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THURSDAY, 1/12/17, 4:00 PM

# ASPE ISSUE BRIEF

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## Evidence Indicates a Range of Challenges for Puerto Rico Health Care System

January 12, 2017

The 3.5 million Americans living in the Commonwealth of Puerto Rico do not have access to a health care system considered standard in the rest of the nation. News reports in recent years describe hospitals laying off employees and closing wings, medical centers suspending or limiting health care services such as operating room hours, and air ambulance suppliers suspending services.<sup>1</sup> Concerns about the public health infrastructure in Puerto Rico were heightened this year after outbreaks of Zika virus in the area. To better understand the state of health care in Puerto Rico, the Office of the Assistant Secretary for Planning and Evaluation (ASPE) supported an environmental scan<sup>2</sup> and site visit,<sup>3</sup> conducted an analysis of available data, and synthesized information and observations across U.S. Department of Health and Human Services (HHS) operating and staff divisions that work most closely with the Commonwealth. Despite limited data availability, we found trends that raise concerns about the Puerto Rico health care system infrastructure and workforce, prevalence of certain chronic diseases, and metrics of access to services and quality of care. The system shows some indications of stability, but evidence regarding a declining physician workforce, overcrowded hospitals with emergency department patients waiting nearly 13 hours from arrival to admission, and higher rates of self-reported fair or poor health suggest a need for attention.

### Key Findings

#### *Economic Context*

- In 2015, Puerto Rico's median household income was 36 percent of that in the 50 states and the District of Columbia (\$19,350 compared with \$53,889); its poverty rate was nearly four times that of the 50 states and D.C. (41 percent compared with 12 percent of people with incomes below the federal poverty level [FPL], respectively).
- Puerto Rico experienced a net population loss of 61,000 in 2015; the population declined by 6.8 percent (251,000 residents) between 2010 and 2015. This decline included a substantial drop in the educated and working-age (ages 20 to 65) population.
- Per capita, total health expenditures for the Commonwealth's population were \$3,065 in 2014, compared to \$9,403 on the U.S. mainland.

#### *Workforce*

- Physicians have been leaving Puerto Rico for at least the last five years; in 2015 alone, approximately 500 physicians left the island according to the Puerto Rico College of Physicians.

- Puerto Rico has less than half the rates of emergency physicians; neurosurgeons; orthopedists and hand surgeons; plastic surgeons; and ear, nose, and throat specialists, compared to the availability of these providers on the U.S. mainland. In 2015, it had only one pediatric anesthesiologist, two pediatric allergists, six hand surgeons, and eight colorectal surgeons.
- The Health Resources and Services Administration (HRSA) has deemed 72 of Puerto Rico's 78 municipalities as medically underserved areas. For example, only 90 obstetricians/gynecologists assist in childbirths, resulting in an estimated ratio of 400 births per obstetrician each year, or more than one birth per doctor per day.<sup>4</sup> In the mainland U.S., HRSA estimates the comparable ratio of births per obstetrician each year is roughly half.<sup>5</sup>

#### *Access and Service Use*

- Approximately 94 percent of Puerto Rico's residents had health insurance in 2014. Nearly half of residents are covered by Medicaid, CHIP, or low-income coverage funded by Puerto Rico-only dollars. Unlike Medicaid programs in the mainland U.S., federal funding for Puerto Rico's Medicaid program is capped.
- Long wait times are a persistent challenge, including a median wait time of nearly 13 hours between arrival and admission and the need to wait up to nine months for appointments with certain categories of specialists and some as long as 12 hours and 58 minutes in emergency departments between arrival and admission.
- People in Puerto Rico are less likely to receive certain types of preventive care, as evidenced by lower rates of colorectal cancer screenings for those ages 50-75 (52.5 percent) than the U.S. mainland (66.4 percent) and Pap tests for those ages 21-65 (77.4 percent, compared to 82.6 percent), but are more likely to have a mammogram (82.3 percent, compared to 78.1 percent).
- Puerto Rico has one-quarter the number of intensive care unit hospital beds per person compared to the mainland U.S. (70.1 per 1 million people, compared with 290.6 beds per 1 million on the mainland U.S.).
- Puerto Rico does not have any burn unit beds in its hospitals.
- The rate of Puerto Ricans receiving a flu shot in the last year was 12 percent lower than that of the mainland U.S. population.
- Access to treatment considered to be the standard of care falls far short of mainland standards. While ninety-four percent of acute myocardial infarction patients in Puerto Rico receive aspirin within 24 hours before their emergency department arrival or during their stay (compared to 99.1 percent of those in the mainland U.S.), only 54 percent receive percutaneous coronary intervention within 90 minutes, compared to 93.1 percent of patients who receive this level of care in the mainland U.S.

#### *Health Indicators*

- Puerto Ricans are twice as likely to suffer from coronary heart disease as the general U.S. population. Rates of myocardial infarction, asthma, and high blood pressure are also higher in Puerto Rico than on the U.S. mainland.
- In 2015, life expectancy was similar for residents of Puerto Rico (79.25 years) and the U.S. mainland (79.68 years).

- Puerto Rico has a higher infant mortality rate than the U.S. mainland (7.57 per 1,000 in 2015 compared to 5.87 per 1,000), and a premature birth rate well above the average for the U.S. mainland (11.8 percent in Puerto Rico versus 9.6 percent on the mainland).
- Self-reported health status is far worse in Puerto Rico, with adults reporting higher rates of fair or poor health (35.4 percent compared to 17.9 percent in 2014).

In this report, we describe the demographic and economic contexts in which health care delivery in Puerto Rico operates. We then examine the infrastructure in the Commonwealth, including facilities such as hospitals, as well as the critical issue of physician supply. Subsequent sections discuss health insurance coverage, access and service use, prevalence of disease, and health outcomes and quality. This assessment does not attempt to infer the causes of any issues, nor does it propose policy solutions. It merely captures the best information available about the health of Americans living in Puerto Rico and the system in place to deliver care and maintain their health and well-being.

### Demographic and Economic Contexts

The archipelago of Puerto Rico includes one main island—where the vast majority of the population lives—and six smaller islands, comprising 78 municipalities in all.<sup>6</sup>

FIGURE 1

Population Size, by Municipality, 2015



Source: ASPE analysis of US Census Bureau Population Estimates<sup>7</sup>, 2010-2015

*Economic Decline.* In 2014, Puerto Rico’s real gross domestic product (GDP) was \$103.1 billion, down from \$112 billion in 2005. Puerto Rico’s economy relied on three major industrial sectors: manufacturing (46.5 percent of GDP), services (41.6 percent), and government (8 percent).<sup>8</sup> The decline in Puerto Rico’s GDP has been accompanied by a 9 percent decline in labor force participation (1.29 million in 2010 to 1.18 million in 2014) and a 7 percent decline in employment (1.08 million in 2010 down to 1.01 million in 2014).<sup>9</sup> The unemployment rate in

Puerto Rico—11.9 percent in November 2016—has consistently exceeded the unemployment rate of the U.S. overall—4.6 percent in November 2016.<sup>10</sup> In 2015, Puerto Rico’s median household income was 36 percent of that in the 50 states and D.C. (\$19,350 compared with \$53,889 in the mainland U.S.), and its poverty rate was nearly four times that of the U.S. overall (41.8 percent, compared with 11.3 percent of families with incomes below the FPL in the mainland U.S.).<sup>11</sup>

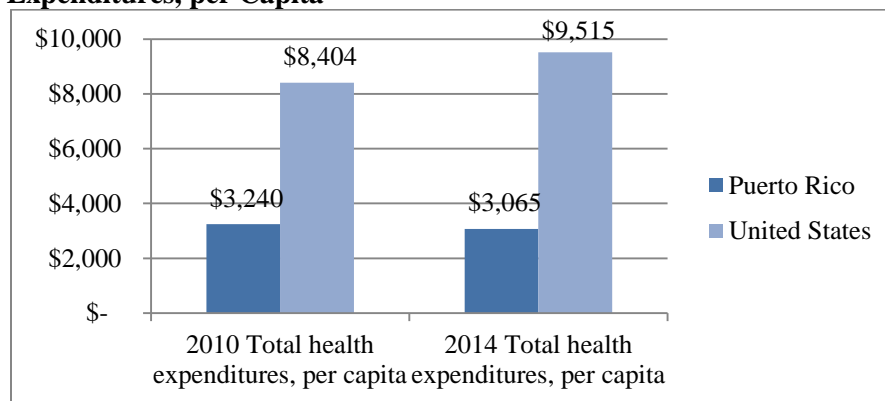
The ongoing economic decline of Puerto Rico has been exacerbated by the Commonwealth government’s debt burden.<sup>12, 13, 14</sup> Puerto Rico currently has \$72 billion in debt and, unlike any U.S. state government, cannot authorize its municipalities and public corporations to declare bankruptcy as a means of restructuring its debt.<sup>15</sup> Budget cuts have substantially reduced education, health care, and social services.<sup>16</sup>

*Population Changes.* Puerto Rico experienced a net population loss of 61,000 in 2015, and the population declined by 6.8 percent (251,000 residents) between 2010 and 2015.<sup>17</sup> One source projects that the island may lose another 500,000 people by 2050.<sup>18</sup> The current emigration flows now exceed those of the “Great Migration”—the period between 1946 and 1960 when 605,450 Puerto Ricans—an average of 40,000 a year—left the islands to settle on the U.S. mainland.<sup>19</sup> Emigration flows have been distributed unevenly across the population, leading to a substantial decline in the educated and working-age (ages 20 to 65) population.<sup>20</sup> The average person leaving Puerto Rico is 29 years old—younger than those staying in or immigrating to Puerto Rico. More than 50 percent of emigrants are men (53 percent), speak English well or very well (65 percent), have graduated from high school (75 percent), and live above the poverty level (58 percent).

*Health Care Spending.* From 2010 to 2014, Puerto Rico’s total public and private health care expenditures decreased by 10 percent, from \$12.1 billion to \$10.9 billion. Per capita, total health expenditures for the Commonwealth’s population declined by 5 percent, from \$3,240 in 2010 to \$3,065 in 2014;<sup>21</sup> in the mainland U.S., per capita health expenditures were \$9,515.<sup>22</sup> (See Figure 2.) As of 2014, the health sector made up approximately 10.5 percent and 17.4 percent of GDP in Puerto Rico and the mainland U.S., respectively.<sup>23</sup>

FIGURE 2

**Total Health Expenditures, per Capita**



Sources: Departamento de Salud. 2015.

Centers for Medicare and Medicaid Services. 2015. NHE Summary Including Share of GDP, 1960-2015.

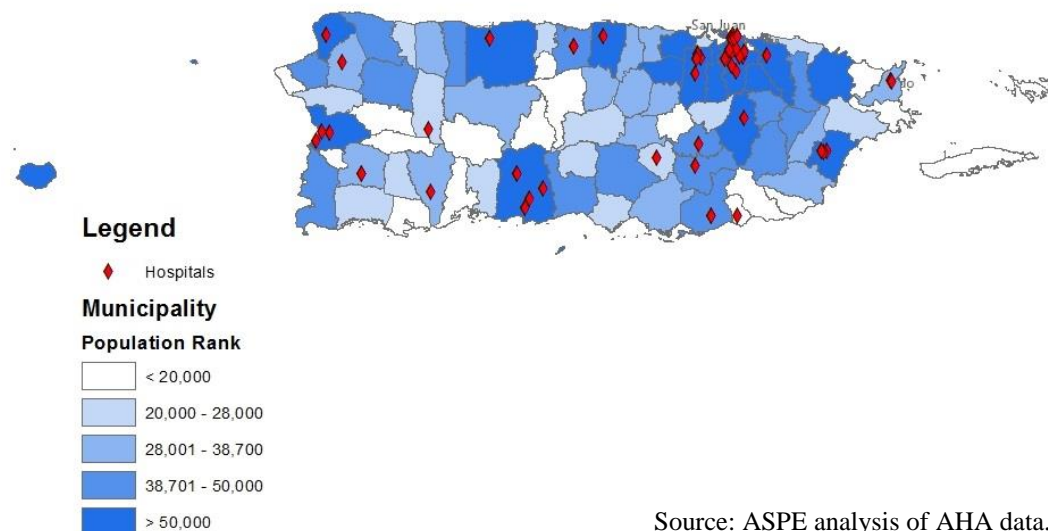
## Health Infrastructure

Puerto Rico's Department of Health (Departamento de Salud, or DS) administers the island's public health programs and services. The Health Insurance Administration of Puerto Rico (Administración de Seguros de Salud de Puerto Rico, or ASES) administers the Government Health Insurance Plan<sup>i</sup> (GHIP) and directly contracts with managed care organizations and other health care providers through a cooperative agreement with the DS. The Government Health Plan includes the Commonwealth's Medicaid program, Children's Health Insurance Program (CHIP), dually eligible Medicare-Medicaid beneficiaries, and coverage funded by Puerto Rico-only dollars.<sup>24</sup> All public employees also receive their health coverage through the GHP. Both the DS and the ASES organize their services by geographic regions: East/Mayagüez-Aguadilla, Northeast/Arecibo, Southeast-Southwest/Ponce, West/Caguas, Northwest/Fajardo-Vieques-Culebra, Southwest/Bayamón, and North-San Juan/Metro. However, the municipalities within these DS and ASES regions do not completely coincide with one another.<sup>ii</sup>

*Hospitals.* In 2015, Puerto Rico had 2.68 beds per 1,000 people, and the mainland U.S. had 2.90 beds per 1,000 people. In total, Puerto Rico had 64 hospitals, compared to 6,187 registered hospitals in the mainland U.S.;<sup>25</sup> Figure 3 displays their locations. More than half of them are for-profit and one-third are nonprofit. In contrast, about a quarter of all U.S. hospitals are for-profit and half are nonprofit (Table 1).<sup>iii</sup> One significant difference between hospitals in Puerto Rico and the mainland U.S. is their size. Puerto Rico has more mid-size hospitals than does the mainland. About half of Puerto Rico's hospitals have between 100 and 199 beds, whereas only a fifth of U.S. hospitals fall into that category. Puerto Rico also does not have any very large hospitals, defined as having 500 beds or more; in contrast, 5 percent of U.S. hospitals fall into this category (Table 2).

FIGURE 3

### Hospital Locations over Population, by Municipality



Source: ASPE analysis of AHA data, 2015

<sup>i</sup> The government Health Plan was previously called as MiSalud and Reforma.

<sup>ii</sup> For a map of the DS service area see <http://www.salud.gov.pr/Pages/Regiones-de-Salud-y-Servicios-Directos.aspx>. For a map of the ASES service area, see <http://www.psgmolinahealth.care.com/es/Pages/regions.aspx>.

<sup>iii</sup> The AHA data presented in Tables 1 through 5 are from 2014, the latest data available to the Urban Institute when these analyses were performed. There was a net increase of 5 hospitals in Puerto Rico in 2015.

TABLE 1

**Hospital Ownership, Puerto Rico versus the United States, 2014**

	Puerto Rico		United States <sup>1</sup>	
	<i>Number</i>	<i>Percent</i>	<i>Number</i>	<i>Percent</i>
<b>Hospital Ownership</b>				
<b>Nonprofit</b>	19	32.2***	3,085	49.9***
<b>For-profit</b>	31	52.5***	1,613	26.1***
<b>Government, Nonfederal</b>	8	13.6	1,266	20.5
<b>Government, Federal</b>	1	1.7	216	3.5
<b>Total Hospitals</b>	59	100	6,180	100

Source: Urban Institute analysis of the AHA 2014 Annual Survey Database.

Notes: \*/\*\*/\*\* Estimates statistically differ at the 0.10/0.05/0.01 level.

<sup>1</sup> Excludes Puerto Rico.

TABLE 2

**Hospital Bed Size, Puerto Rico versus the United States, 2014**

	Puerto Rico		United States <sup>1</sup>	
	<i>Number</i>	<i>Percent</i>	<i>Number</i>	<i>Percent</i>
<b>Hospital Bed Size</b>				
<b>6–24 Beds</b>	2	3.4**	740	12.0**
<b>25–49 Beds</b>	6	10.1**	1,441	23.3**
<b>50–99 Beds</b>	7	11.9	1,236	20.0
<b>100–199 Beds</b>	30	50.9***	1,244	20.1***
<b>200–299 Beds</b>	9	15.3	630	10.2
<b>300–399 Beds</b>	3	5.1	372	6.0
<b>400–499 Beds</b>	2	3.4	206	3.3
<b>500+ Beds</b>	0	0*	311	5.0*
<b>Total Beds</b>	9,072	100	928,680	100
<b>Beds per 1,000 people</b>	2.56	N/A	2.91	N/A

Source: Urban Institute analysis of the AHA 2014 Annual Survey Database.

Notes: \*/\*\*/\*\* Estimates statistically differ at the 0.10/0.05/0.01 level.

<sup>1</sup> Excludes Puerto Rico.

The breakdown of hospitals by their primary focus is similar in Puerto Rico and the mainland U.S. AHA survey data show that about three-quarters of all hospitals in Puerto Rico and the mainland are general medical/surgical hospitals. The remainder consists of a variety of specialty hospitals, including psychiatric, cancer, and children's hospitals. (Table 3).



TABLE 3

**Type of Hospital, Puerto Rico versus the United States, 2014**

	Puerto Rico		United States <sup>1</sup>	
	Number	Percent	Number	Percent
<b>Type of Hospital</b>				
<b>General Medical/Surgical</b>	45	76.3	4648	75.2
<b>All Other</b>	14	23.7	1532	24.8
<i>Psychiatric</i>	5	8.5	489	7.9
<i>Cancer</i>	2	3.4***	16	0.3***
<i>Rehab</i>	2	3.4	247	4.0
<i>Chronic Disease</i>	1	1.7***	2	0.0***
<i>Other Specialty</i>	2	3.4***	27	0.4***
<i>Children's</i>				
<i>General/Medical</i>	2	3.4*	60	1.0*

Source: Urban Institute analysis of the AHA 2014 Annual Survey Database.

Notes: \*\*\*/\*\*\* Estimates statistically differ at the 0.10/0.05/0.01 level.

<sup>1</sup> Excludes Puerto Rico.

Another major difference between hospitals in Puerto Rico and the mainland U.S. is the extent of their affiliation with a system. Puerto Rico hospitals tend to be more decentralized than those in the mainland. About 79.7 percent of Puerto Rico hospitals are not part of a larger organization. In comparison, 36.5 percent of U.S. hospitals fall into this category (Table 4).

TABLE 4

**Hospital System Status, Puerto Rico versus the United States, 2014**

	Puerto Rico		United States <sup>1</sup>	
	Number	Percent	Number	Percent
<b>System Status</b>				
<b>Not part of a system</b>	47	79.7***	2,256	36.5***
<b>Part of a system</b>	12	20.3***	3924	63.5***

Source: Urban Institute analysis of the AHA 2014 Annual Survey Database.

Notes: \*\*\*/\*\*\* Estimates statistically differ at the 0.10/0.05/0.01 level.

<sup>1</sup> Excludes Puerto Rico.

Considerable variation in hospital and bed capacity exists across the Commonwealth's seven DS health care regions. Puerto Rico's most populous region, the San Juan metro area, has the largest share of the Commonwealth's hospitals (33.9 percent) and hospital beds (39.7 percent). The San Juan metro area has the second-lowest ratio of hospitals to residents (one hospital for every 42,455 inhabitants) and the highest rate of hospital beds per 1,000 residents (4.2). In contrast, the Bayamón region, just outside of the San Juan metro area, has a hospital-to-resident ratio of one for every 150,415 inhabitants and 1.3 hospital beds per 1,000 residents (Table 5). In the

mainland U.S., the rate of residents per hospital is 55,760, and the rate of the beds per 1,000 residents is 2.9.<sup>26</sup>

TABLE 5

**Puerto Rico Hospitals, by DS Region, 2014**

DS Region	Hospitals		Residents per Hospital	Hospital Beds		Beds per 1,000 Residents	Population
	Number	Percent		Number of beds	Beds, % of total		
<b>Arecibo</b>	7	11.9	64,134	935	10.3	2.1	448,935
<b>Bayamón</b>	4	6.8	150,415	797	8.8	1.3	601,660
<b>Caguas</b>	8	13.6	73,443	1228	13.5	2.1	587,547
<b>Fajardo</b>	3	5.1	26,399	329	3.6	4.2	79,197
<b>Mayagüez/ Aguadilla</b>	8	13.6	65,184	947	10.4	1.8	521,474
<b>Ponce</b>	9	15.3	60,968	1236	13.6	2.3	548,712
<b>San Juan Metro</b>	20	33.9	42,455	3600	39.7	4.2	849,106

**Sources:** Urban Institute analysis of the AHA 2014 Annual Survey Database.

Departamento de Salud. 2016. Regionales de Salud y Servicios Directos. Retrieved September 30, 2016, from

<http://www.salud.gov.pr/Pages/Regiones-de-Salud-y-Servicios-Directos.aspx>

US Census Bureau. 2014. Age and Sex: 2010-2014 American Community Survey 5-Year Estimates.

<http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>.

According to the American College of Emergency Physicians' 2014 America's Emergency Care Environment State-by-State Report Card, Puerto Rico had only 70.1 intensive care unit beds per 1 million people, compared with 290.6 beds per 1 million people in the mainland U.S. Puerto Rico also does not have any burn unit beds in its hospitals. The report notes, "What few data are available ... provide evidence of a limited infrastructure for responding quickly and effectively in the event of a disaster or mass casualty event."<sup>27</sup>

Puerto Rico does not have a long-term care sector similar to the mainland U.S. Care for seniors generally is provided by family members, family-financed home-based caregivers, private senior care entities (some of which specialize in dementia care), and through Commonwealth licensed "homes for seniors."

**Health Centers.** HRSA provides more than \$91.2 million in competitive awards to support 20 health centers in Puerto Rico that operate at 85 sites in the Commonwealth (Figure 4). In 2015, these sites served 346,702 patients with the following characteristics:

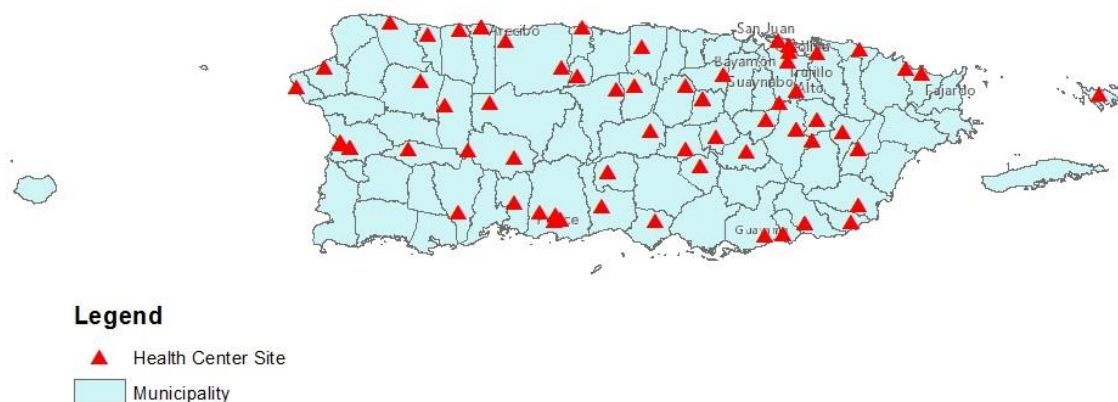
- 29.6 percent were children (under the age of 18)
- 96.9 percent of all patients were at/below 200 percent of the federal poverty level
- 68 percent had Medicaid or CHIP
- 10 percent had private insurance
- 9 percent had Medicare



Based on 2015 health center grantee data, approximately 10 percent of the population in Puerto Rico receives care from health centers versus 7.5 percent in the 50 states plus D.C. However, the health centers in Puerto Rico have a higher percentage of medical care visits and a much lower percentage of dental care visits than do those in the 50 states plus D.C, although it is unclear which Puerto Rico health centers offer dental services. Anecdotally, HRSA staff have heard that in many areas, health centers are the only locally accessible primary care providers and often the largest employer in the communities they serve.

FIGURE 4

### Health Center Site Locations



Source: ASPE analysis of UDS Mapper data, 2015

*Workforce.* In 2014, Puerto Rico experienced a net loss of 16,670 people with postsecondary education, including an estimated 2,132 health professionals.<sup>28</sup> HRSA has deemed 72 of Puerto Rico's 78 municipalities as medically underserved areas and has identified 32 primary care health provider shortage areas.

According to the Association of American Medical Colleges (AAMC), Puerto Rico had 8,195 active physicians who engaged in patient care in 2014 (230.9 physicians per 100,000 inhabitants). Primary care physicians made up about 44 percent of that total, and general surgeons 2 percent. Puerto Rico's supply of physicians and general surgeons closely parallels that of the mainland U.S., but Puerto Rico has more primary care physicians per 100,000 inhabitants (Table 6).<sup>29,30</sup>

TABLE 6

**Active Direct Care Physicians in Puerto Rico, by Type, 2012 and 2014**

Physician Type	Number of Physicians in Puerto Rico		Rate of Physicians per 100,000 Inhabitants in Puerto Rico		Rate of Physicians per 100,000 Inhabitants in the United States	
	2012	2014	2012	2014	2012	2014
<b>Total Physicians</b>	8,310	8,195	226.6	230.9	225.6	234.7
<b>Primary Care Physicians</b>	3,643	3,580	99.3	100.9	80.7	82.5
<b>General Surgeons</b>	N/A	232	N/A	6.5	N/A	6.9

Source: AAMC 2013, 2015.

The American College of Emergency Physicians' *2014 America's Emergency Care Environment, State-by-State Report Card* noted that Puerto Rico has less than half the number of emergency physicians; neurosurgeons; orthopedists and hand surgeons; plastic surgeons; and ear, nose, and throat specialists than the mainland U.S. as a share of the population.<sup>31</sup> According to another report, Puerto Rico has only one pediatric anesthesiologist, two pediatric allergists, six hand surgeons, and eight colorectal surgeons.<sup>32</sup> There also are reportedly only 90 obstetricians/gynecologists, resulting in an estimated a ratio of 400 births per obstetrician each year, or one birth per doctor per day. The same report found that in 2005, 1,485 pediatricians were registered as part of the workforce, whereas in 2014 only 812 were actively practicing.

*Migration of Physicians.* HHS agencies that work in Puerto Rico, news reports, and anecdotes universally cite the declining supply of physicians as a primary concern. Table 7 lists estimates of the outmigration of physicians reported by various publications; note, however, that based on the AAMC data in Table 6, the number of physicians (both primary care and specialty) actually appears to have increased as a share of the population between 2012 and 2014. If both these data and reports of physicians leaving Puerto Rico are accurate, the discrepancy is likely due to a faster decrease in the overall population than that of physicians. However, we do not have more recent data from the AAMC to assess whether the trend shown in Table 6 has continued in more recent years.

TABLE 7

**Net Loss in Health Care professionals**

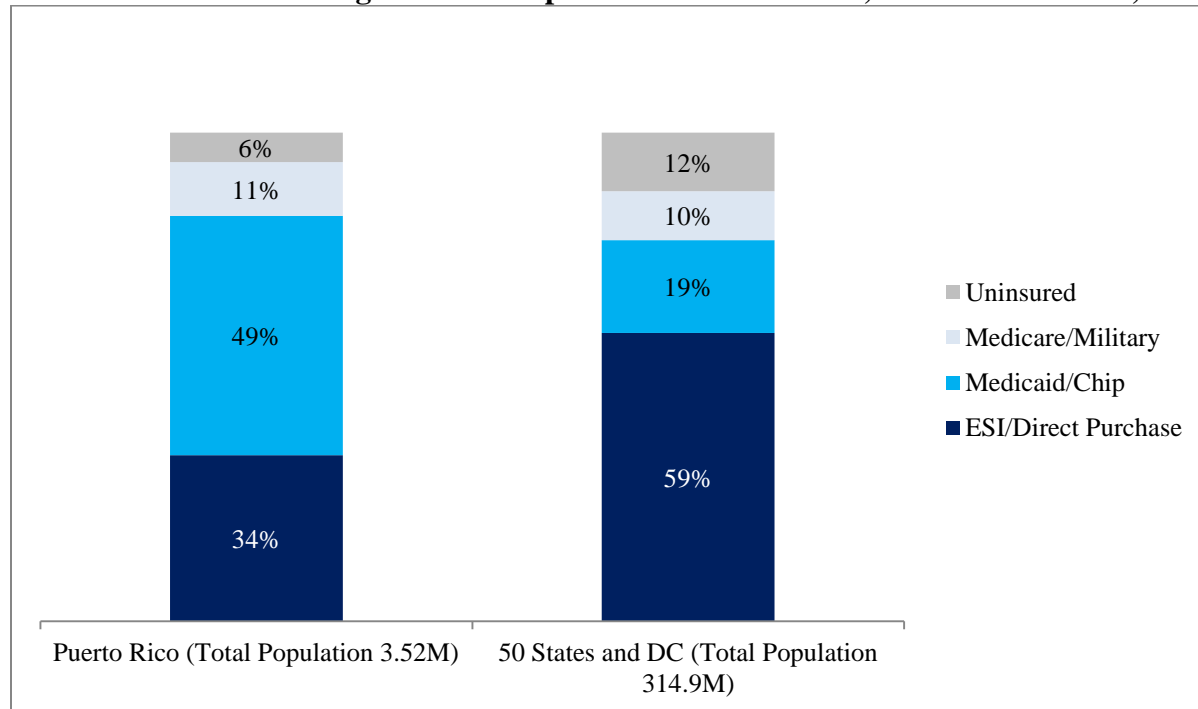
Time Period	Reports of Health Care Professional Migration (Sources do not necessarily use a consistent definition of "health care professional")
<b>2007–2010</b>	<ul style="list-style-type: none"> <li>Net loss of 204 health care professionals (1 percent of health practitioners and technical occupations)<sup>33</sup></li> </ul>
<b>2010–2012</b>	<ul style="list-style-type: none"> <li>More than 4,000 health professionals, or about 9 percent of health care practitioners and those in technical occupations, migrated to the U.S. mainland<sup>34</sup></li> </ul>
<b>2014</b>	<ul style="list-style-type: none"> <li>AAMC estimates that 361 physicians moved from Puerto Rico</li> <li>A net loss of 2,132 health care professionals, or 4 percent of health care practitioners and those in technical occupations<sup>35</sup></li> </ul>
<b>2015</b>	<ul style="list-style-type: none"> <li>Colegio de Médicos-Cirujanos de Puerto Rico (Puerto Rico College of Physicians) data show 500 physicians left Puerto Rico<sup>36</sup></li> </ul>

## Health Insurance Coverage

Most of Puerto Rico's residents have some form of health insurance—about 94 percent in 2014, compared with 88 percent on the U.S. mainland (Figure 5). Almost two-thirds of Puerto Rico's population had public coverage in 2014, which is significantly higher than the public coverage rate on the U.S. mainland (29 percent). Puerto Rico's high Medicaid coverage drove most of this difference, with 49 percent of the Commonwealth population covered by Medicaid or CHIP; only 19 percent of the U.S. mainland received Medicaid or CHIP coverage in the same year. As of September 2016, there were more than 1.5 million people enrolled in Medicaid or CHIP and 740,000 people covered by Medicare.<sup>iv</sup>

FIGURE 5

### Health Insurance Coverage of Total Population in Puerto Rico, 50 States and D.C., 2014



**Source:** Kaiser Family Foundation analysis, based on the Census Bureau's 2014 American Community Survey one-year estimates, retrieved from <http://files.kff.org/attachment/Fact-Sheet-8-Questions-and-Answers-about-Puerto-Rico>. Note: the underlying data do not allow Medicare and Military categories to be separated.

*Medicaid and CHIP.* Puerto Rico generally has lower eligibility levels for its Medicaid program compared to the U.S. mainland. First, Puerto Rico does not provide Medicaid coverage to all federally mandated populations.<sup>37</sup> Second, Puerto Rico uses a local poverty level to establish income-based eligibility for Medicaid (\$413.53 per month for an individual). Puerto Rico provides coverage to individuals with modified adjusted gross incomes up to 133 percent of the Puerto Rico Poverty Level (PRPL) for Medicaid and 266 percent of PRPL for CHIP. In 2016 for Medicaid, this is \$850 per month for a family of four, or approximately 56 percent of FPL. Table 8 shows, by family size, the monthly income at which people in Puerto Rico qualify for

<sup>iv</sup> Slightly more than 166,000 people are enrolled in both Medicare and Medicaid.

Medicaid and CHIP. Figure 6 compares 133 percent of the PRPL with the same income level in the mainland U.S.

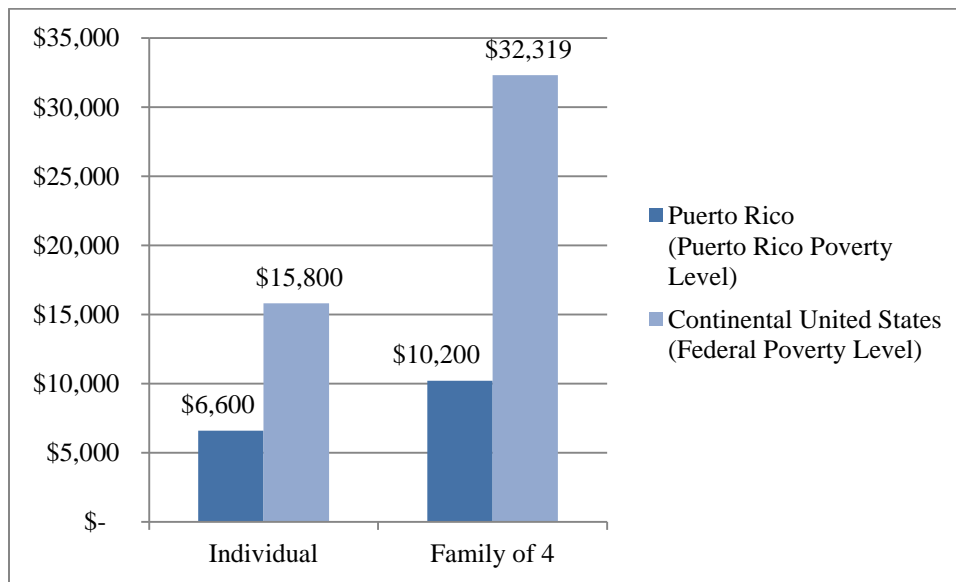
Puerto Rico’s CHIP program covers children up to age 19 with family income of up to 266 percent of the PRPL. Puerto Rico’s Medicaid program currently pays an amount per member per month (PMPM) to managed care organizations (MCOs) that is the same for all eligible and enrolled persons in Medicaid or CHIP.

**TABLE 8**  
**Puerto Rico Poverty Level, by Family Size**

Family Size	Medicaid Eligibility Monthly Income	CHIP Eligibility Monthly Income
1	\$550	\$1,100
2	\$650	\$1,300
3	\$750	\$1,500
4	\$850	\$1,700

Source: CMS Medicaid and CHIP Monthly Income Eligibility Levels. Retrieved from [www.medicaid.gov/Medicaid/by-state/Puerto-rico.html](http://www.medicaid.gov/Medicaid/by-state/Puerto-rico.html)

**FIGURE 6**  
**Annual Income equivalent to 133 Percent of Poverty in Puerto Rico and the Continental United States for an Individual and Family of Four**



Source: CMS Medicaid and CHIP Monthly Income Eligibility Levels. Retrieved from [www.medicaid.gov/Medicaid/by-state/Puerto-rico.html](http://www.medicaid.gov/Medicaid/by-state/Puerto-rico.html)

Because Puerto Ricans are U.S. citizens, they would be eligible for Medicaid in the states to which they move if they otherwise qualify based on that state's eligibility requirements, as would be true for any low-income U.S. citizen moving between two states.

Federal funding for Puerto Rico's Medicaid program differs from that of the U.S. mainland in two significant ways. First, Puerto Rico's federal Medicaid match rate for medical assistance (Federal Medical Assistance Percentage, or FMAP) is a fixed rate of 55 percent set by statute. For state Medicaid programs, a statutory formula determines a state’s FMAP, which can range between a minimum FMAP of 50 percent and a maximum FMAP of 83 percent. If calculated by

the same statutory formula used for the 50 states and D.C., Puerto Rico’s FMAP would be 83 percent, although the unbounded FMAP would be 93.34 percent.

Second, federal funding for Puerto Rico's Medicaid program is capped. For federal fiscal year (FFY) 2014, the federal Medicaid cap was \$321.3 million, FFY 2015 was \$329 million, FFY 2016 was \$335.3, and FFY 2017 is \$347.4 million. Unlike the 50 states and D.C., where the federal government will match all Medicaid expenditures at the appropriate Federal Medical Assistance Percentage (FMAP) for that state, in Puerto Rico, the FMAP is applied until the Medicaid ceiling funds and the Affordable Care Act available funds are exhausted. Due to these federal funding constraints, Puerto Rico has placed limits on certain services typically provided under Medicaid.<sup>38</sup>

The Affordable Care Act (ACA), in addition to raising Puerto Rico’s FMAP, provided two additional sources of new funding for its Medicaid program. First, the ACA gave Puerto Rico an additional \$5.4 billion in federal Medicaid funding, to be spent between 2011 and 2019. Second, Puerto Rico received \$925 million in lieu of funds the Commonwealth would have received to provide private insurance subsidies through a health insurance Marketplace, but these funds can be accessed only after the \$5.4 billion is spent and are available only through Calendar Year 2019. Puerto Rico is projected to spend both the \$5.4 billion and the \$925 million as early as by the end of the first quarter of FY 2018. HHS analysis estimates that nearly 900,000 people in Puerto Rico could lose their health insurance when that funding expires.

In FY 2015, Puerto Rico provided coverage for 10 of the Medicaid program’s 17 federally mandated benefits. Table 9 below shows which services are covered by Puerto Rico’s Medicaid program.

TABLE 9

**Services Covered by Medicaid in Puerto Rico**

	<b>Covered by Puerto Rico’s Medicaid Program*</b>	<b>Not Covered by Puerto Rico’s Medicaid Program</b>
<b>Mandatory Services</b>	<ul style="list-style-type: none"> <li>• Early and periodic screening, diagnostic, and treatment (EPSDT) services</li> <li>• Inpatient hospital services</li> <li>• Laboratory and x-ray services</li> <li>• Medical or surgical services provided by a dentist</li> <li>• Outpatient hospital services</li> <li>• Physician services</li> <li>• Tobacco cessation for pregnant women</li> <li>• Family planning services</li> <li>• Federally qualified health center services</li> <li>• Rural health clinic services</li> </ul>	<ul style="list-style-type: none"> <li>• Home health services for those entitled to nursing facility services</li> <li>• Non-emergency transportation to medical care</li> <li>• Certified pediatric and family nurse practitioner services</li> <li>• Nurse midwife services</li> <li>• Nursing facility (long-term care) services for those over age 21</li> <li>• Emergency services for certain legalized aliens and undocumented aliens</li> <li>• Freestanding birth center services</li> </ul>
<b>Optional Services</b>	<ul style="list-style-type: none"> <li>• Clinic services</li> <li>• Dental services</li> <li>• Eyeglasses and prosthetics</li> <li>• Outpatient prescription drugs</li> <li>• Physical therapy and related services</li> <li>• Diagnostic, screening, preventive, and rehabilitative services;</li> <li>• Inpatient psychiatric hospital services for those under age 21</li> <li>• Inpatient hospital services for those 65 or older in an institution for mental diseases</li> </ul>	<ul style="list-style-type: none"> <li>• Hospice care</li> <li>• Private duty nursing services</li> <li>• Intermediate care facility for individuals with intellectual disabilities</li> <li>• Personal care services</li> <li>• Targeted case management services</li> <li>• Nursing facility services for those 65 and older in an institution for mental diseases</li> </ul>

\*Medicaid coverage of a service does not necessarily mean that access to that service is adequate.

*Medicare.* Puerto Ricans pay the same Medicare payroll taxes as citizens on the U.S. mainland, but spending per Puerto Rican enrollee is lower than that for any state.<sup>39</sup> Puerto Rico's per capita Medicare spending is \$5,230—significantly less than the national average of \$9,501.<sup>40</sup>

The most significant difference between the designs of Medicare Part B in Puerto Rico and on the U.S. mainland is the approach to enrollment. In Puerto Rico, Medicare beneficiaries must opt in to Part B. On the U.S. mainland, Medicare automatically enrolls beneficiaries in Part B, who can then opt out of this program. If Medicare beneficiaries do not enroll in Part B at the time of initial eligibility, they are subject to penalties if they ultimately enroll at a later date. Since Puerto Rican residents have to actively opt into Part B, they are more likely to enroll in Part B late and incur penalties. Residents currently incur more than \$7 million per year in late enrollment penalties, and a greater proportion of Puerto Rican Medicare beneficiaries are covered by Part A but not Part B than on the U.S. mainland (18 percent versus 8 percent in 2012).<sup>41</sup> Puerto Rico does not have a program to help low-income Medicare beneficiaries pay their Part B premiums (known as the Medicare Savings Program) for individuals who are not eligible for other Medicaid benefits. Thus, if automatic enrollment were to be implemented in Puerto Rico, many low-income residents of Puerto Rico would likely still opt out of Part B due to not being able to afford the premiums.

The overwhelming majority of Puerto Ricans enrolled in Medicare (more than 70 percent) elect to receive Medicare benefits through Medicare Advantage, which delivers Medicare benefits through private managed care plans. In contrast, only about 30 percent of U.S. mainland beneficiaries enroll in these plans. Medicare Advantage plans in Puerto Rico, as on the U.S. mainland, often subsidize Medicare's Part B premium and have lower cost-sharing than does traditional Medicare, which has made these plans particularly attractive to low-income Puerto Rican Medicare beneficiaries.<sup>42</sup>

The current methodology for setting provider payments under Medicare Part A is largely the same for acute care hospitals in Puerto Rico and on the U.S. mainland. Differences between the two payment methodologies include adjustments for low-volume hospitals, sole community hospitals, and Medicare-dependent hospitals, as well as adjustments for quality programs (e.g., the Hospital-Acquired Condition Reduction Program, the Hospital Readmissions Reduction Program, and the Hospital Value-Based Purchasing Program)—none of which are available to Puerto Rico hospitals. Like hospitals located on the U.S. mainland, Puerto Rico hospitals receive graduate medical education payments and disproportionate share payments under Medicare. However, Puerto Rican residents are ineligible for Supplemental Security Income (SSI), which is used to calculate the Medicare disproportionate share payment.

Medicare inpatient payment rates are adjusted by an area wage index to reflect the expected differences in local market prices for labor. The wage index is applied to the labor-related portion of the base rate (usually called the “labor share”), which reflects an estimate of the portion of costs affected by local wage rates and fringe benefits. The Centers for Medicare & Medicaid Services (CMS) current operating labor share estimate of 69.6 percent is applied to hospitals with a wage index above 1.0. Hospitals located in areas with a wage index less than or equal to 1.0 can receive an operating labor share of 62 percent; this provision applies to Puerto Rico, as there are no areas in the Commonwealth with a national wage index greater than 1.0 for FY 2017.



In the calendar year 2017 Medicare physician fee schedule final rule, CMS aligned Puerto Rico's geographic practice cost index methodology with those of the U.S. Virgin Islands by setting Puerto Rico's GPCI using the national average. Puerto Rico had been the only territory whose geographic adjustment was based on available territory-specific data, which historically led to significantly lower Medicare Physician Fee Schedule payments in Puerto Rico than all other territories.

The issues described above related to traditional Medicare payment rates in Puerto Rico and payment reductions included in the ACA contribute to the differential spending in Puerto Rico as compared to the U.S. mainland as well as lower MA rates in Puerto Rico. However, CMS announced that in 2017 it will implement several changes to the 2017 Rate Announcement which will benefit Medicare Advantage enrollees in Puerto Rico, such as adjusting risk scores to reflect the higher costs of individuals enrolled in both Medicare and Medicaid, incorporating increased hospital payments, and adjusting the fee-for-service experience to reflect the propensity of zero dollar claimants nationwide, rather than the propensity of zero dollar claimants solely in Puerto Rico. CMS will also adjust the Star Rating system for quality bonus payments to account for enrollees' socioeconomic status and ineligibility for the low-income subsidy program; these changes are expected to modestly increase payments to Medicare Advantage plans operating in Puerto Rico.<sup>43</sup>

While the Medicare Part D program generally functions similarly in Puerto Rico and on the U.S. mainland, one exception is the low-income subsidies program, which is available only on the U.S. mainland. In its place, the Medicare Modernization Act provided funds for an Enhanced Allotment Plan to cover prescription drugs for people dually eligible for Medicare and Medicaid.

*Private Insurance.* Private insurance, which includes employer-sponsored coverage and individual market coverage, is less common in Puerto Rico than on the U.S. mainland. Approximately 34 percent of Puerto Rican residents had employer-sponsored coverage or direct-purchase health insurance in 2014, compared to 59 percent on the U.S. mainland.<sup>44</sup>

### Access and Service Use

Puerto Rican adults experience better access to care than those on the U.S. mainland in certain domains after controlling for economic and demographic factors, including race/ethnicity, age, sex, household income, educational attainment, urban/rural residence, marital status, and employment. At the same time, some evidence suggests lack of access to some services.

HHS agencies working in and with the Commonwealth observe patients needing to travel great distances to access services. For example, HRSA reports, "The availability and accessibility of more tertiary-level services such as audiology, ophthalmology, orthopedics, and gastroenterology varies greatly by region. The only regional pediatric center (RPC) that offers tertiary-level care and specialty services such as Neurosurgery, Plastic Surgery, ear, nose, and throat, Neural Tube Defects, and Craniofacial Anomalies, is the Metropolitan RPC in San Juan, placing challenges on children and families in other areas of Puerto Rico that require more specialty care." The Assistant Secretary for Preparedness and Response notes that there is only one trauma center in Puerto Rico. Its San Juan location means that residents on the western side of the island must

travel approximately 120 miles to receive specialized trauma care. HHS also has received reports of patients traveling for more than two hours to get treatment.

Agencies across HHS also report long wait times for visits and procedures. Moreover, the American College of Emergency Physicians' 2014 America's Emergency Care Environment State-by-State Report Card cites "excessively long" wait times in emergency departments. It reports a median wait time of 778 minutes (almost 13 hours) from emergency department arrival to departure, meaning that patients can expect to wait 13 hours to be admitted into a hospital room.<sup>45</sup> This is compared to 272 minutes (4.5 hours) on average in the U.S. and 452 minutes (7.5 hours) in D.C., the lowest-performing in the mainland U.S.<sup>46</sup> In 2015, ASES executive director Ricardo Rivera indicated that specialty services have exceptionally long wait times—as many as nine months for some specialties.<sup>47</sup>

Despite these challenges with access to care, Puerto Rico residents also were more likely to have a usual source of care and a check-up within the past year and less likely to have experienced cost-related delays, compared to their counterparts on the U.S. mainland.<sup>48</sup> An HHS analysis found that Puerto Ricans were less likely to refrain from seeing a doctor because of cost in the past year but were more likely to refrain from taking medication due to cost, compared to the mainland U.S.

*Specific Services and Screenings.* As shown in Table 10, data from the Behavioral Risk Factor Surveillance System (BRFSS) comparing Puerto Rico to the rest of the U.S. show that Americans in Puerto Rico are less likely to receive colorectal cancer screenings and Pap smears.

TABLE 10

**Select Preventive Service Rates in Puerto Rico and 50 States plus D.C., 2014**

	Puerto Rico		U.S.	
	Total	Percent	Total	Percent <sup>1</sup>
<b>Respondents ages 50–75 who have fully met the United States Preventive Services Task Force (USPSTF) recommendation for colorectal cancer screening</b>	1,651	52.5	53	66.4
<b>Women ages 21–65 who have had a Pap test in the past three years</b>	1,483	77.4	51	82.6
<b>Women ages 50–74 who have had a mammogram within the past two years</b>	1,520	82.3	51	78.1

Source: BRFSS Prevalence and Trends data. Retrieved from <http://www.cdc.gov/brfss/brfssprevalence/index.html>.

<sup>1</sup>Median of states.

The literature also reveals limited access to prenatal services,<sup>49</sup> dental care,<sup>50</sup> and specialty care.<sup>51</sup> Puerto Rican children and adolescents also disproportionately struggle to obtain medication intended for the long-term control of asthma, a condition common among Commonwealth's youth.<sup>52</sup>

HHS analysis indicates that both HIV infection rates and HIV testing appear to be higher in Puerto Rico than the mainland U.S. Findings from a study on late HIV testing—defined as a

patient being diagnosed with AIDS within a year of his or her HIV diagnosis—indicate that there may be a “gap in early HIV detection in Puerto Rico.” From 2010 to 2011, about half of the patients studied presented for care late, which can result in higher transmission, lower effectiveness of treatment, and worse outcomes. These results are consistent with another study that suggests that gay men in San Juan receive HIV testing less frequently than recommended by the Centers for Disease Control and Prevention (CDC).<sup>53</sup>

The American College of Emergency Physicians’ 2014 America’s Emergency Care Environment State-by-State Report Card discusses treatment of patients with acute myocardial infarction (AMI). Though it found that a high proportion of patients in Puerto Rico (94 percent) receive aspirin within 24 hours before their emergency department arrival or during their stay (compared with 99.1 percent in the mainland U.S.), only 54 percent receive percutaneous coronary intervention within 90 minutes—an increase from 17 percent in 2009, but well below the 93.1 percent of patients that receive this level of care in the mainland U.S.

*Immunization and Vaccination.* Evidence shows that Puerto Rico’s immunization and vaccination rates are low relative to the U.S. mainland. Puerto Rico’s Department of Health notes that in 2014, 56.4 percent of children from 19 to 35 months received all their recommended vaccines, compared with 71.6 percent of children the same age in the mainland U.S.<sup>54</sup>

Influenza and pneumonia immunization rates also are lower. One study found that 25.5 percent of Puerto Rican Medicare beneficiaries received a pneumonia immunization in 2008, whereas the rate for Spanish-preferring Medicare beneficiaries on the U.S. mainland was almost double (47.4 percent).<sup>55</sup> Similarly, influenza immunization rates among Medicare beneficiaries living in Puerto Rico were lower (32.7 percent) than Spanish-preferring and English-preferring Medicare beneficiaries living on the U.S. mainland (67.7 and 73.3 percent, respectively).<sup>56</sup> During the 2013–2014 influenza season, 18 percent of Puerto Ricans reported receiving the influenza vaccination, compared to 46 percent on the U.S. mainland.<sup>57</sup> For the 2014–2015 season, the Puerto Rico Department of Health reported that 15 percent of the elderly population received the flu shot.<sup>58</sup> Moreover, an HHS analysis of federal data found that the Puerto Rico population receiving a flu shot in the past year was 12 percent lower than the mainland U.S. population.

An Urban Institute analysis of BRFSS data found that the 2014 influenza vaccination rate among adults in Puerto Rico was also lower than that of adults in Florida and Mississippi or the rest of the U.S. mainland (Table 11). Similarly, the American College of Emergency Physicians’ 2014 America’s Emergency Care Environment State-by-State Report Card noted declining immunization rates among older adults in Puerto Rico, with only 28.6 percent of the elderly reporting receiving an influenza vaccination in the past year, and fewer than 23 percent reporting ever having received a pneumococcal vaccine.<sup>59</sup>

TABLE 11

### Influenza Vaccination Rate among Adults in Puerto Rico, Florida, Mississippi, and the U.S. Mainland, 2014

	Puerto Rico	Florida	Mississippi	Remainder of U.S. Mainland
Share of adults who have not received a flu vaccine in the last year	74.1%	68.4%***	63.0%***	61.1%***
Share of adults age 65 and older who have not received a flu vaccine in the last year	60.3%	47.2%***	33.4%***	40.2%***

Source: Urban Institute analysis of the 2014 BRFSS Survey database.

Notes: \*/\*\*/\*\* Estimates statistically differ from Puerto Rico at the 0.10/0.05/0.01 level, two-sided test.

One study of human papillomavirus vaccine (HPV) vaccination in Puerto Rico found that only 21 percent of girls ages 11 to 18 had completed a full vaccination series.<sup>60</sup> On the U.S. mainland, in contrast, 63 percent of girls and 50 percent of boys ages 13 to 17 received the HPV vaccination between 2014 and 2015.<sup>61</sup>

*Behavioral Health Services.* There is limited information on availability of behavioral health services in Puerto Rico, but medical services generally are more widely available than behavioral health services. Patients with behavioral health problems often seek care from primary care providers and at non-psychiatric hospitals.<sup>62</sup> Psychological services also are typically not provided in the Commonwealth's general hospitals. An HHS analysis indicates that mental health visits account for a smaller percentage of Puerto Rico health center visits than in health centers on the U.S. mainland.

### Prevalence of Disease

BRFSS data show a higher disease burden for several chronic conditions and associated risk factors. For example, Puerto Ricans are twice as likely to suffer from coronary heart disease as the general U.S. population. Rates of myocardial infarction, asthma, and high blood pressure are also higher in Puerto Rico than on the U.S. mainland.

TABLE 12

### Prevalence of Selected Chronic Diseases and Associated Risk Factors in Puerto Rico versus the 50 States plus DC, 2014

	Puerto Rico		U.S.	
	Total	Percent	Total	Percent <sup>1</sup>
Coronary heart disease	609	8.5	51	4.2
Myocardial infarction	389	5.3	51	4.4
Adults who have been told they have high blood pressure (2013 data)	3,007	42.3	53	31.4
Adults who have been told they currently have asthma	636	10.6	51	8.9
Adults who have ever been told they have asthma	1,031	17.1	51	13.8
Stroke	177	2.2	51	3
Weight classification by Body Mass Index (BMI) Obese (BMI 30.0–99.8)	1,619	28.3	51	29.6
Adults who are current smokers	538	11.3	51	18.1

Source: BRFSS Prevalence and Trends data. Retrieved from <http://www.cdc.gov/brfss/brfssprevalence/index.html>.

<sup>1</sup>Median of states.

In its *2015 Puerto Rico Primary Care Needs Assessment*, the Puerto Rico Department of Health reported the incidence of several conditions compared with the U.S. mainland. The department found that from 2008 to 2012, Puerto Rico had a lower age-adjusted incidence rate for all cancer sites, colon and rectum cancer, and female breast cancer, but higher rates for prostate cancer, HIV, and syphilis. (See Table 13 and Figure 7 below.)<sup>63</sup>

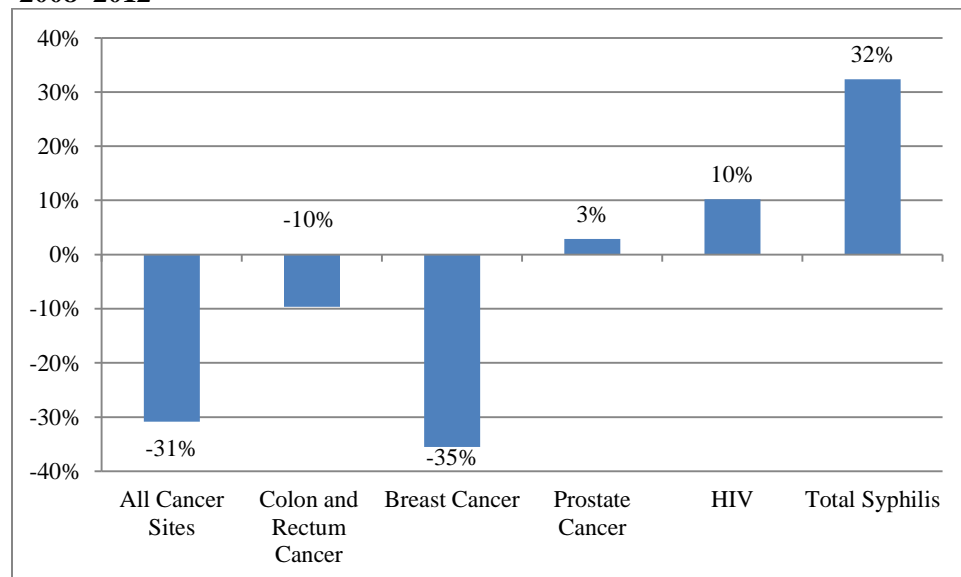
TABLE 13

### Age-Adjusted Incidence Rate (Cases per 100,000 population) of Select Conditions, 2008–2012

	All Cancer Sites	Colon/Rectum Cancer	Breast Cancer	Prostate Cancer	HIV	Total Syphilis
<b>Puerto Rico</b>	314.4	38.4	80.5	141.9	18.4	26.6
<b>United States</b>	454.8	42.5	124.8	137.9	16.7	20.1

Source: *2015 Puerto Rico Primary Care Needs Assessment*. April 2016. Retrieved from <http://www.salud.gov.pr/Estadisticas-Registros-y-Publicaciones/Publicaciones/2015%20Puerto%20Rico%20Primary%20Care%20Needs%20Assesment.pdf>.

FIGURE 7

**Percentage Difference between Puerto Rico and Mainland U.S. Age-Adjusted Incidence Rates, 2008–2012**

Source: 2015 Puerto Rico Primary Care Needs Assessment. April 2016. Retrieved from <http://www.salud.gov.pr/Estadisticas-Registros-y-Publicaciones/Publicaciones/2015%20Puerto%20Rico%20Primary%20Care%20Needs%20Assesment.pdf>.

According to 2013 data, the causes of death in Puerto Rico include cancer, diseases of the heart, diabetes, Alzheimer’s disease, and cerebrovascular diseases (Table 14).<sup>64</sup> In comparison, the top five causes of death in the mainland U.S. were diseases of the heart, cancer, chronic respiratory diseases, unintentional injuries, and cerebrovascular diseases.<sup>65</sup> The second and third most common causes of death in Puerto Rico—diabetes and Alzheimer’s disease—were slightly lower in the U.S. mainland rankings, where they ranked sixth and seventh, respectively, in 2013 (23.9 per 100,000 and 26.8 per 100,000).<sup>66</sup>

TABLE 14

**Top Five Causes of Death in Puerto Rico versus the U.S. Mainland, 2013**

Puerto Rico			U.S. Mainland		
Ranking	Cause of death	Rate per 100,000	Ranking	Cause of death	Rate per 100,000
1	Cancer	144.4	1	Diseases of the heart	193.3
2	Diseases of the heart	140.7	2	Cancer	185.0
3	Diabetes	87.0	3	Chronic respiratory disease	47.2
4	Alzheimer’s disease	50.6	4	Unintentional injuries	41.3
5	Cerebrovascular diseases	37.4	5	Cerebrovascular diseases	40.8

Source: Departamento de Salud and National Vital Statistics Reports, 62(6), December 20, 2013.

Notes: Data on Hispanic origin should be interpreted with caution due to misreporting/underreporting on death certificates.



Due to the aging of Puerto Rico's population, crude death rates for diabetes and Alzheimer's disease have been rising over the past five years. However, adjusted for the changing age distribution in Puerto Rico, death rates for most leading causes of death have fallen.<sup>67</sup>

### Health Indicators

A recent study found that, across 17 quality measures, Hispanic Medicare Advantage enrollees in Puerto Rico had significantly worse performance on 15 of those measures than Hispanic enrollees residing in the mainland U.S.<sup>68</sup> An older study also found that Medicare beneficiaries in Puerto Rico experience lower quality of care than U.S. mainland residents on more than 20 process measures.<sup>69</sup>

Health indicators provide important information in assessing the effectiveness and success of a health system. The best available indications of health outcomes in Puerto Rico are metrics on life expectancy, infant mortality, and self-reported health status. In two of the three, Puerto Rico is worse off than the U.S. mainland. Puerto Rico has a higher infant mortality rate (7.57 per 1,000 in 2015) than the U.S. mainland (5.87 per 1,000 in 2015) and a premature birth rate well above the average for the U.S. mainland (11.8 percent in Puerto Rico versus 9.6 percent in the U.S.).<sup>70</sup> Adults in Puerto Rico report higher rates of fair or poor health (35.4 percent, compared to 17.9 percent in 2014).<sup>71</sup> In 2015, life expectancy was similar for residents of Puerto Rico (79.25 years) and the U.S. mainland (79.68 years).<sup>72</sup>

### Conclusion

The information compiled here suggests distress in the Puerto Rico health care system even before new public health challenges, such as the Zika virus. Though not addressed in this report, the prevalence of the Zika virus in Puerto Rico stands to increase the strain on its health care services and infrastructure. In Puerto Rico, as of December 14, 2016, there were more than 33,000 cases of local Zika transmission.<sup>73</sup> CDC projects that a quarter of the island's population may be infected with Zika in the first year of its presence and already, over 3000 pregnant women have been infected. For a system that has a shortage of obstetrician/gynecologists and developmental pediatricians, and lacks a long-term care service infrastructure, the implications of Zika for affected mothers and babies is of concern. The Zika Response and Preparedness Act (P.L. 114-223), signed on September 28, 2016, authorized \$933 million in appropriations to HHS to prevent, prepare for, and respond to the Zika virus in Puerto Rico, other U.S. territories, and the U.S. mainland.

Available evidence clearly indicates a shortage of specialists, and anecdotal evidence suggests a significant emigration of health care professionals to the U.S. mainland. Although the vast majority of citizens in Puerto Rico have health insurance, the imminent exhaustion of additional federal funding threatens that safety net, with nearly 900,000 people potentially losing coverage. Even those with health insurance must travel great distances and experience long wait times to access care. Moreover, Puerto Rico is underperforming in some important services, such as cancer screening and immunizations. Perhaps as a result, the rate of adults in fair to poor health is twice as high in Puerto Rico than in the mainland U.S. The evidence also shows that there are areas where the system seems to be adequate, and life expectancy rates are about the same as in the mainland U.S.

Timely data are difficult to obtain, and additional studies certainly would aid in better understanding the implications of Puerto Rico's health system for the health and well-being of the American citizens living there. Nevertheless, this report synthesizes available information about the health care delivery system on which these 3.5 million Americans depend. The evidence presented here suggests real challenges. From an enduring economic crisis to underlying statutory disparities, Puerto Rico faces a combination of unique circumstances that not only hinder improvement but risk further deterioration.

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