	66.0	..
Peru	89	0.23	96.0	86.7	1.5	2.4	50.1	74.0
Suriname	130	0.30	90.9	91.2	..	2.3	34.4	47.6
Uruguay	14	0.03	..	99.5	5.5	2.0	57.9	..
Venezuela, RB	110	0.28	..	95.7	..	2.4	82.0	..
column number	1	2	3	4	5	6	7	8

.. Data not available.
0 Zero, or rounds to zero at displayed number of decimal.
a Data refers to 2009.
b Data refers to 2010.
c Data refers to 2011.
d Data refers to 2012.
e Data refers to 2013.
f Data refers to 2014.
† Diphtheria, pertussis, & tetanus (vaccine).

Sources for tables on page 235.

TABLE 8

MDG 6: Combat HIV/AIDS, Malaria & Other Diseases

	HIV/AIDS				Correct & comprehensive HIV/AIDS knowledge		Malaria		Child malaria (under age 5)		Tuberculosis	
	ages 15-49 with HIV (%)	ages 15-49 with new HIV cases (%)	number of AIDS deaths	people on ARV treat-ment (%)	women ages 15-24 (%)	men ages 15-24 (%)	notified malaria cases (per 100,000 people)	malaria deaths (per 100,000 people)	children sleeping under insecticide treated bed nets (%)	children with fever receiving anti-malarial drugs (%)	new TB cases (per 100,000 people)	TB treatment success (% of cases)
	2013	2012	2012	2013	2008-2012	2008-2012	2013	2012	2009-2013	2009-2013	2013	2012
World	**0.8**	**..**	**..**	**..**	**..**	**..**	**..**	**..**	**..**	**..**	**126**	**86.0**
High-income countries	**..**	**..**	**..**	**..**	**..**	**..**	**18**	**..**	**..**	**..**	**22**	**71.0**
Low- & middle-income countries	**1.2**	**..**	**..**	**36.4**	**..**	**..**	**49**	**..**	**..**	**..**	**149**	**87.0**
SUB-SAHARAN AFRICA	**4.5**	**..**	**..**	**36.8**	**..**	**..**	**106**	**..**	**37.0**	**33.4**	**282**	**81.0**
Angola	2.4	0.3	11,515	26.0	..	..	167	101	25.9	28.3	320	45.0
Benin	1.1	0.1	2,701	34.0	21.6	31.3	88	80	69.7	38.4	70	90.0
Botswana	21.9	0.9	5,790	70.0	..	..	43	0	..	..	414	76.0
Burkina Faso	0.9	0.1	5,816	37.0	31.1	35.7	112	103	47.4	35.1	54	80.0
Burundi	1.0	0.0	4,669	40.0	44.5	46.5	30	64	53.8	25.4	128	89.0
Cameroon	4.3	0.3	43,627	22.0	28.7	33.5	113	65	21.0	23.1	235	79.0
Cape Verde	0.5	0.0	42	65.0	..	..	69	0	..	..	143	86.0
Central African Republic	3.8	0.3	10,799	14.0	17.4	25.0	97	115	36.4	34.1	359	68.0
Chad	2.5	0.1	14,665	21.0	10.1	..	147	153	9.8	42.7	151	69.0
Comoros	..	..	..	..	19.1	23.9	50	70	41.1	26.7	34	87.0
Congo, Dem. Rep.	1.1	..	..	18.0	..	..	134	..	55.8[f]	29.2[f]	326	88.0
Congo, Rep.	2.5	..	..	28.0	..	..	125	..	26.3	25.0	382	70.0
Côte d'Ivoire	2.7	0.1	27,944	30.0	15.7	24.6	126	71	37.2	17.5	170	79.0
Eritrea	0.6	0.0	910	51.0	24.7	33.8	63	4	20.4	1.5	92	87.0
Ethiopia	1.2	0.0	45,171	40.0	23.9	34.2	76	48	30.1	26.3	224	91.0
Gabon	3.9	0.2	2,080	56.0	29.8	36.1	99	67	38.8	25.9	423	54.0
Gambia, the	1.2	..	..	31.0	..	..	114	..	33.3	30.2	173	85.0
Ghana	1.3	..	..	34.0	19.9	27.2	57	67	39.0	52.6	66	84.0
Guinea	1.7	0.2	5,445	22.0	22.5	33.8	127	105	26.0	28.1	177	82.0
Guinea-Bissau	3.7	0.3	2,292	17.0	22.5	21.7	97	96	35.5	51.2	387	71.0
Kenya	6.0	0.4	58,446	41.0	54.2	63.7	92	50	46.7	23.2	268	86.0
Lesotho	22.9	2.2	16,133	28.0	..	..	86	0	..	..	916	71.0
Liberia	1.1	0.1	2,678	21.0	35.7	28.5	114	69	38.1	55.7	308	79.0
Madagascar	0.4	0.0	5,537	1.0	22.9	25.5	121	41	76.5	19.8	233	82.0
Malawi	10.3	0.4	47,826	46.0	44.2	51.1	143	63	56.0	32.5	156	82.0
Mali	0.9	0.0	5,549	30.0	14.6	..	174	92	45.6	22.5	60	93.0
Mauritania	..	..	..	..	6.3	..	72	67	18.7	19.7	115	68.0
Mauritius	1.1	0.1	857	19.0	..	..	31	0	..	..	21	91.0
Mozambique	10.8	1.0	82,365	32.0	30.2	51.8	133	71	35.7	29.9	552	87.0
Namibia	14.3	0.9	6,585	52.0	61.6	51.1	52	0	34.0	20.3	651	85.0
Niger	0.4	0.0	2,926	30.0	14.1	25.4	205	131	20.1	19.2	102	77.0
Nigeria	3.2	0.2	209,626	20.0	24.2	33.5	118	..	16.6	32.7	338	86.0
Rwanda	2.9	0.1	4,535	66.0	52.0	46.1	32	33	74.1	12.0	69	84.0
São Tomé and Príncipe	0.6	0.0	235	14.0	42.2	43.2	63	43	56.0	8.0	91	70.0
Senegal	0.5	0.0	1,760	35.0	29.4	30.7	92	59	45.8	6.2	136	84.0
Sierra Leone	1.6	0.1	3,148	16.0	28.8	30.0	98	109	49.0	48.3	313	90.0
Somalia	0.5	0.1	2,526	5.0	..	..	107	33	..	..	285	88.0
South Sudan	2.2	0.2	12,598	5.0	9.8	..	72	55	25.3	51.2	146	52.0
South Africa	19.1	1.4	195,263	42.0	25.3	23.2	49	2	..	..	860	77.0
Sudan	0.2	0.0	3,101	7.0	5.3	11.1	80	16	25.3	65.0	108	75.0
Swaziland	27.4	2.2	4,542	49.0	49.1	50.9	69	1	1.5	1.7	1,382	72.0
Tanzania	5.0	..	..	37.0	..	..	121	..	72.0	53.7	164	90.0
Togo	2.3	..	..	30.0	33.0	42.2	89	83	57.1	33.8	73	86.0
Uganda	7.4	0.8	63,040	38.0	38.1	39.5	..	58	42.8	64.5	166	77.0
Zambia	12.5	0.7	27,028	52.0	41.5	46.7	..	79	57.0	36.9	410	85.0
Zimbabwe	15.0	1.0	63,859	..	56.4	51.7	..	18	9.7	2.3	552	81.0
column number	1	2	3	4	5	6	7	8	9	10	11	12

TABLE 8

MDG 6: Combat HIV/AIDS, Malaria & Other Diseases

	HIV/AIDS				Correct & comprehensive HIV/AIDS knowledge		Malaria		Child malaria (under age 5)		Tuberculosis	
	ages 15-49 with HIV (%)	ages 15-49 with new HIV cases (%)	number of AIDS deaths	people on ARV treat-ment (%)	women ages 15-24 (%)	men ages 15-24 (%)	notified malaria cases (per 100,000 people)	malaria deaths (per 100,000 people)	children sleeping under insecticide treated bed nets (%)	children with fever receiving anti-malarial drugs (%)	new TB cases (per 100,000 people)	TB treatment success (% of cases)
	2013	2012	2012	2013	2008-2012	2008-2012	2013	2012	2009-2013	2009-2013	2013	2012
MIDDLE EAST & NORTH AFRICA	**0.1**	**..**	**..**	**13.1**	**..**	**..**	**37**	**..**	**..**	**..**	**40**	**84.0**
Algeria	0.1	0.0	1,371	18.0	..	..	10	0	..	..	81	90.0
Djibouti	0.9	0.0	662	28.0	..	..	18	28	19.9	0.9	619	31.0
Egypt, Arab Rep.	0.1	..	..	16.0	..	..	42	..	..	..	16	88.0
Iran, Islamic Rep.	0.1	..	..	6.0	..	..	31	..	..	..	21	87.0
Iraq	..	..	..	..	3.5	..	68	0	..	..	45	91.0
Jordan	..	..	..	..	8.6	..	26	0	..	..	6	90.0
Lebanon	..	..	..	..	..	..	12	0	..	..	16	71.0
Libya	..	..	..	..	..	..	2	..	..	..	40	60.0
Morocco	0.2	0.0	1,444	21.0	..	..	35	0	..	..	104	89.0
Syrian Arab Republic	..	..	..	..	..	..	41	0	..	..	17	53.0
Tunisia	0.1	0.0	130	16.0	19.7	..	..	0	..	..	32	89.0
West Bank & Gaza	..	..	..	..	..	..	..	..	..	..	5	100.0
Yemen, Rep.	0.1	..	..	15.0	..	..	..	..	..	..	48	88.0
SOUTH ASIA	**0.3**	**..**	**..**	**34.7**	**..**	**..**	**38**	**..**	**..**	**..**	**186**	**88.0**
Afghanistan	0.1	..	292	5.0	1.8	..	83	0	..	..	189	88.0
Bangladesh	0.1	..	485	11.0	9.1	14.4	79	14	..	0.6	224	92.0
Bhutan	0.1	0.0	31	20.0	21.0	..	40	0	..	..	169	92.0
India	0.3	..	..	36.0	..	..	32	4	..	..	171	88.0
Maldives	0.1	..	2	19.0	..	..	4	0	..	..	40	79.0
Nepal	0.2	0.0	3,251	23.0	36.4	33.9	72	0	..	0.6	156	91.0
Pakistan	0.1	0.0	2,174	6.0	4.2	5.2	27	2	..	3.4	275	91.0
Sri Lanka	0.1	..	92	18.0	..	..	17	0	..	..	66	86.0
EAST ASIA & PACIFIC	**..**	**..**	**..**	**..**	**..**	**..**	**20**	**..**	**..**	**..**	**117**	**91.0**
Cambodia	0.7	0.0	2,161	67.0	37.6	45.9	44	4	..	0.3	400	94.0
China	..	..	..	..	..	..	9	0	..	..	70	95.0
Fiji	0.1	0.0	16	32.0	..	..	42	..	..	..	57	86.0
Indonesia	0.5	0.1	29,116	8.0	11.4	10.3	48	10	..	0.8	183	86.0
Kiribati	..	..	..	..	..	..	16	0	..	..	497	89.0
Korea, Dem. Rep.	..	..	..	..	..	..	1	..	..	..	429	92.0
Lao PDR	0.2	..	..	45.0	..	..	64	..	43.2	1.9	197	90.0
Malaysia	0.4	0.1	5,899	20.0	..	..	6	..	..	..	99	78.0
Mongolia	0.1	0.0	14	14.0	22.8	20.7	18	0	..	..	181	88.0
Myanmar	0.6	0.0	10,507	35.0	31.8	..	11	11	11.1	..	373	89.0
Papua New Guinea	0.7	0.1	1,514	46.0	..	..	61	40	..	..	347	68.0
Philippines	..	..	..	..	..	..	46	0	..	..	292	88.0
Samoa	..	..	..	..	..	..	28	0	..	..	18	86.0
Solomon Islands	..	..	..	..	..	..	64	6	..	..	92	88.0
Thailand	1.1	0.0	18,447	57.0	55.7	..	40	1	..	..	119	81.0
Timor-Leste	..	..	..	..	12.2	19.7	50	16	41.0	5.7	498	89.0
Tuvalu	..	..	..	..	..	..	..	0	..	..	228	70.0
Vanuatu	..	..	..	..	..	..	..	4	51.0	5.1	62	91.0
Vietnam	0.4	..	..	33.0	..	..	..	..	9.4	1.2	144	91.0
EUROPE & CENTRAL ASIA	**..**	**..**	**..**	**..**	**..**	**..**	**29**	**..**	**..**	**..**	**66**	**81.0**
Albania	0.1	0.0	15	52.0	..	..	14	0	..	..	18	92.0
Armenia	0.2	0.0	188	16.0	15.8	8.9	27	0	..	..	49	81.0
column number	1	2	3	4	5	6	7	8	9	10	11	12

TABLE 8

MDG 6: Combat HIV/AIDS, Malaria & Other Diseases

	HIV/AIDS				Correct & comprehensive HIV/AIDS knowledge		Malaria		Child malaria (under age 5)		Tuberculosis	
	ages 15-49 with HIV (%)	ages 15-49 with new HIV cases (%)	number of AIDS deaths	people on ARV treat-ment (%)	women ages 15-24 (%)	men ages 15-24 (%)	notified malaria cases (per 100,000 people)	malaria deaths (per 100,000 people)	children sleeping under insecticide treated bed nets (%)	children with fever receiving anti-malarial drugs (%)	new TB cases (per 100,000 people)	TB treatment success (% of cases)
	2013	2012	2012	2013	2008-2012	2008-2012	2013	2012	2009-2013	2009-2013	2013	2012
CONTINUED: **EUROPE & CENTRAL ASIA**												
Azerbaijan	0.2	0.0	537	14.0	..	..	39	0	..	..	85	83.0
Belarus	0.5	0.1	952	21.0	56.1	50.9	20	0	..	..	70	85.0
Bosnia & Herzegovina	..	..	..	..	47.6	47.4	15	0	..	..	46	84.0
Bulgaria	..	..	..	..	..	..	34	0	..	..	29	87.0
Georgia	0.3	0.0	110	33.0	..	..	46	0	..	..	116	85.0
Kazakhstan	..	..	..	..	36.2	34.1	29	0	..	..	139	86.0
Kosovo	..	..	..	..	..	..	..	..	..	..	..	..
Kyrgyz Republic	0.2	..	..	13.0	..	..	28	..	..	..	141	84.0
Latvia	..	..	..	..	..	..	13	0	..	..	50	87.0
Lithuania	..	..	..	..	..	..	10	0	..	..	65	80.0
Macedonia, FYR	0.1	..	..	35.0	..	..	18	..	..	..	17	86.0
Moldova	0.6	..	..	17.0	..	..	29	..	..	..	159	76.0
Montenegro	..	..	..	..	47.7	36.9	15	0	..	..	21	84.0
Romania	0.1	0.0	540	..	..	..	31	0	..	..	87	85.0
Russian Federation	..	..	..	..	..	..	26	0	..	..	89	69.0
Serbia	0.1	..	118	..	54.1	47.6	17	0	..	..	18	84.0
Tajikistan	0.3	0.0	896	10.0	8.7	12.8	41	0	..	2.1	100	83.0
Turkey	..	..	..	..	..	..	..	0	..	..	20	88.0
Turkmenistan	..	..	..	..	..	..	..	0	..	..	72	84.0
Ukraine	0.8	0.0	13,392	26.0	49.9	45.8	..	0	..	..	96	71.0
United Kingdom	0.3	0.0	580	..	..	..	..	..	..	..	13	80.0
Uzbekistan	0.2	0.0	2,662	24.0	..	..	..	0	..	..	80	84.0
LATIN AMERICA & CARIBBEAN	**0.5**	**..**	**..**	**42.8**	**..**	**..**	**68**	**..**	**..**	**..**	**46**	**75.0**
Belize	1.5	0.1	114	44.0	42.9	..	70	0	..	..	37	55.0
Bolivia	0.3	0.0	1,181	20.0	..	..	71	0	..	..	123	84.0
Brazil	0.6	0.0	15,833	46.0	..	..	70	1	..	..	46	72.0
Chile	0.3	0.0	654	60.0	..	..	55	0	..	..	16	44.0
Colombia	0.5	0.0	..	29.0	24.1	..	68	1	..	..	32	72.0
Costa Rica	0.2	0.0	269	56.0	33.1	..	60	0	..	..	11	86.0
Cuba	0.2	0.0	191	62.0	60.9	58.6	43	0	..	..	9	85.0
Dominican Republic	0.7	0.0	1,694	47.0	46.4	..	98	..	..	..	60	82.0
Ecuador	0.4	0.0	1,629	31.0	..	..	76	0	..	..	56	75.0
El Salvador	0.5	0.0	603	48.0	31.1	..	75	0	..	..	39	93.0
Guatemala	0.6	0.0	2,607	33.0	..	..	95	0	..	..	60	88.0
Guyana	1.4	0.1	194	53.0	51.5	40.2	87	24	24.4	6.4	109	65.0
Haiti	2.0	0.1	6,399	39.0	34.6	27.6	41	5	12.0	2.5	206	81.0
Honduras	0.5	0.0	1,547	39.0	33.1	34.7	82	0	..	0.2	54	89.0
Jamaica	1.8	0.1	1,270	27.0	42.8	35.6	69	0	..	..	7	65.0
Mexico	0.2	0.0	5,563	51.0	..	..	62	0	..	..	21	80.0
Nicaragua	0.2	..	..	35.0	..	..	99	0	..	..	55	87.0
Panama	0.7	0.1	501	47.0	37.1	..	77	0	..	..	48	80.0
Paraguay	0.4	0.1	344	27.0	..	..	66	0	..	..	44	70.0
Peru	0.4	0.0	2,822	43.0	..	..	50	1	..	..	124	67.0
Suriname	0.9	0.0	114	..	41.9	..	34	1	43.4	..	39	66.0
Uruguay	0.7	0.0	454	40.0	34.5	..	..	0	..	..	30	78.0
Venezuela, RB	0.6	..	..	42.0	..	..	..	..	..	..	33	82.0
column number	1	2	3	4	5	6	7	8	9	10	11	12

.. Data not available.
0 Zero, or rounds to zero at displayed number of decimal.
a Data refers to 2009.
b Data refers to 2010.
c Data refers to 2011.
d Data refers to 2012.
e Data refers to 2013.
f Data refers to 2014.

Sources for tables on page 235.

TABLE 9

MDG 7: Ensure Environmental Sustainability

	Land use			Agriculture			Energy use		Water, sanitation, & shelter			
	nationally protected land area (% of land area)	forest area (% of land area)	agricultural land area (% of land area)	cereal yield (kg per hectare)	fertilizer consumption (kg per hectare of arable land)	number of tractors in use	CO_2 emissions (metric tons per capita)	GDP per unit of energy use (constant 2011 PPP† $ per kg of oil equivalent)	pop. with access to improved sanitation facilities (%)	rural pop. with access to improved water source (%)	urban pop. with access to improved water source (%)	slum pop. (% of urban pop.)
	2012	2012	2012	2013	2012	2009	2010	2011-2012	2012	2012	2012	2014
World	**14.3**	**31.0**	**37.7**	**3,851**	**141.3**	**..**	**4.9**	**7.3**	**63.6**	**81.5**	**96.5**	**..**
High-income countries	**13.9**	**34.9**	**28.9**	**4,953**	**101.8**	**..**	**11.6**	**8.6**	**96.2**	**97.5**	**99.6**	**..**
Low- & middle-income countries	**14.6**	**28.3**	**43.4**	**3,466**	**162.1**	**..**	**3.0**	**6.8**	**56.9**	**80.3**	**95.3**	**..**
SUB-SAHARAN AFRICA	**16.4**	**27.7**	**44.1**	**1,433**	**14.7**	**..**	**0.8**	**5.6**	**29.6**	**52.6**	**85.1**	**..**
Angola	12.4	46.7	47.5	815	9.7	..	1.6	10.5	60.1	34.3	67.6	55.5
Benin	26.1	39.6	32.8	1,433	19.4	..	0.5	4.3	14.3	69.1	84.5	61.5
Botswana	37.2	19.6	45.7	300	54.2	..	2.7	12.6	64.3	92.8	99.3	..
Burkina Faso	15.2	20.2	44.1	1,157	11.0	..	0.1	..	18.6	75.8	97.5	65.8
Burundi	4.9	6.6	75.3	1,176	5.7	..	0.0	..	47.5	73.2	91.5	57.9
Cameroon	11.0	41.2	20.6	1,652	10.1	..	0.4	8.2	45.2	51.9	94.1	37.8
Cape Verde	2.5	21.3	18.6	182	..	..	0.7	..	64.9	86.0	91.2	..
Central African Republic	18.0	36.2	8.2	1,716	..	..	0.1	..	21.5	54.4	89.6	93.3
Chad	16.6	9.0	39.7	1,007	..	..	0.0	..	11.9	44.8	71.8	88.2
Comoros	10.1	1.2	84.9	1,443	..	..	0.2	..	35.4	96.7	90.7	69.6
Congo, Dem. Rep.	12.0	67.7	11.5	767	0.9	..	0.0	1.9	31.4	29.0	79.1	..
Congo, Rep.	30.4	65.6	31.0	889	9.3	..	0.5	14.2	14.6	38.8	95.7	..
Côte d'Ivoire	22.9	32.7	64.8	3,125	25.4	..	0.3	4.7	21.9	67.8	91.5	56.0
Eritrea	5.0	15.1	75.2	602	1.4	..	0.1	8.8	..	..	..	..
Ethiopia	18.4	12.0	36.5	2,217	23.8	..	0.1	3.1	23.6	42.1	96.8	73.9
Gabon	19.9	85.4	20.0	1,691	17.3	..	1.7	14.0	41.4	63.0	96.8	37.0
Gambia, the	4.8	47.8	59.8	958	6.5	..	0.3	..	60.2	84.4	94.2	..
Ghana	15.1	20.7	69.0	1,689	34.9	..	0.4	8.1	14.4	81.3	92.5	37.9
Guinea	28.1	26.3	58.6	1,512	3.4	..	0.1	..	18.9	65.0	92.2	43.3
Guinea-Bissau	16.3	71.2	58.0	1,330	..	..	0.2	..	19.7	55.5	96.1	82.3
Kenya	11.6	6.1	48.2	1,727	44.3	..	0.3	5.4	29.6	55.1	82.3	56.0
Lesotho	0.5	1.5	75.3	810	..	..	0.0	..	29.6	76.7	93.2	50.8
Liberia	2.5	44.3	28.1	1,035	..	..	0.2	..	16.8	63.0	86.8	65.7
Madagascar	5.0	21.4	71.2	2,522	2.0	..	0.1	..	13.9	35.4	78.2	77.2
Malawi	18.3	33.6	60.8	2,069	39.9	..	0.1	..	10.3	83.2	94.6	66.7
Mali	6.0	10.1	34.1	1,567	26.0	..	0.0	..	21.9	54.2	90.9	56.3
Mauritania	0.6	0.2	38.5	1,130	..	..	0.6	..	26.7	47.7	52.3	79.9
Mauritius	4.5	17.3	42.9	3,224	224.2	..	3.3	..	90.8	99.7	99.9	..
Mozambique	17.6	49.1	63.5	818	6.0	..	0.1	2.4	21.0	35.0	80.3	..
Namibia	43.2	8.7	47.1	315	6.1	..	1.5	12.2	32.2	87.4	98.4	33.2
Niger	16.7	0.9	35.4	424	1.3	..	0.1	..	9.0	42.1	98.7	70.1
Nigeria	14.1	9.0	79.1	1,537	4.8	..	0.5	7.2	27.8	49.1	78.8	50.2
Rwanda	10.5	18.4	75.3	2,172	4.0	..	0.1	..	63.8	68.3	80.7	53.2
São Tomé and Príncipe	..	28.1	51.8	575	..	..	0.6	..	34.4	93.6	98.9	86.6
Senegal	24.8	43.6	46.8	1,180	8.0	..	0.5	8.2	51.9	60.3	92.5	39.4
Sierra Leone	10.5	37.2	56.8	1,802	..	..	0.1	..	13.0	42.4	87.1	75.6
Somalia	0.6	10.5	70.3	964	..	..	0.1	..	23.6	8.8	69.6	73.6
South Sudan	..	..	..	..	..	..	..	..	8.9	55.0	63.4	95.6
South Africa	6.2	7.6	79.4	3,725	62.0	..	9.1	4.5	74.4	88.3	99.2	23.0
Sudan	6.8	23.2	47.4	589	10.6	..	0.3	8.8	23.6	50.2	66.0	91.6
Swaziland	3.0	33.2	71.0	1,153	..	..	0.9	..	57.5	68.9	93.6	32.7
Tanzania	32.2	36.8	45.9	1,418	4.4	..	0.2	4.8	12.2	44.0	77.9	..
Togo	24.7	4.9	70.8	1,258	5.0	..	0.2	3.0	11.3	40.3	91.4	51.2
Uganda	11.5	14.1	71.4	2,143	1.8	..	0.1	..	33.9	71.0	94.8	53.6
Zambia	37.8	66.1	32.1	2,532	18.1	..	0.2	5.7	42.8	49.2	84.8	54.0
Zimbabwe	27.2	38.7	41.9	724	29.1	..	0.7	2.3	39.9	68.7	97.3	..
column number	1	2	3	4	5	6	7	8	9	10	11	12

TABLE 9

MDG 7: Ensure Environmental Sustainability

	Land use			Agriculture			Energy use		Water, sanitation, & shelter			
	nationally protected land area (% of land area)	forest area (% of land area)	agricultural land area (% of land area)	cereal yield (kg per hectare)	fertilizer consumption (kg per hectare of arable land)	number of tractors in use	CO_2 emissions (metric tons per capita)	GDP per unit of energy use (constant 2011 PPP† $ per kg of oil equivalent)	pop. with access to improved sanitation facilities (%)	rural pop. with access to improved water source (%)	urban pop. with access to improved water source (%)	slum pop. (% of urban pop.)
	2012	2012	2012	2013	2012	2009	2010	2011-2012	2012	2012	2012	2014
MIDDLE EAST & NORTH AFRICA	**6.1**	**2.4**	**23.0**	**2,561**	**66.5**	**..**	**3.9**	**8.3**	**88.0**	**82.7**	**94.6**	**..**
Algeria	7.5	0.6	17.4	1,814	21.7	..	3.3	11.4	95.2	79.5	85.5	..
Djibouti	0.1	0.2	73.4	2,000	..	..	0.6	..	61.4	65.5	100.0	65.6
Egypt, Arab Rep.	11.2	0.1	3.6	7,253	575.4	..	2.6	10.9	95.9	98.8	100.0	..
Iran, Islamic Rep.	7.2	6.8	30.2	2,346	26.3	..	7.7	5.7	89.4	91.7	97.7	..
Iraq	0.4	1.9	17.6	2,197	56.6	..	3.7	10.5	84.7	68.5	93.9	47.2
Jordan	1.9	1.1	11.7	1,678	1,260.5	..	3.4	9.9	98.1	90.5	97.3	12.9
Lebanon	0.6	13.4	71.7	3,382	282.9	..	4.7	11.3	..	100.0	100.0	53.1
Libya	0.1	0.1	8.7	833	30.9	..	9.8	5.2	96.6	..	..	..
Morocco	21.5	11.5	68.1	1,828	28.2	..	1.6	12.6	75.4	63.6	98.5	13.1
Syrian Arab Republic	0.7	2.7	75.8	1,576	29.9	..	2.9	..	95.7	87.2	92.3	19.3
Tunisia	5.4	6.7	64.9	1,691	55.6	..	2.5	11.5	90.4	90.5	100.0	8.0
West Bank & Gaza	0.6	1.5	43.4	1,583	..	..	0.6	..	94.3	82.3	81.6	..
Yemen, Rep.	0.8	1.0	44.6	1,008	9.8	..	1.0	12.1	53.3	46.5	72.0	..
SOUTH ASIA	**6.1**	**17.2**	**54.6**	**3,045**	**160.9**	**..**	**1.4**	**8.1**	**39.8**	**89.2**	**95.4**	**..**
Afghanistan	0.4	2.1	58.1	2,049	4.6	..	0.3	..	29.0	56.1	89.9	62.7
Bangladesh	4.7	11.0	70.1	4,357	278.6	..	0.4	12.6	57.0	84.4	85.8	55.1
Bhutan	28.4	85.8	13.6	2,942	15.3	..	0.7	..	46.9	97.3	99.4	..
India	5.2	23.1	60.3	2,962	163.7	..	1.7	7.8	36.0	90.7	96.7	24.0
Maldives	..	3.0	23.3	2,639	138.0	..	3.3	..	98.7	97.9	99.5	..
Nepal	16.4	25.4	28.7	2,570	28.4	..	0.1	5.3	36.7	87.6	90.3	54.3
Pakistan	10.7	2.1	35.1	2,722	166.9	..	0.9	8.8	47.6	89.0	95.7	45.5
Sri Lanka	22.0	29.2	42.9	3,833	199.6	..	0.6	16.2	92.3	92.9	99.1	..
EAST ASIA & PACIFIC	**15.1**	**29.7**	**48.0**	**5,184**	**..**	**..**	**4.9**	**5.6**	**66.9**	**84.5**	**97.3**	**..**
Cambodia	26.2	55.7	32.6	3,117	16.6	..	0.3	7.2	36.8	65.6	93.9	55.1
China	16.7	22.6	54.8	5,891	647.6	..	6.2	4.9	65.3	84.9	98.4	25.2
Fiji	4.3	55.9	23.3	2,443	32.8	..	1.5	..	87.2	92.2	100.0	..
Indonesia	14.7	51.4	31.2	5,085	194.8	..	1.8	9.8	58.8	76.4	93.0	21.8
Kiribati	22.0	15.0	42.0	..	..	..	0.6	..	39.7	50.6	87.4	..
Korea, Dem. Rep.	2.3	45.0	21.8	4,006	..	..	2.9	..	81.8	96.9	98.9	..
Lao PDR	16.7	67.6	10.7	4,150	..	..	0.3	..	64.6	64.9	83.7	..
Malaysia	18.4	61.7	23.6	3,889	1,570.7	..	7.7	8.0	95.7	98.5	100.0	..
Mongolia	13.8	6.9	73.0	1,337	25.1	..	4.2	5.7	56.2	61.2	94.8	42.7
Myanmar	7.3	47.7	19.3	3,641	15.7	..	0.2	..	77.4	81.1	94.8	41.0
Papua New Guinea	3.1	62.8	2.6	4,892	104.1	..	0.5	..	18.7	32.8	88.0	..
Philippines	10.9	26.1	41.6	3,532	113.5	..	0.9	13.4	74.3	91.2	92.5	38.3
Samoa	6.7	60.4	12.4	..	0.9	..	0.9	..	91.6	98.8	97.4	..
Solomon Islands	2.2	78.7	3.8	4,200	..	..	0.4	..	28.8	77.2	93.2	..
Thailand	18.8	37.2	42.8	3,022	153.2	..	4.4	7.2	93.4	95.3	96.7	25.0
Timor-Leste	8.7	48.4	25.8	1,880	..	..	0.2	..	38.9	60.5	95.2	..
Tuvalu	1.9	33.3	60.0	..	..	..	..	..	83.3	97.0	98.3	..
Vanuatu	4.2	36.1	15.3	633	..	..	0.5	..	57.9	88.3	97.8	..
Vietnam	6.5	45.4	35.0	5,425	297.1	..	1.7	6.8	75.0	93.6	98.2	..
EUROPE & CENTRAL ASIA	**5.1**	**10.5**	**66.1**	**3,136**	**71.2**	**..**	**5.3**	**6.3**	**94.1**	**88.9**	**98.6**	**..**
Albania	11.0	28.2	43.8	4,606	90.9	..	1.5	12.9	91.2	93.8	97.3	..
Armenia	8.1	8.9	59.1	3,108	33.7	..	1.4	7.4	90.5	100.0	99.7	14.4
column number	1	2	3	4	5	6	7	8	9	10	11	12

TABLE 9

MDG 7: Ensure Environmental Sustainability

	Land use			Agriculture			Energy use		Water, sanitation, & shelter			
	nationally protected land area (% of land area)	forest area (% of land area)	agricultural land area (% of land area)	cereal yield (kg per hectare)	fertilizer consumption (kg per hectare of arable land)	number of tractors in use	CO_2 emissions (metric tons per capita)	GDP per unit of energy use (constant 2011 PPP† $ per kg of oil equivalent)	pop. with access to improved sanitation facilities (%)	rural pop. with access to improved water source (%)	urban pop. with access to improved water source (%)	slum pop. (% of urban pop.)
	2012	2012	2012	2013	2012	2009	2010	2011-2012	2012	2012	2012	2014
CONTINUED: **EUROPE & CENTRAL ASIA**												
Azerbaijan	7.4	11.3	57.7	2,694	18.0	..	5.1	11.5	82.0	70.7	88.4	..
Belarus	8.3	42.9	43.3	3,009	271.4	48,100	6.6	5.3	94.3	99.0	99.8	..
Bosnia & Herzegovina	1.5	42.8	42.3	4,027	99.3	..	8.1	5.0	95.4	99.5	99.6	..
Bulgaria	36.6	37.2	47.2	4,431	121.8	..	6.0	5.8	100.0	99.0	99.6	..
Georgia	3.9	39.4	35.5	2,206	45.0	..	1.4	8.0	93.3	97.3	100.0	..
Kazakhstan	3.3	1.2	77.0	1,164	1.8	..	15.2	4.4	97.5	86.0	99.2	..
Kosovo	..	..	..	..	..	..	..	5.8	..	..	..	..
Kyrgyz Republic	6.3	5.1	55.2	2,904	21.6	..	1.2	5.2	91.8	82.3	97.1	..
Latvia	18.6	54.3	29.6	3,374	90.1	..	3.6	9.2	78.6	95.8	99.6	..
Lithuania	16.8	34.7	45.3	3,684	99.1	..	4.4	9.3	94.3	88.9	99.3	..
Macedonia, FYR	7.3	39.9	50.2	3,381	57.2	..	5.2	7.6	91.4	98.8	99.8	..
Moldova	3.8	12.0	74.9	2,852	19.1	..	1.4	4.5	86.7	93.7	99.5	..
Montenegro	14.8	40.4	38.1	2,844	12.4	..	4.2	7.4	90.0	95.3	99.6	..
Romania	18.7	28.9	59.7	3,864	49.8	176,841	3.9	9.8	..	..	98.5	..
Russian Federation	11.3	49.4	13.1	2,240	15.7	329,980	12.2	4.4	70.5	92.2	98.7	..
Serbia	6.3	32.1	57.8	4,784	175.1	..	6.3	5.6	97.3	98.9	99.4	..
Tajikistan	4.8	2.9	34.8	2,798	58.7	..	0.4	7.2	94.4	64.0	93.0	..
Turkey	2.1	15.0	49.9	3,249	106.1	..	4.1	11.5	91.2	98.8	100.0	11.9
Turkmenistan	3.2	8.8	72.0	1,988	..	..	10.5	2.3	99.1	53.7	89.1	..
Ukraine	4.0	16.8	71.3	4,064	41.3	333,529	6.6	3.0	94.3	97.7	98.1	..
United Kingdom	27.9	12.0	71.0	6,630	234.4	..	7.9	12.1	100.0	100.0	100.0	..
Uzbekistan	3.4	7.7	62.7	4,766	203.5	..	3.7	2.7	100.0	80.9	98.5	..
LATIN AMERICA & CARIBBEAN	**21.4**	**48.2**	**37.6**	**4,161**	**123.2**	**..**	**2.7**	**10.6**	**81.0**	**82.3**	**97.1**	**..**
Belize	36.7	60.2	7.0	3,616	120.9	..	1.4	..	90.5	100.0	98.4	10.8
Bolivia	20.8	52.2	34.6	1,977	9.8	..	1.5	7.3	46.4	71.9	96.0	43.5
Brazil	26.3	61.6	33.0	4,826	181.7	..	2.2	10.4	81.3	85.3	99.7	22.3
Chile	18.6	21.9	21.3	6,913	358.4	..	4.2	11.2	98.9	91.3	99.6	9.0
Colombia	21.2	54.3	38.4	3,314	744.3	..	1.6	16.9	80.2	73.6	96.9	13.1
Costa Rica	26.9	51.9	36.9	3,639	705.0	..	1.7	12.9	93.9	90.9	99.6	5.5
Cuba	12.4	27.6	60.2	2,922	50.1	..	3.4	18.9	92.6	87.3	96.3	..
Dominican Republic	18.6	40.8	51.7	4,555	93.6	..	2.1	15.5	82.0	77.2	82.5	12.1
Ecuador	23.7	38.1	30.2	3,547	247.3	..	2.2	11.6	83.1	75.2	91.6	36.0
El Salvador	8.4	13.4	75.6	2,713	172.5	..	1.0	10.7	70.5	81.0	95.0	28.9
Guatemala	30.9	33.1	41.3	2,018	158.6	..	0.8	10.1	80.3	88.6	99.1	34.5
Guyana	5.2	77.2	8.5	4,927	25.5	..	2.2	..	83.6	97.9	96.6	33.1
Haiti	0.3	3.6	64.2	1,060	..	..	0.2	4.9	24.4	47.5	74.6	74.4
Honduras	21.1	44.3	28.9	1,634	83.1	..	1.1	7.1	80.0	81.5	96.8	27.5
Jamaica	15.9	31.0	41.5	1,204	84.5	..	2.7	7.5	80.2	88.8	97.1	60.5
Mexico	12.9	33.2	54.9	3,387	72.0	..	3.8	10.3	85.3	90.8	96.1	11.1
Nicaragua	30.8	24.7	42.1	2,150	53.7	..	0.8	8.2	52.1	67.8	97.6	..
Panama	20.6	43.4	30.5	2,824	64.5	..	2.6	15.0	73.2	86.6	96.8	25.8
Paraguay	6.4	43.4	54.1	3,683	83.4	..	0.8	9.7	79.7	83.4	100.0	17.6
Peru	19.1	52.9	19.0	4,109	104.3	..	2.0	15.0	73.1	71.6	91.2	..
Suriname	14.7	94.6	0.5	4,496	62.3	..	4.5	..	80.3	88.4	98.1	7.3
Uruguay	2.7	10.5	87.2	3,925	192.6	..	2.0	13.5	96.4	94.9	99.9	..
Venezuela, RB	53.0	51.8	24.5	3,390	167.6	..	6.9	7.1	..	..	..	32.0
column number	1	2	3	4	5	6	7	8	9	10	11	12

.. Data not available.
0 Zero, or rounds to zero at displayed number of decimal.
a Data refers to 2009.
b Data refers to 2010.
c Data refers to 2011.
d Data refers to 2012.
e Data refers to 2013.
f Data refers to 2014.
† Purchasing Power Parity: a method of currency conversion that equalizes the purchasing power of different currencies.

Sources for tables on page 235.

TABLE 10

MDG 8: Develop a Global Partnership for Development, Low & Middle Income Countries

	Net official development assistance (ODA) received			Management of capital flows		Investment in infrastructure		Technology transfer		Public spending (% of GDP)		Corruption perceptions index (CPI)
	total (current million US$)	per capita (current US$)	as % of central gov't expense	total debt service (% of exports of goods, services, & income)	foreign direct investment, net inflows (% of GDP)	electricity produced from renewable sources, excl. hydroelectric (%)	specialized hospital beds (per 1,000 people)	internet users (per 100 people)	mobile cellular subscriptions (per 100 people)	for education	for public health	degree of corruption perceived to exist in government, score (0-100, 0 is most corrupt)
	2013	2013	2009-2013	2011-2013	2013	2011-2012	2009-2012	2013	2013	2009-2013	2013	2014
World	**150,086**	**21.1**	**..**	**..**	**2.3**	**4.2**	**..**	**38.1**	**93.1**	**13.5**	**15.7**	**..**
High income	**159**	**0.1**	**..**	**..**	**2.0**	**5.5**	**5.7**	**78.2**	**121.0**	**12.7**	**17.2**	**..**
Low & middle income	**149,928**	**25.8**	**..**	**10.5**	**3.0**	**2.6**	**2.3**	**29.1**	**86.9**	**16.1**	**..**	**..**
SUB-SAHARAN AFRICA	**46,769**	**50.0**	**..**	**6.2**	**2.3**	**0.6**	**..**	**16.9**	**66.0**	**18.0**	**12.9**	**..**
Angola	288	13.4	0.8	6.9	-5.7	..	..	19.1	61.9	8.7	7.7	19
Benin	653	63.2	48.8	4.3	3.9	0.6	0.5	4.9	93.3	26.1	10.7	39
Botswana	108	53.6	1.7	2.2	1.3	..	1.8	15.0	160.6	18.7	8.8	63
Burkina Faso	1,040	61.4	71.4	2.0	2.9	..	0.4	4.4	66.4	15.1	13.5	38
Burundi	546	53.8	..	14.1	0.3	..	1.9	1.3	25.0	16.3	13.7	20
Cameroon	737	33.1	..	2.6	1.1	1.0	1.3	6.4	70.4	15.2	8.5	27
Cape Verde	243	487.8	63.7	4.6	2.2	..	..	37.5	100.1	15.2	10.0	57
Central African Republic	189	41.0	110.6	..	0.1	..	1.0	3.5	29.5	7.8	15.9	24
Chad	399	31.1	..	..	4.0	..	..	2.3	35.6	10.1	5.9	22
Comoros	82	111.4	..	12.8	2.3	..	..	6.5	47.3	..	7.6	26
Congo, Dem. Rep.	2,572	38.1	193.1	3.0	5.2	..	..	2.2	41.8	9.2	12.9	..
Congo, Rep.	150	33.8	..	..	14.5	..	..	6.6	104.8	29.0	8.7	..
Côte d'Ivoire	1,262	62.1	64.1	5.2	1.2	1.0	..	2.6	95.4	..	8.5	..
Eritrea	84	13.2	..	..	1.3	0.6	0.7	0.9	5.6	..	3.6	18
Ethiopia	3,826	40.7	104.7	7.2	2.0	0.4	6.3	1.9	27.3	24.4	16.4	33
Gabon	91	54.4	..	..	4.4	0.5	6.3	9.2	214.8	..	7.2	37
Gambia, the	111	59.9	82.5	7.1	2.8	..	1.1	14.0	100.0	13.8	13.0	..
Ghana	1,331	51.4	21.6	5.6	6.7	..	0.9	12.3	108.2	33.4	10.6	48
Guinea	500	42.5	..	3.0	2.2	..	0.3	1.6	63.3	9.5	6.8	25
Guinea-Bissau	104	60.8	..	4.4	1.5	..	1.0	3.1	74.1	..	7.8	19
Kenya	3,236	73.0	26.9	5.7	0.9	23.3	1.4	39.0	71.8	23.8	5.9	25
Lesotho	320	154.3	..	2.8	1.9	..	..	5.0	86.3	..	14.5	49
Liberia	534	124.4	132.5	0.7	35.9	..	0.8	4.6	59.4	..	13.2	37
Madagascar	500	21.8	46.2	2.1	7.9	..	0.2	2.2	36.9	20.3	11.8	28
Malawi	1,126	68.8	..	2.0	3.2	..	1.3	5.4	32.3	14.9	16.2	33
Mali	1,391	90.9	79.3	1.5	3.7	..	0.1	2.3	129.1	19.3	12.3	32
Mauritania	291	74.9	..	5.6	27.1	..	..	6.2	102.5	13.0	5.5	30
Mauritius	148	117.8	7.5	42.0	2.2	..	3.4	39.0	123.2	14.8	9.5	54
Mozambique	2,314	89.6	56.5	2.6	42.8	..	0.7	5.4	48.0	..	8.8	31
Namibia	262	113.6	6.7	..	6.9	..	2.7	13.9	118.4	23.7	13.9	49
Niger	773	43.4	..	2.2	8.5	..	..	1.7	39.3	19.2	10.0	35
Nigeria	2,529	14.6	8.1	0.5	1.1	..	..	38.0	73.3	..	18.0	27
Rwanda	1,081	91.8	110.3	3.5	1.5	..	..	8.7	56.8	19.4	22.3	49
São Tomé and Príncipe	52	268.1	106.3	11.0	3.4	..	..	23.0	64.9	19.3	5.6	42
Senegal	983	69.5	45.3	7.4	2.0	1.9	..	20.9	92.9	20.7	7.6	43
Sierra Leone	444	72.8	57.2	1.2	3.5	..	..	1.7	65.7	14.1	11.4	31
Somalia	992	94.5	..	..	..	..	..	1.5	49.4	..	..	8
South Sudan	1,447	128.1	..	..	..	..	..	..	25.3	3.9	4.0	15
South Africa	1,293	24.3	0.8	8.3	2.2	0.2	..	48.9	145.6	19.1	14.0	44
Sudan	1,163	23.6	..	3.5	3.3	..	0.8	22.7	72.9	10.8	11.4	11
Swaziland	116	92.8	..	1.3	0.6	..	2.1	24.7	71.5	24.5	18.1	43
Tanzania	3,430	69.6	41.4	1.9	4.3	..	0.7	4.4	55.7	21.2	11.2	31
Togo	221	32.4	34.3	0.7	1.9	1.4	0.7	4.5	62.5	15.2	15.4	29
Uganda	1,693	45.0	57.8	1.6	4.8	..	0.5	16.2	44.1	14.0	24.3	26
Zambia	1,142	78.6	28.5	2.8	6.8	..	2.0	15.4	71.5	..	12.6	38
Zimbabwe	811	57.3	..	..	3.0	0.8	1.7	18.5	96.3	8.7	..	21
column number	1	2	3	4	5	6	7	8	9	10	11	12

TABLE 10

MDG 8: Develop a Global Partnership for Development, Low & Middle Income Countries

	Net official development assistance (ODA) received			Management of capital flows		Investment in infrastructure		Technology transfer		Public spending (% of GDP)		Corruption perceptions index (CPI)
	total (current million US$)	per capita (current US$)	as % of central gov't expense	total debt service (% of exports of goods, services, & income)	foreign direct investment, net inflows (% of GDP)	electricity produced from renewable sources, excl. hydroelectric (%)	specialized hospital beds (per 1,000 people)	internet users (per 100 people)	mobile cellular subscriptions (per 100 people)	for education	for public health	degree of corruption perceived to exist in government, score (0-100, 0 is most corrupt)
	2013	2013	2009-2013	2011-2013	2013	2011-2012	2009-2012	2013	2013	2009-2013	2013	2014
MIDDLE EAST & NORTH AFRICA	**25,682**	**74.3**	**..**	**4.9**	**1.6**	**0.5**	**..**	**34.1**	**100.8**	**..**	**9.8**	**..**
Algeria	208	5.3	0.3	0.7	0.8	..	..	16.5	100.8	..	9.4	36
Djibouti	153	175.2	..	8.2	19.6	..	1.4	9.5	28.0	12.3	14.1	34
Egypt, Arab Rep.	5,506	67.1	2.3	6.6	2.0	1.3	0.5	49.6	121.5	..	5.5	..
Iran, Islamic Rep.	131	1.7	0.1	0.4	0.8	0.1	0.1	31.4	84.2	17.0	17.5	..
Iraq	1,541	46.1	..	..	1.2	..	1.3	9.2	96.1	..	6.0	16
Jordan	1,408	217.9	15.5	6.7	5.3	0.1	1.8	44.2	141.8	..	13.5	49
Lebanon	626	140.2	6.0	16.7	6.8	..	3.5	70.5	80.6	8.4	10.7	27
Libya	129	20.9	..	..	0.9	..	3.7	16.5	165.0	..	4.3	18
Morocco	1,966	59.6	4.4	15.3	3.2	2.8	0.9	56.0	128.5	18.3	6.0	39
Syrian Arab Republic	3,627	158.8	2.2	3.1[b]	..	..	1.5	26.2	56.1	19.2	5.3	..
Tunisia	714	65.6	6.4	11.8	2.3	0.7	2.1	43.8	115.6	17.4	13.3	40
West Bank & Gaza	2,610	626.1	..	..	1.6	..	..	46.6	73.7	..	..	..
Yemen, Rep.	1,004	41.1	..	2.8	-0.4	..	0.7	20.0	69.0	..	3.9	..
SOUTH ASIA	**14,065**	**8.4**	**..**	**9.4**	**1.4**	**4.3**	**0.7**	**13.7**	**71.5**	**9.9**	**4.5**	**..**
Afghanistan	5,266	172.4	79.9	0.6	0.3	..	0.5	5.9	70.7	..	7.1	12
Bangladesh	2,669	17.0	11.8	5.2	1.0	..	0.6	6.5	74.4	13.8	7.8	25
Bhutan	135	178.6	42.6	11.0	2.8	..	1.8	29.9	72.2	15.9	6.6	65
India	2,436	1.9	0.6	8.6	1.5	5.0	0.7	15.1	70.8	12.9	4.5	..
Maldives	23	66.4	7.2	2.5	15.7	..	4.3	44.1	181.2	15.2	16.3	..
Nepal	871	31.3	29.6	8.7	0.4	..	..	13.3	76.8	22.7	11.9	29
Pakistan	2,174	11.9	5.3	26.3	0.6	..	0.6	10.9	70.1	10.9	4.7	29
Sri Lanka	423	20.7	4.6	11.9	1.4	1.2	3.6	21.9	95.5	8.8	7.4	38
EAST ASIA & PACIFIC	**11,875**	**5.9**	**..**	**3.3**	**3.6**	**2.4**	**..**	**39.5**	**95.5**	**15.4**	**..**	**..**
Cambodia	805	53.2	49.1	1.5	8.8	2.2	0.7	6.0	133.9	13.1	7.7	21
China	-651	-0.5	..	1.5	3.8	2.2	3.8	45.8	88.7	..	12.6	36
Fiji	91	103.2	..	1.9	4.1	..	2.0	37.1	105.6	14.9	8.9	..
Indonesia	53	0.2	1.2	19.4	2.7	5.2	0.9	15.8	125.4	18.1	6.6	34
Kiribati	64	629.7	59.2	..	5.3	..	1.3	11.5	16.6	..	10.0	..
Korea, Dem. Rep.	109	4.4	..	..	..	..	13.2	..	9.7	..	..	..
Lao PDR	421	62.2	36.4	9.7	3.8	..	1.5	12.5	68.1	11.7	3.5	..
Malaysia	-119	-4.0	0.0	3.5	3.7	1.0	1.9	67.0	144.7	21.0	5.9	52
Mongolia	428	150.8	13.7	27.9	18.7	..	6.8	17.7	124.2	12.2	10.3	39
Myanmar	3,935	73.9	..	8.2	..	..	..	1.2	12.8	4.4	1.5	21
Papua New Guinea	656	89.6	..	7.0	0.1	..	..	6.5	41.0	..	12.6	25
Philippines	190	1.9	0.0	7.7	1.3	14.6	1.0	37.0	104.5	20.3	8.5	38
Samoa	118	620.5	61,260.8	6.1	3.0	..	..	15.3	..	..	17.0	52
Solomon Islands	288	513.7	..	7.4	4.1	..	1.3	8.0	57.6	17.5	12.7	..
Thailand	-24	-0.4	-0.2	4.4	3.3	2.8	2.1	28.9	140.1	31.3	17.0	38
Timor-Leste	258	218.5	..	..	1.6	..	5.9	1.1	57.4	9.7	3.0	28
Tuvalu	27	2,702.5	..	..	0.9	..	..	37.0	34.4	..	22.1	..
Vanuatu	91	358.4	52.8	1.9	4.0	..	..	11.3	50.3	18.7	14.1	..
Vietnam	4,085	45.5	..	3.5	5.2	0.1	2.0	43.9	130.9	21.4	9.3	31
EUROPE & CENTRAL ASIA	**9,026**	**33.1**	**..**	**39.5**	**2.2**	**1.2**	**..**	**45.9**	**111.8**	**11.8**	**11.0**	**..**
Albania	298	103.0	..	10.2	9.7	..	2.6	60.1	116.2	..	9.8	33
Armenia	293	98.4	12.0	50.8	3.5	0.0	3.9	46.3	112.4	8.9	7.9	37
Azerbaijan	-63	-6.7	1.8	6.8	3.6	0.0	4.7	58.7	107.6	7.3	3.5	29
column number	1	2	3	4	5	6	7	8	9	10	11	12

TABLE 10

MDG 8: Develop a Global Partnership for Development, Low & Middle Income Countries

	Net official development assistance (ODA) received			Management of capital flows		Investment in infrastructure		Technology transfer		Public spending (% of GDP)		Corruption perceptions index (CPI)
	total (current million US$)	per capita (current US$)	as % of central gov't expense	total debt service (% of exports of goods, services, & income)	foreign direct investment, net inflows (% of GDP)	electricity produced from renewable sources, excl. hydroelectric (%)	specialized hospital beds (per 1,000 people)	internet users (per 100 people)	mobile cellular subscriptions (per 100 people)	for education	for public health	degree of corruption perceived to exist in government, score (0-100, 0 is most corrupt)
	2013	2013	2009-2013	2011-2013	2013	2011-2012	2009-2012	2013	2013	2009-2013	2013	2014
CONTINUED: **EUROPE & CENTRAL ASIA**												
Belarus	105	11.1	0.6	10.3	3.1	0.3	11.3	54.2	118.8	13.2	13.5	31
Bosnia & Herzegovina	550	143.6	8.5	17.8	1.8	..	..	67.9	91.1	..	16.2	39
Bulgaria	0	..	..	13.0	3.5	2.0	6.4	53.1	145.2	11.1	11.7	43
Georgia	653	145.5	16.5	22.0	5.9	..	2.6	43.1	115.0	6.7	6.7	52
Kazakhstan	91	5.4	..	34.0	4.2	..	7.2	54.0	184.7	13.0	10.9	29
Kosovo	533	292.2	..	3.7	4.9	0.0	..	..	..	..	..	33
Kyrgyz Republic	537	93.8	31.2	12.4	10.5	..	4.8	23.4	121.4	18.7	13.2	..
Latvia	0	..	..	..	2.8	3.1	5.9	75.2	228.4	8.9	9.8	55
Lithuania	0	..	..	..	1.6	14.9	7.0	68.5	151.3	13.6	12.1	58
Macedonia, FYR	252	119.4	5.2	18.9	4.1	0.0	4.5	61.2	106.2	..	13.2	..
Moldova	374	105.2	19.5	16.1	3.1	..	6.2	48.8	106.0	20.8	13.4	35
Montenegro	127	204.9	..	17.2	10.1	..	4.0	56.8	159.9	..	9.8	42
Romania	0	..	..	39.7	2.2	2.6	6.1	49.8	105.6	8.3	12.2	43
Russian Federation	0	..	..	..	3.4	0.1	..	61.4	152.8	..	8.4	..
Serbia	783	109.3	6.8	43.6	4.3	..	5.4	51.5	119.4	10.6	14.1	41
Tajikistan	382	46.6	..	25.5	1.3	..	5.5	16.0	91.8	16.4	7.3	23
Turkey	2,741	36.6	1.1	28.9	1.6	3.1	2.5	46.3	93.0	..	10.7	45
Turkmenistan	37	7.1	..	..	7.3	..	4.0	9.6	116.9	20.8	8.7	17
Ukraine	801	17.6	1.1	42.3	2.5	0.1	9.0	41.8	138.1	13.7	12.2	26
United Kingdom	0	..	..	..	1.8	10.0	2.9	89.8	124.6	13.1	16.2	78
Uzbekistan	293	9.7	..	..	1.9	..	4.4	38.2	74.3	..	9.7	18
LATIN AMERICA & CARIBBEAN	**10,202**	**17.4**	**..**	**16.5**	**3.3**	**4.4**	**..**	**45.8**	**114.1**	**15.9**	**..**	**..**
Belize	50	149.3	7.1	12.7	5.5	..	1.1	31.7	52.6	21.8	11.9	..
Bolivia	699	65.5	..	4.3	5.7	3.4	1.1	39.5	97.7	17.8	9.7	35
Brazil	1,150	5.7	0.2	28.6	3.6	6.6	2.3	51.6	135.3	14.6	6.9	43
Chile	79	4.5	0.2	..	7.3	9.3	2.1	66.5	134.3	19.2	15.3	73
Colombia	852	17.6	0.8	14.1	4.3	3.3	1.5	51.7	104.1	16.9	16.1	37
Costa Rica	38	7.8	0.3	22.3	6.5	18.7	1.2	46.0	146.0	23.4	26.9	54
Cuba	101	9.0	..	..	..	2.6	5.3	25.7	17.7	..	13.4	46
Dominican Republic	148	14.2	2.8	16.8	2.6	0.2	1.7	45.9	88.4	20.6	14.1	32
Ecuador	148	9.4	..	11.2	0.8	2.8	1.6	40.4	111.5	10.3	7.1	33
El Salvador	171	27.0	4.7	17.1	0.8	31.3	1.1	23.1	136.2	15.9	18.2	39
Guatemala	494	31.9	4.6	9.5	2.5	27.1	0.6	19.7	140.4	20.6	17.0	32
Guyana	102	127.4	..	4.9	6.7	..	2.0	33.0	69.4	10.2	13.9	30
Haiti	1,171	113.5	..	0.6	2.2	4.3	..	10.6	69.4	..	1.9	19
Honduras	628	77.5	13.1	14.4	5.8	4.0	0.7	17.8	95.9	..	12.2	29
Jamaica	70	25.9	0.4	25.9	4.6	6.2	1.7	37.8	102.2	20.7	9.7	38
Mexico	561	4.6	..	10.3	3.3	3.7	1.5	43.5	85.8	19.6	15.4	35
Nicaragua	497	81.7	33.2	12.6	7.5	22.4	0.9	15.5	112.0	22.8	20.9	28
Panama	7	1.8	..	5.7	11.8	0.3	2.2	42.9	163.0	13.0	12.8	37
Paraguay	129	19.0	2.0	12.9	1.2	..	1.3	36.9	103.7	18.7	7.8	..
Peru	368	12.1	1.1	14.0	4.6	1.9	1.5	39.2	98.1	15.2	14.7	38
Suriname	30	55.4	3.5	..	2.6	..	3.1	37.4	161.1	..	11.0	..
Uruguay	36	10.5	0.1	..	5.0	9.3	2.5	58.1	154.6	14.9	20.4	73
Venezuela, RB	35	1.2		22.2	1.6	..	0.9	54.9	101.6	20.7	4.3	..
column number	1	2	3	4	5	6	7	8	9	10	11	12

.. Data not available.
0 Zero, or rounds to zero at displayed number of decimal.
a Data refers to 2009.
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f Data refers to 2014.

Sources for tables on page 235.

TABLE 11

MDG 8: Develop a Global Partnership for Development, High-Income Countries

	Commitment to development index (CDI)	Net official development assistance (ODA)								Climate resilience		Policy coherence
	commitment to fostering global development, score (5 is average commitment)	total (current million US$)	as % of OECD/DAC donors' GNI*	given to LDCs† (% of OECD/DAC donors' GNI*)	committed multilaterally (%)	committed for economic infrastructure (current million US$)	committed for agriculture (current million US$)	given to build trade capacity (%)	given that is untied (current million US$)	aid activities for climate change mitigation (current million US$)	aid activities for climate change adaptation (current million US$)	Agriculture support estimate (% of GDP)
	2013	2014	2014	2013	2010	2013	2013	2013	2013	2012	2012	2013
SUB-SAHARAN AFRICA	..	..	..	..	..	..	..	..	..	..	..	..
Equatorial Guinea	..	..	..	..	..	..	..	..	..	..	..	..
MIDDLE EAST & NORTH AFRICA	..	..	..	..	..	..	..	..	..	..	..	..
Bahrain	..	..	..	..	..	..	..	..	..	..	..	..
Israel	..	..	..	..	12.0	..	..	..	..	..	..	0.3
Kuwait	..	..	..	..	..	..	..	..	..	..	..	..
Oman	..	..	..	..	..	..	..	..	..	..	..	..
Qatar	..	..	..	..	..	..	..	..	..	..	..	..
Saudi Arabia	..	..	..	..	17.0	..	..	..	..	..	..	..
United Arab Emirates	..	..	..	..	6.0	1,268.7	..	..	..	..	..	..
EAST ASIA & PACIFIC	..	..	..	..	..	..	..	..	..	..	..	..
Australia	4.6	4,203	0.3	0.1	37.0	212.3	305.4	14.1	2,024.3	152	163	0.1
Brunei Darussalam	..	..	..	..	..	..	..	..	..	..	..	..
Hong Kong	..	..	..	..	..	..	..	..	..	..	..	..
Japan	6.1	9,188	0.2	0.1	26.0	8,973.5	928.5	68.6	16,839.9	4,350	241	1.3
Korea, Rep.	..	1,851	0.1	0.1	26.0	..	100.9	33.6	1,155.7	32	43	2.1
Macao SAR, China	..	..	..	..	..	..	..	..	..	..	..	..
New Zealand	4.5	502	0.3	0.1	30.0	56.1	23.7	42.3	231.3	1	5	0.3
Singapore	..	..	..	..	..	..	..	..	..	..	..	..
EUROPE & CENTRAL ASIA	..	..	..	..	..	..	..	..	..	..	..	..
Austria	5.8	1,144	0.3	0.1	66.0	54.7	25.7	28.9	160.8	10	5	..
Belgium	5.0	2,385	0.5	0.2	48.0	43.1	143.8	22.7	414.2	7	6	..
Croatia	..	..	..	..	..	..	..	..	..	..	..	..
Cyprus	..	..	..	..	41.0	..	..	..	..	..	..	..
Czech Republic	5.1	209	0.1	0.0	65.0	3.6	4.3	24.6	11.5	1	1	..
Denmark	7.5	2,996	0.9	0.3	35.0	260.9	147.1	31.0	1,793.4	83	70	..
Estonia	..	..	..	..	74.0	2.2	..	..	..	..	..	..
Finland	6.0	1,635	0.6	0.2	56.0	64.0	83.0	30.4	434.3	8	17	..
France	6.1	10,371	0.4	0.1	42.0	1,954.4	379.6	37.0	5,251.3	2,570	500	..
Germany	5.0	16,249	0.4	0.1	38.0	4,306.9	570.2	40.3	7,499.0	1,437	200	..
Greece	3.1	248	0.1	0.0	59.0	0.1	0.0	0.5	0.4	0	0	..
Hungary	3.6	..	..	..	75.0	..	..	..	..	..	..	..
Iceland	..	35	0.2	0.1	28.0	4.0	5.4	42.2	23.8	4	1	1.1
Ireland	3.9	809	0.4	0.2	46.0	3.6	62.6	15.9	388.4	0	20	..
Italy	4.1	3,342	0.2	0.1	79.0	18.8	47.3	24.3	310.6	18	18	..
Luxembourg	4.2	427	1.1	0.4	59.0	26.0	22.9	21.9	266.4	2	1	..
Malta	..	..	..	..	39.0	..	..	..	..	..	..	..
Netherlands	5.7	5,572	0.6	0.2	37.0	209.0	272.1	31.0	2,098.9	88	215	..
Norway	5.7	5,024	1.0	0.3	45.0	487.5	761.6	36.5	3,804.1	457	45	0.8
Poland	2.9	437	0.1	0.0	73.0	2.4	1.3	5.4	138.1	0	0	..
Portugal	6.7	419	0.2	0.1	45.0	22.2	2.2	13.2	35.3	19	0	..
Slovak Republic	3.3	81	0.1	0.0	73.0	0.2	2.1	11.1	1.7	0	0	..
Slovenia	..	62	0.1	0.0	62.0	0.9	0.1	8.1	..	0	0	..
Spain	5.1	1,893	0.1	0.0	56.0	16.8	99.9	21.4	596.1	9	29	..
Sweden	4.8	6,223	1.1	0.3	52.0	168.7	154.3	21.3	2,386.4	121	174	..
Switzerland	4.7	3,548	0.5	0.1	38.0	228.0	132.6	23.4	2,809.6	51	72	0.9
United Kingdom	4.2	19,387	0.7	0.2	60.0	652.9	457.4	20.5	5,397.9	456	130	..
LATIN AMERICA & CARIBBEAN	..	..	..	..	..	..	..	..	..	..	..	..
Bahamas, the	..	..	..	..	..	..	..	..	..	..	..	..
Trinidad & Tobago	..	..	..	..	..	..	..	..	..	..	..	..
NORTH AMERICA	..	..	..	..	..	..	..	..	..	..	..	..
Canada	5.0	4,196	0.2	0.1	0.5	245.6	279.0	34.4	2,193.2	310	342	0.5
United States	4.4	32,729	0.2	0.1	0.3	2,096.2	1,265.3	20.1	16,569.6	0	0	0.5
column number	1	2	3	4	5	6	7	8	9	10	11	12

.. Data not available.
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d Data refers to 2012.
e Data refers to 2013.
f Data refers to 2014.

† Least Developed Countries: United Nations classification referring to 48 countries with lowest human development scores.
* Gross National Income

Sources for tables on page 235.

TABLE 12

United States: National Hunger and Poverty Trends

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
TOTAL POPULATION (MILLIONS)	**290.3[a]**	**293.0[a]**	**295.8[a]**	**298.6[a]**	**301.6[a]**	**304.4[a]**	**307.0[a]**	**309.3[a]**	**311.6[a]**	**313.9[a]**	**316.1[a]**	**318.9[a]**
FOOD INSECURITY PREVALENCE (%)												
All U.S. households	11.2	11.9	11.0	10.9	11.1	14.6	14.7	14.5	14.9	14.5	14.3	14.0
with hunger[b]	3.5	3.9	3.9	4.0	4.1	5.7	5.7	5.4	5.7	5.7	5.6	5.6
Adults	10.8	11.3	10.4	10.4	10.6	14.4	14.5	14.2	14.5	14.1	14.0	13.7
with hunger[b]	3.1	3.4	3.5	3.5	3.7	5.4	5.4	4.9	5.2	5.3	5.1	5.2
Children	18.2	19.0	16.9	17.2	16.9	22.5	23.2	21.6	22.4	21.6	21.4	20.9
with hunger[b]	0.6	0.7	0.8	0.6	0.9	1.5	1.3	1.3	1.1	1.3	1.0	1.2
PERCENT OF FEDERAL BUDGET SPENT ON FOOD ASSISTANCE[c]	**2.0**	**2.0**	**2.1**	**2.0**	**2.0**	**2.0**	**2.2**	**2.7**	**2.9**	**3.0**	**2.95**	**2.95**
PERCENT OF FEDERAL BUDGET SPENT ON SAFETY NET PROGRAMS[c]	**..**	**..**	**..**	**..**	**..**	**..**	**..**	**..**	**..**	**..**	**12.0**	**11.0**
TOTAL INFANT MORTALITY RATE (PER 1,000 LIVE BIRTHS)	**6.8**	**6.8**	**6.9**	**6.7**	**6.8**	**6.6**	**6.4**	**6.2**	**6.0**	**..**	**6.0**	**..**
White	5.7	5.7	5.7	5.6	5.6	5.5	5.3	5.4	5.2	..	5.1	..
White, non-Hispanic	5.7	5.7	5.8	5.6	5.6	5.5	..	5.3	5.2	..	5.1	..
Hispanic	5.7	5.6	5.6	5.4	5.5	5.6	5.3	5.1	4.6	..	4.7	..
African American	14.0	13.8	13.7	12.9	13.3	12.7	12.4	11.0	10.6	..	10.5	..
Asian/Pacific Islander	4.8	4.7	4.9	4.6	4.8	4.5	4.4	3.9	3.8	..	3.7	..
American Indian/Alaska Native	8.7	8.5	8.1	8.3	9.2	8.4	8.5	4.6	4.5	..	4.0	..
TOTAL POVERTY RATE (%)	**12.5**	**12.7**	**12.6**	**12.3**	**12.5**	**13.2**	**14.3**	**15.1**	**15.0**	**15.0**	**14.5**	**14.8**
Northeast	11.3	11.6	11.3	11.5	11.4	11.6	12.2	12.8	13.1	13.6	12.7	12.6
Midwest	10.7	11.6	11.4	11.2	11.1	12.4	13.3	13.9	14.0	13.3	12.9	13.0
South	14.1	14.1	14.0	13.8	14.2	14.3	15.7	16.9	16.0	16.5	16.1	16.5
West	12.6	12.6	12.6	11.6	12.0	13.5	14.8	15.3	15.8	15.1	14.7	15.2
White	10.6	10.8	10.6	10.3	10.5	11.2	12.3	13.0	12.8	12.7	12.3	12.7
White, non-Hispanic	8.2	8.6	8.3	8.2	8.2	8.6	9.4	9.9	9.8	9.7	9.6	10.1
Hispanic	22.5	21.9	21.8	20.6	21.5	23.2	25.3	26.6	25.3	25.6	23.5	23.6
African American	24.3	24.7	24.9	24.3	24.5	24.7	25.8	27.4	27.6	27.2	27.2	26.2
Asian	11.8	9.8	11.1	10.1	10.2	11.6	12.5	12.1	12.3	11.7	10.5	12.0
American Indian/Alaska Native	20.0[d]	..	..	..	..	24.2	..	..	23.9[d]	..	..	..
Elderly (65 years and older)	10.2	9.8	10.1	9.4	9.7	9.7	8.9	9.0	8.7	9.1	9.5	10.0
Female-headed households	28.0	28.4	28.7	28.3	28.3	28.7	29.9	31.6	31.2	30.9	30.6	30.6
Children under age 6 in households	19.8	20.0	20.0	20.0	20.8	21.3	23.8	25.3	24.5	24.4	22.2	23.5
TOTAL CHILD POVERTY RATE (18 YEARS AND UNDER) (%)	**17.6**	**17.8**	**17.6**	**17.4**	**18.0**	**19.0**	**20.7**	**22.0**	**21.9**	**21.8**	**19.9**	**21.1**
White	14.3	14.8	14.4	14.1	14.9	15.8	17.7	18.5	18.6	18.5	12.7	17.9
White, non-Hispanic	9.8	10.5	10.0	10.0	10.1	10.6	11.9	12.3	12.5	12.3	10.7	12.3
Hispanic	29.7	28.9	28.3	26.9	28.6	30.6	33.1	34.9	34.1	33.8	30.4	31.9
African American	34.1	33.6	34.5	33.4	34.5	33.9	35.4	37.8	37.4	36.7	38.3	36.0
Asian[d]	12.5	10.0	11.1	11.4	11.9	13.3	13.3	13.6	13.3	13.3	10.1	14.0
TOTAL UNEMPLOYMENT RATE (%)	**6.0**	**5.5**	**5.1**	**4.6**	**4.6**	**5.8**	**9.3**	**9.6**	**8.9**	**8.1**	**7.2**	**6.2**
White	5.2	4.8	4.4	4.0	4.1	5.2	8.5	8.7	7.9	7.2	6.5	5.3
Hispanic	7.7	7.0	6.0	5.2	5.6	7.6	12.1	12.5	11.5	10.2	8.7	7.4
African American	10.8	10.4	10.0	8.9	8.3	10.1	14.8	16.0	15.8	14.0	13.3	11.3
Asian	6.0	4.4	4.0	3.0	3.2	4.0	7.3	7.5	7.0	5.9	4.8	5.0
column number	1	2	3	4	5	6	7	8	9	10	11	12

TABLE 12

United States: National Hunger and Poverty Trends

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
HOUSEHOLD INCOME DISTRIBUTION (%)												
Total population												
Lowest 20 percent	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.3	3.2	3.2	3.2	3.1
Second quintile	8.7	8.7	8.6	8.6	8.7	8.6	8.6	8.5	8.4	8.3	8.4	8.2
Third quintile	14.8	14.7	14.6	14.5	14.8	14.7	14.6	14.6	14.3	14.4	14.4	14.3
Fourth quintile	23.4	23.2	23.0	22.9	23.4	23.3	23.2	23.4	23.0	23.0	23.0	23.2
Highest 20 percent	49.8	50.1	50.4	50.5	49.7	50.0	50.3	50.2	51.1	51.0	51.0	51.2
Ratio of highest 20 percent to lowest 20 percent	14.6	14.7	14.8	14.8	14.6	14.7	14.8	15.2	16.0	15.8	15.9	16.5
White												
Lowest 20 percent	3.6	3.6	3.6	3.7	3.7	3.6	3.7	3.5	3.5	3.5	3.4	..
Second quintile	8.9	8.8	8.9	8.9	8.9	8.8	8.9	8.7	8.6	8.6	8.7	..
Third quintile	14.8	14.8	14.7	14.6	14.9	14.8	14.8	14.7	14.5	14.5	14.6	..
Fourth quintile	23.2	23.1	22.9	22.9	23.3	23.3	23.2	23.3	22.9	23.0	22.9	..
Highest 20 percent	49.4	49.6	49.9	49.9	49.2	49.4	49.5	49.7	50.5	50.5	50.4	..
Ratio of highest 20 percent to lowest 20 percent	21.4	13.8	13.9	13.4	13.3	13.7	13.4	14.2	14.3	14.4	14.8	..
Hispanic												
Lowest 20 percent	3.9	3.8	3.9	3.8	3.9	3.7	3.7	3.5	3.5	3.4	3.5	..
Second quintile	9.4	9.3	9.5	9.3	9.5	9.2	9.0	9.0	9.1	8.9	9.1	..
Third quintile	15.0	14.9	15.2	15.0	15.2	14.7	14.7	14.7	14.7	14.6	14.9	..
Fourth quintile	23.1	22.9	23.3	22.9	23.5	23.2	23.1	23.4	22.9	23.1	23.5	..
Highest 20 percent	48.6	49.1	48.1	48.9	47.9	49.2	49.5	49.4	49.7	50.0	48.9	..
Ratio of highest 20 percent to lowest 20 percent	12.5	12.9	12.3	12.8	12.3	13.3	13.4	14.1	14.2	14.7	14.0	..
African American												
Lowest 20 percent	2.9	2.8	2.8	2.8	2.8	3.0	2.9	2.6	2.6	2.8	2.9	..
Second quintile	8.2	8.3	8.0	8.1	8.1	8.4	8.2	7.8	7.5	7.8	7.8	..
Third quintile	14.7	14.6	14.5	14.3	14.5	14.6	14.3	14.2	13.7	14.1	13.9	..
Fourth quintile	24.0	23.8	23.7	23.2	23.7	23.5	23.5	23.6	23.3	23.5	23.0	..
Highest 20 percent	50.2	50.5	50.9	51.6	50.8	50.6	51.1	51.7	52.9	51.9	52.4	..
Ratio of highest 20 percent to lowest 20 percent	17.3	18.0	18.2	18.4	18.1	16.9	17.6	19.9	20.3	18.5	18.1	..
Asian												
Lowest 20 percent	2.7	3.2	2.9	3.2	3.1	2.9	2.7	3.0	3.0	3.0	2.8	..
Second quintile	9.1	9.2	9.2	8.8	9.2	8.6	8.2	8.9	8.7	8.9	8.7	..
Third quintile	15.9	15.1	15.3	14.7	15.6	15.1	14.4	15.3	15.1	14.9	14.8	..
Fourth quintile	24.6	23.3	23.7	23.0	24.0	24.1	23.0	24.5	23.5	23.6	23.7	..
Highest 20 percent	47.8	49.2	48.9	50.3	48.0	49.3	51.6	48.3	49.7	49.6	50.0	..
Ratio of highest 20 percent to lowest 20 percent	17.7	15.4	16.9	15.7	15.5	17.0	19.0	16.2	16.6	16.5	17.9	..
column number	1	2	3	4	5	6	7	8	9	10	11	12

a U.S. Census Bureau estimate.
b Data from 2005 onward is referred to by the USDA as "very low food security" instead of "food insecure with hunger."
c Data refer to fiscal year.
d 3-year average: 2001-2003 for 2003, and 2007-2011 for 2011

Sources for tables on page 235.

TABLE 13

United States Hunger, Poverty, and Nutrition Program Participation, by State

	Food insecurity, 2012-2014		Poverty, 2014				Participation in federal food assistance programs, fiscal year 2014				
	people food insecure (avg. %)		poverty rate below 100% of the poverty level (%)		poverty rate below 50% of the poverty level (%)		SNAP (avg. monthly participants)	WIC (total participants)	school breakfast program (total participants)	national school lunch program (total participants)	summer food service program (avg. daily attendance)
	total	with hunger	all	under 18	all	under 18					
UNITED STATES	**14.3**	**5.6**	**14.5**	**19.9**	**7.0**	**9.9**	**46,536,760**	**8,258,476**	**8,258,476**	**13,635,634**	**2,426,892**
Alabama	16.8	7.2	19.3	27.7	8.2	13.1	902,073	131,046	131,046	236,582	30,308
Alaska	12.0	4.3	11.2	15.8	4.8	5.7	87,486	19,605	19,605	21,045	5,078
Arizona	15.4	6.2	18.2	25.6	8.5	12.1	1,044,310	173,020	173,020	300,334	23,688
Arkansas	19.9	8.1	18.9	26.4	7.6	11.1	491,965	83,289	83,289	172,605	41,946
California	13.5	5.1	16.4	22.7	7.0	9.3	4,349,634	1,348,939	1,348,939	1,646,228	114,604
Colorado	13.6	5.2	12.0	15.4	5.5	6.7	505,169	91,991	91,991	168,992	17,933
Connecticut	13.9	6.0	10.8	14.9	4.9	6.9	438,559	52,561	52,561	93,248	12,171
Delaware	12.1	4.6	12.5	17.7	6.0	7.8	150,232	19,873	19,873	41,137	8,190
District of Columbia	13.2	4.9	17.7	26.0	9.1	12.4	142,707	14,501	14,501	35,188	34,778
Florida	13.8	5.5	16.5	23.8	7.2	10.3	3,526,311	466,736	466,736	773,080	145,389
Georgia	15.7	6.2	18.3	26.3	8.2	11.9	1,815,833	271,416	271,416	626,650	71,555
Hawaii	12.3	4.0	11.4	14.7	5.0	6.0	194,264	33,923	33,923	37,582	5,324
Idaho	14.1	5.3	14.8	18.8	6.0	7.1	211,781	41,423	41,423	76,033	20,959
Illinois	11.7	4.4	14.4	20.2	6.6	9.0	2,015,303	265,923	265,923	419,947	54,067
Indiana	14.6	6.4	15.2	21.5	6.8	9.2	892,699	155,323	155,323	260,521	58,664
Iowa	11.4	4.6	12.2	15.3	5.4	6.6	408,070	63,767	63,767	93,853	13,607
Kansas	15.9	6.4	13.6	17.7	5.9	7.6	293,456	65,699	65,699	113,862	25,237
Kentucky	17.5	7.0	19.1	26.2	8.2	11.9	828,076	121,682	121,682	278,707	20,189
Louisiana	17.6	7.1	19.8	27.9	9.1	14.2	877,340	130,399	130,399	264,461	40,912
Maine	16.2	7.5	14.1	19.1	5.9	9.1	230,536	22,947	22,947	46,815	10,553
Maryland	12.5	4.8	10.1	13.0	4.7	5.8	787,597	140,467	140,467	235,995	73,830
Massachusetts	9.6	4.1	11.6	15.2	5.4	7.3	863,412	115,110	115,110	158,634	46,751
Michigan	14.7	6.3	16.2	22.6	7.4	10.6	1,679,421	251,716	251,716	388,785	76,198
Minnesota	10.4	4.2	11.5	14.9	4.9	6.2	533,743	121,755	121,755	190,639	45,966
Mississippi	22.0	7.3	21.5	29.4	10.1	15.4	656,871	87,973	87,973	206,865	26,916
Missouri	16.8	7.9	15.5	21.1	6.9	9.7	858,416	138,657	138,657	271,369	27,008
Montana	11.5	5.4	15.4	18.5	7.0	8.4	124,906	19,227	19,227	28,944	7,615
Nebraska	13.9	5.5	12.4	16.2	5.2	6.7	173,530	39,211	39,211	68,913	9,879
Nevada	15.2	6.3	15.2	22.0	7.5	10.2	383,622	74,262	74,262	90,758	9,716
New Hampshire	10.0	4.7	9.2	13.0	3.7	4.8	111,701	14,736	14,736	22,112	14,659
New Jersey	11.7	4.9	11.1	15.9	4.9	7.0	883,434	163,049	163,049	273,380	57,793
New Mexico	12.3	4.6	21.3	29.5	9.4	13.9	431,494	58,376	58,376	149,229	22,386
New York	14.4	4.9	15.9	22.6	7.0	10.2	3,122,879	485,825	485,825	660,112	393,066
North Carolina	16.7	6.4	17.2	24.3	7.3	10.5	1,575,676	255,672	255,672	432,595	98,255
North Dakota	8.4	2.9	11.5	14.8	5.7	7.9	53,753	12,814	12,814	23,947	2,454
Ohio	16.9	7.5	15.8	22.9	7.3	11.1	1,752,135	250,370	250,370	428,384	60,307
Oklahoma	16.5	6.6	16.6	22.4	7.4	10.2	608,492	114,490	114,490	226,576	11,315
Oregon	16.1	6.3	16.6	21.6	7.1	8.9	802,190	103,227	103,227	139,452	38,653
Pennsylvania	11.3	4.6	13.6	19.4	6.2	9.1	1,796,154	248,761	248,761	346,468	96,893
Rhode Island	12.7	4.7	14.3	19.8	6.4	9.1	178,518	22,139	22,139	32,832	8,188
South Carolina	13.9	5.3	18.0	27.1	8.4	13.5	834,511	113,179	113,179	270,239	56,172
South Dakota	11.9	4.8	14.2	18.0	5.8	7.0	100,938	19,573	19,573	28,420	6,060
Tennessee	16.3	6.2	18.3	26.2	7.9	11.8	1,312,505	153,742	153,742	361,070	42,283
Texas	17.2	6.2	17.2	24.6	7.1	10.3	3,852,675	916,461	916,461	1,864,871	180,355
Utah	13.3	4.7	11.7	13.3	5.0	5.2	229,911	61,259	61,259	75,078	13,186
Vermont	12.6	6.0	12.2	15.8	5.3	7.6	93,000	14,227	14,227	22,934	6,654
Virginia	10.1	4.3	11.8	15.8	5.5	7.2	918,902	144,598	144,598	276,308	55,519
Washington	13.7	5.5	13.2	17.5	6.0	7.7	1,095,551	183,405	183,405	187,540	40,365
West Virginia	15.3	5.9	18.3	24.7	7.9	11.5	362,501	43,763	43,763	131,986	11,930
Wisconsin	11.4	4.9	13.2	18.4	5.5	7.5	841,533	108,901	108,901	177,034	88,294
Wyoming	14.0	5.3	11.2	12.8	4.9	5.8	35,871	11,629	11,629	14,860	3,516
Puerto Rico	..	..	46.2	58.4	25.5	37.4	..	173,510	173,510	129,227	29,430
column number	1	2	3	4	5	6	7	8	9	10	11

Sources for tables on page 235.

Sources for Data Tables

TABLE 1

Country Demographics and Economic Indicators

Columns 1-7 and 9-25: World Bank (2015), World Development Indicators.

Column 8: United Nations Development Program (2015), *Human Development Report, 2015.*

TABLE 2

MDG 1: Eradicate Extreme Poverty

Columns 1-10: World Bank (2015), World Development Indicators.

Column 11: United Nations (2015), Millennium Development Goals Indicators.

TABLE 3

MDG 1: Eradicate Extreme Hunger

Columns 1-2: United Nations (2015), Millennium Development Goals indicators, 2013 (regional data) and World Bank (2015), World Development Indicators (national data), 2015.

Columns 3-9: World Bank (2015), World Development Indicators.

TABLE 4

MDG 2: Achieve Universal Primary Education

Columns 1-6: World Bank (2015), World Development Indicators.

TABLE 5

MDG 3: Promote Gender Equality & Empower Women

Columns 1-7: World Bank (2014), World Development Indicators.

TABLE 6

MDG 4: Reduce Child Mortality

Columns 1-4: World Bank (2014), World Development Indicators.

TABLE 7

MDG 5: Improve Maternal Health

Columns 1-8: World Bank (2015), World Development Indicators.

TABLE 8

MDG 6: Combat HIV/AIDS, Malaria & Other Diseases

Columns 1, 4, and 9-12: World Bank (2015), World Development Indicators.

Columns 2-3 and 5-8: United Nations (2015), Millennium Development Goals Indicators.

TABLE 9

MDG 7: Ensure Environmental Sustainability

Columns 1-11: World Bank (2015), World Development Indicators.

Column 12: United Nations (2015), Millennium Development Goals Indicators.

Sources for Data Tables

TABLE 10

MDG 8: Develop a Global Partnership for Development, Low & Middle Income Countries

Columns 1-6 and 8-11: World Bank (2015), World Development Indicators.

Column 7: World Health Organization (2015), *World Health Statistics, 2015.*

Column 12: Transparency International (2015), *Corruption Perceptions Index 2014.*

TABLE 11

MDG 8: Develop a Global Partnership for Development, High Income Countries

Column 1: The Center for Global Development (2015), 2014 *Commitment to Development Index.*

Columns 2-4, 8, and 12: United Nations (2015), Millennium Development Goals Indicators.

Columns 5-7 and 9-11: Organization for Economic Cooperation and Development (OECD) (2015), *Multilateral Aid 2015.*

TABLE 12

United States: National Hunger and Poverty Trends

Total Population (millions): U.S. Census Bureau (2015), 2004-2014 Census Data.

Food Insecurity Prevalence: U.S. Census Bureau (2015), 2004-2014 U.S. Department of Agriculture Data.

Percent of Federal Budget Spent on Food Assistance: Bread for the World Estimate (2015), Data from U.S. Department of Agriculture Food and Nutrition Service spending reports.

Percent of Federal Budget Spent on Safety Net Programs: Center on Budget and Policy Priorities (2015), 'Policy Basics: Where Do Our Federal Tax Dollars Go?,' March 11, 2015.

Total Infant Mortality Rate: U.S. Centers for Disease Control and Prevention (2015), Period Linked Birth-Infant Death Data Files, 2013.

Total Poverty Rate: U.S. Census Bureau (2015), 2004-2014 Census Data, *American Community Survey*, factfinder.census.gov, Table #S1701.

Total Unemployment Rate: Bureau of Labor Statistics (2015), U.S. Department of Labor "Labor Force Statistics from the Current Population Survey," 2014.

Household Income Distribution: U.S. Census Bureau (2015), 2004-2014 Census Data.

TABLE 13

United States: State Hunger and Poverty in 2013

Columns 1 and 2: U.S. Department of Agriculture (2015), *Household Food Security in the United States in 2014.*

Columns 3-6: U.S. Census Bureau (2015), *American Community Survey*, 'Poverty Status in the Past 12 Months (2012) 1 Year Estimates', factfinder.census.gov, table #B17024.

Columns 7-11: U.S. Department of Agriculture (2015), 2014 Program Data.

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Phone: +39 06 57051
www.fao.org

Foods Resource Bank is a Christian response to world hunger. Its goal is for hungry people to know the dignity and hope of feeding themselves by making it possible for them, through sustainable smallholder agricultural programs, to produce food for their families with extra to share, barter or sell. Foods Resource Bank endeavors to build networks with various agricultural communities in "growing projects" in the United States, allowing participants to give a gift only they can give. These volunteers grow crops or raise animals, sell them in the United States and the resulting money is used by implementing members (denominations and their agencies) to establish food security programs abroad.

4479 Central Avenue
Western Springs, IL 60558
Phone: (312) 612-1939
www.FoodsResourceBank.org

Presbyterian Hunger Program provides a channel for congregations to respond to hunger in the United States and around the world. With a commitment to the ecumenical sharing of human and financial resources, the program provides support for the direct food relief efforts, sustainable development and public policy advocacy. The Presbyterian Hunger Program helps thousands of Presbyterian Church (USA) congregations become involved in the study of hunger issues, engage with the communities of need, advocate for just public policies and business practices, and move toward simpler corporate and personal lifestyles.

100 Witherspoon Street
Louisville, KY 40202
Phone: (502) 569-5832
Fax: (502) 569-8963
www.pcusa.org/hunger

Sisters of Charity of the Incarnate Word is an international congregation of women religious. Who we are and what we do is grounded in a dynamic belief that our loving God became fully human in the person of Jesus. In this act of becoming human, God invites all creation to share in Divine Life. This belief compels us to act to make God's love real in the world by promoting human dignity, especially among the most vulnerable.

4503 Broadway Street
San Antonio, Texas 78209
Phone: (210) 828-2224
www.amormeus.org

United Church of Christ (National) supports 1.2 million members in congregations and other settings of the United Church of Christ in developing relationships with the greater church community that are global, multiracial and multicultural, open and affirming, and accessible to all. Programs of United Church of Christ national setting include Volunteer Ministries and National Disaster Ministries, as well as ministries of Refugee & Immigration, Health & Wholeness Advocacy, and One Great Hour of Sharing and Neighbors In Need special mission offerings.

700 Prospect Avenue
Cleveland, Ohio 44115
Phone: 216-736-2100
http://ucc.org

United Methodist Committee on Relief is the not-for-profit global humanitarian aid organization of the United Methodist Church. UMCOR is working in more than 80 countries worldwide, including the United States. Our mission, grounded in the teachings of Jesus, is to alleviate human suffering—whether caused by war, conflict or natural disaster, with open hearts and minds to all people. UMCOR responds to natural or civil disasters that are interruptions of such magnitude that they overwhelm a community's ability to recover on its own. We partner with people to rebuild their communities, livelihoods, health, and homes. In times of acute crisis, we mobilize aid to stricken areas–emergency supplies, fresh water, and temporary shelter–and then stay, as long as it takes, to implement long-term recovery and rehabilitation.

475 Riverside Drive, Room 330
New York, NY 10115
Phone: (212) 870-3808
umcor@gbgm-umc.org
www.umcor.org

World Relief serves the most vulnerable, regardless of religion, race, ethnicity or gender. In 20 countries and 20 locations in the United States, World Relief's innovative ministries focus on economic development, health and social development, and refugee care. World Relief equips churches to minister to people's physical, emotional and spiritual needs. Since 1944, World Relief has been empowering churches to serve the world's most vulnerable.

7 E. Baltimore Street
Baltimore, MD 21202
Phone: (443) 451-1900
www.WorldRelief.org

Friends:

(Donations under $5,000)

Allegany Franciscan Ministries
www.afmfl.org

Christian Church (Disciples of Christ)
www.disciples.org

Church of the Brethren, Global Food Crisis Fund
www.brethren.org

Church World Service
www.churchworldservice.org

Congressional Hunger Center
www.hungercenter.org

Cooperative Baptist Fellowship
www.thefellowship.org

Episcopal Church
www.episcopalchurch.org

Lutheran World Relief
www.lwr.org

Nazarene Compassionate Ministries
www.ncm.org

Salvation Army National Corporation
www.salvationarmyusa.org

Wesleyan Church
www.wesleyan.org

Women's Missionary Society of the African Methodist Episcopal Church
www.wms-amec.org

World Hope International
www.worldhope.org

World Renew
www.worldrenew.net

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Acronyms

AARP	American Association of Retired Persons
ACA	Affordable Care Act
ADA	Americans with Disabilities Act
ARRA	American Recovery and Reinvestment Act of 2009
BMI	Body Mass Index
CACFP	Child and Adult Care Food Program
CCDM	Community-based, chronic disease management
CDC	Centers for Disease Control and Prevention
CFAN	Climate Forecast Applications Network
CHNA	Community Health Needs Assessment
CHRs	Community health representatives
CO2	Carbon dioxide
COPE	Community Outreach & Patient Empowerment
DI	Social Security Disability Insurance
FAO	Food and Agriculture Organization of the United Nations
FFD	Financing for Development
FINI	Food Insecurity Nutrition Incentive program
FVRx	Fruit and vegetable prescription program
GAO	Government Accountability Office
GDP	Gross Domestic Product
HBCUs	Historically Black Colleges and Universities
HELP	U.S. Senate Committee on Health, Education, Labor, and Pensions
HHC	Health and Hospitals Corporation
HHS	U.S. Department of Health and Human Services
HPHS	Health Professions High School
IMF	International Monetary Fund
IOM	Institute of Medicine
IRS	Internal Revenue Service
MCC	Millennium Challenge Corporation
MDGs	Millennium Development Goals
MEANS	Matching Excess And Need for Stability
MOWA	Meals on Wheels America
NFP	Nurse-Family Partnership
NGO	Nongovernmental organization
NHANES	National Health and Nutrition Examination Survey
OAA	Older Americans Act
PEPFAR	President's Emergency Plan for AIDS Relief
SDGs	Sustainable Development Goals
SNAP	Supplemental Nutrition Assistance Program
SSI	Supplemental Security Income
SUN	Scaling up Nutrition
TANF	Temporary Assistance for Needy Families
TB	Tuberculosis
USAID	United States Agency for International Development
USDA	U.S. Department of Agriculture
UUSC	Unitarian Universalist Service Committee
WHO	World Health Organization
WIC	Special Supplemental Nutrition Assistance for Women, Infants, and Children

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