Diabetes in Indian Country

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LCDR U.S. Public Health Service

IHS Division of Diabetes Treatment and Prevention

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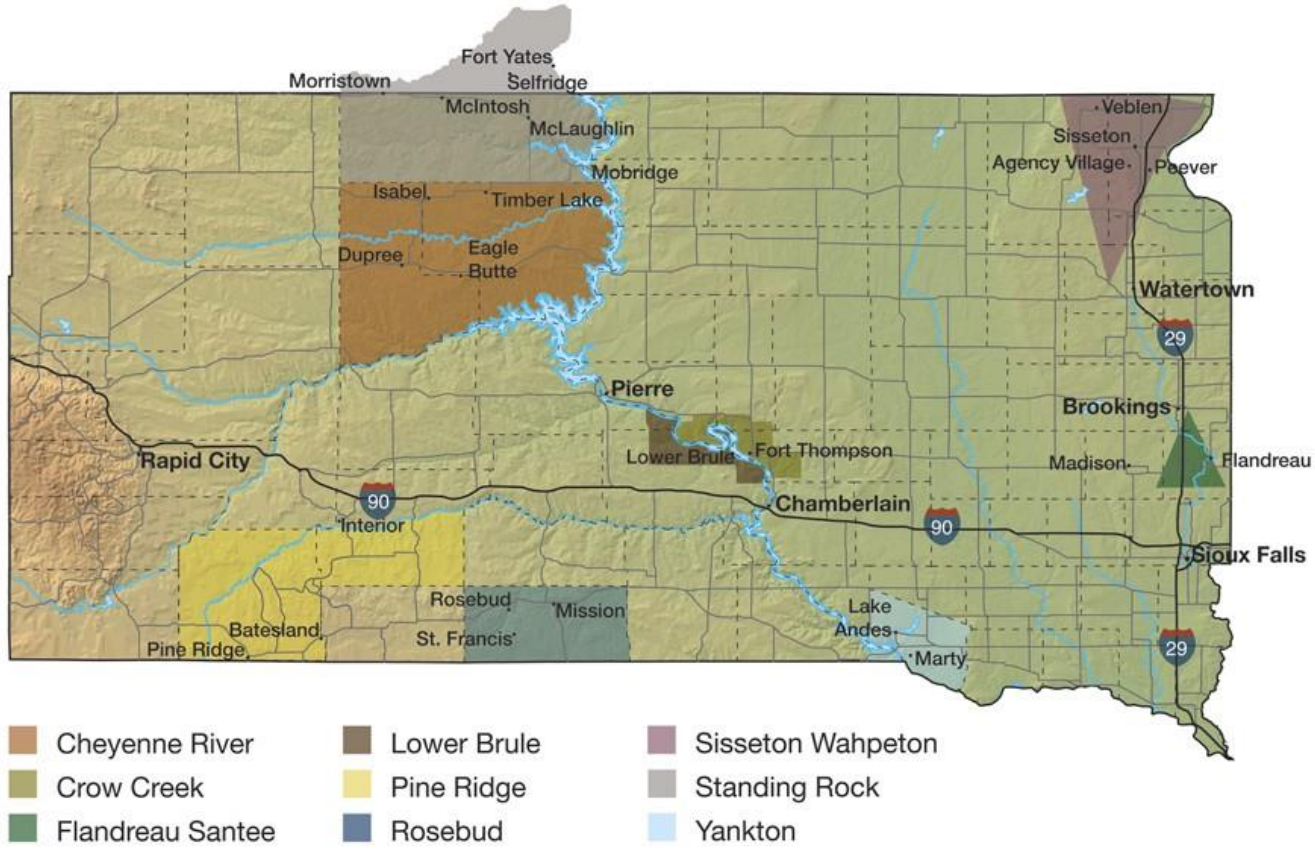
Today's Topics

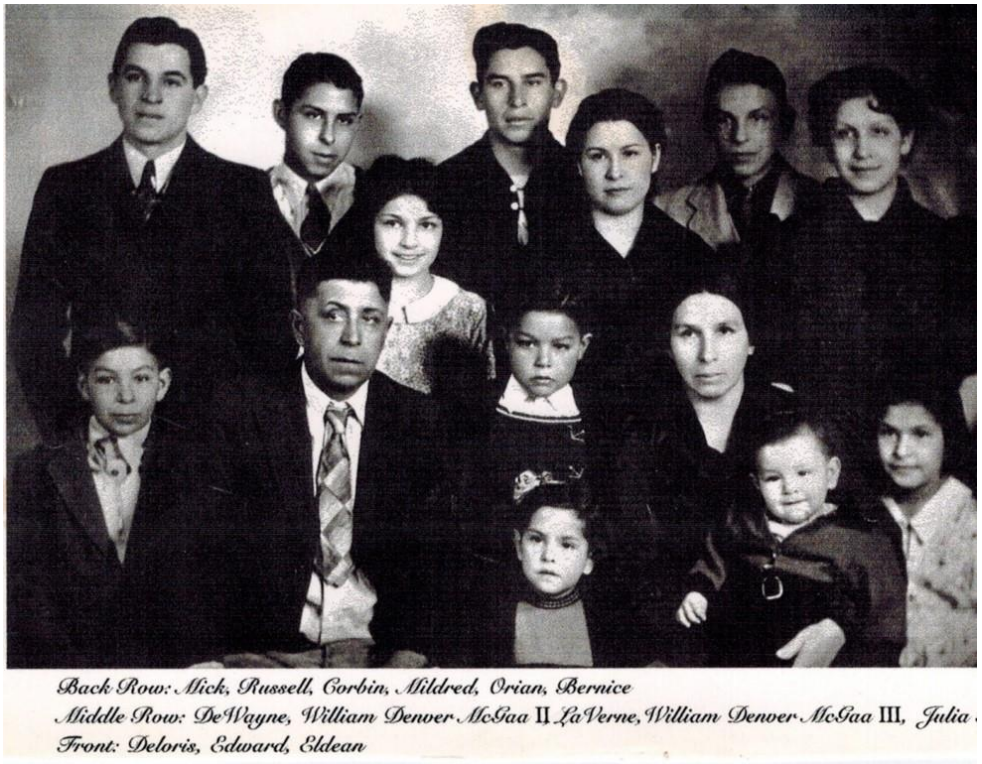
- The Emergence of the Diabetes in Indian Country
- Special Diabetes Program for Indians
- IHS Diabetes Audit 2021 – Outcomes
- IHS Division of Diabetes Resources
- Future Directions – National Clinical Care Commission Report

Learner Objectives

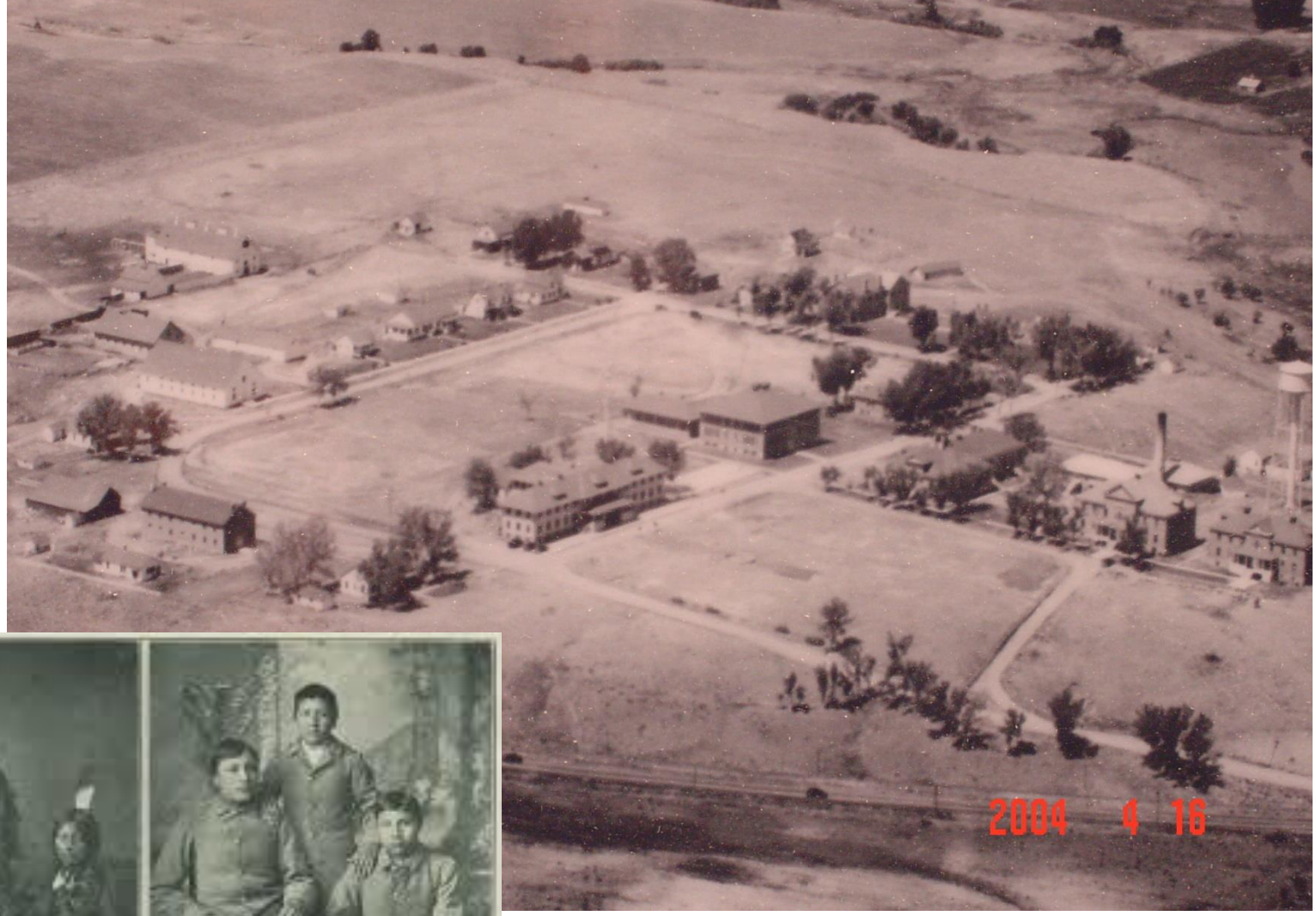
- Learner will gain an understanding of the Special Diabetes Program for Indians (SDPI) and community driven strategies for primary or secondary diabetes prevention commonly used in Indian Country.
- Improvements in diabetes care and outcomes that improve quality of life in American Indians will be shared. Understand basic trends for key indicators: diabetes prevalence, diabetes complications, and other clinical measures.


Fort Yates
Morristown
Selfridge
McIntosh
McLaughlin
Mobridge
Isabel
Timber Lake
Dupree
Eagle Butte
Veblen
Sisseton
Agency Village
Peever
Watertown
29
Pierre
Brookings
Rapid City
Lower Brule
Fort Thompson
Madison
Flandreau
90
Interior
Chamberlain
90
Sioux Falls
Rosebud
Mission
Lake Andes
Bateland
Pine Ridge
St. Francis
Marty
29
Cheyenne River
Crow Creek
Flandreau Santee
Lower Brule
Pine Ridge
Rosebud
Sisseton Wahpeton
Standing Rock
Yankton

Diabetes – One family's story

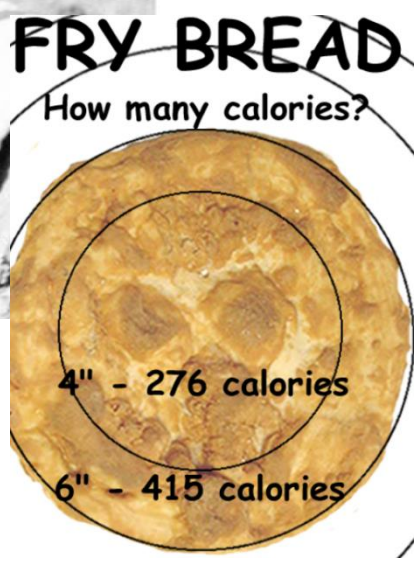


Back Row: Mick, Russell, Corbin, Mildred, Orian, Bernice
Middle Row: DeWayne, William Denver McGaa II, LaVerne, William Denver McGaa III, Julia
Front: Deloris, Edward, Eldean



Rapid City Indian School – 1898-1933

Government Issued Food Rations



Domesticated livestock - Beef, Poultry
Wheat flours + Lard = Fry Bread
Coffee, Sugar

" It is widely recognized that the replacement of Indigenous foods with a diet composed primarily of modern refined foods is the center piece of the diabetes problem."

Kuhnlin, Harriet. "Culture and Ecology in Dietetics and Nutrition" in Journal of the American Dietetic Assoc. 1989, 89 (8) 1059-1060.

Emergence of T2 Diabetes

1950's

" End of the Wagon era" Personal communication with Lakota Elder, Johnson Holy Rock

1960's

"Ring of Red Bologna and a Loaf of White" Personal Communication Arthur Zimiga

1970's

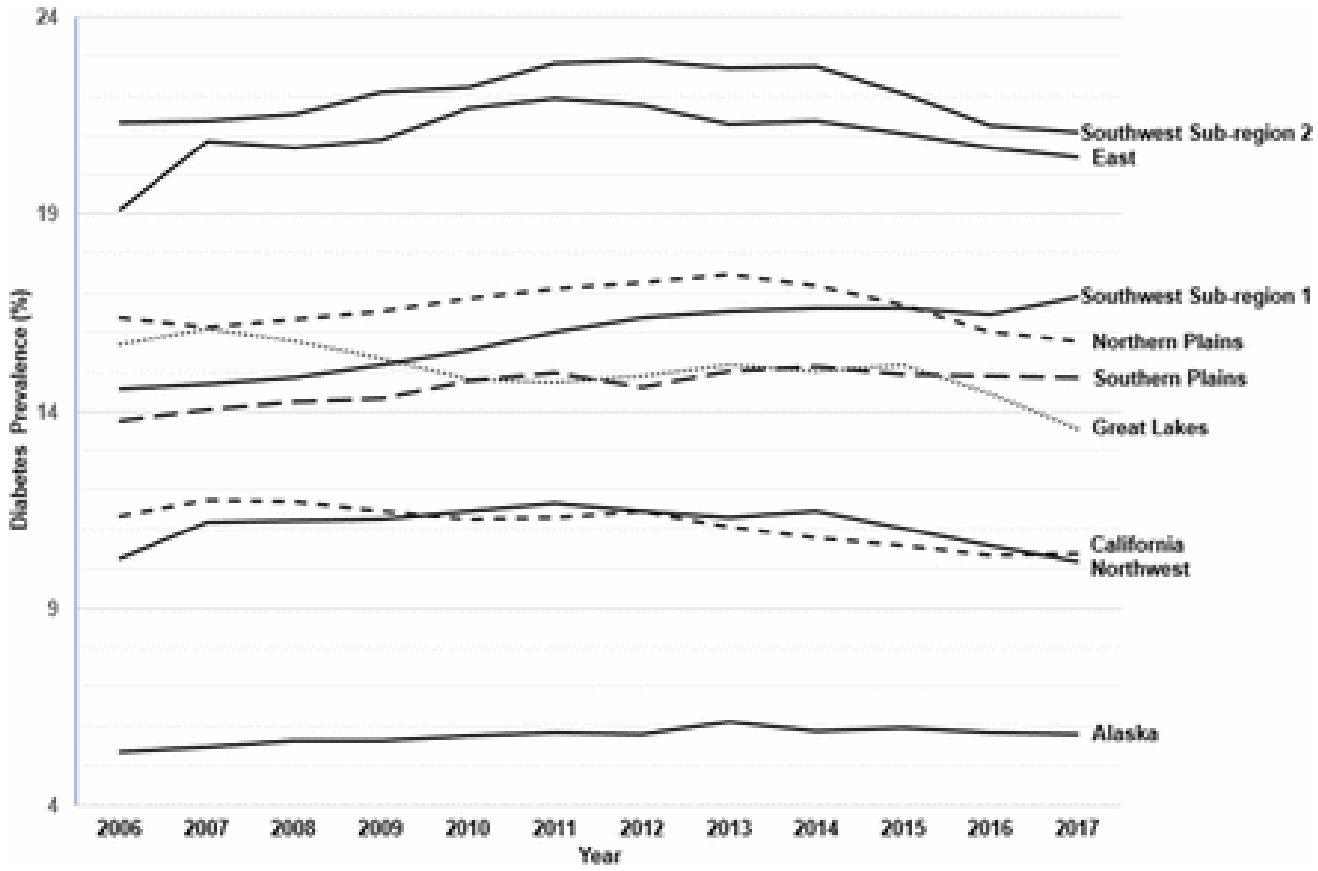
Epidemic of Diabetes emerges in Northern Plains.

1980's

Declared an Epidemic by IHS/CDC

IHS Launches Model Diabetes Programs

Diabetes Prevalence by Region

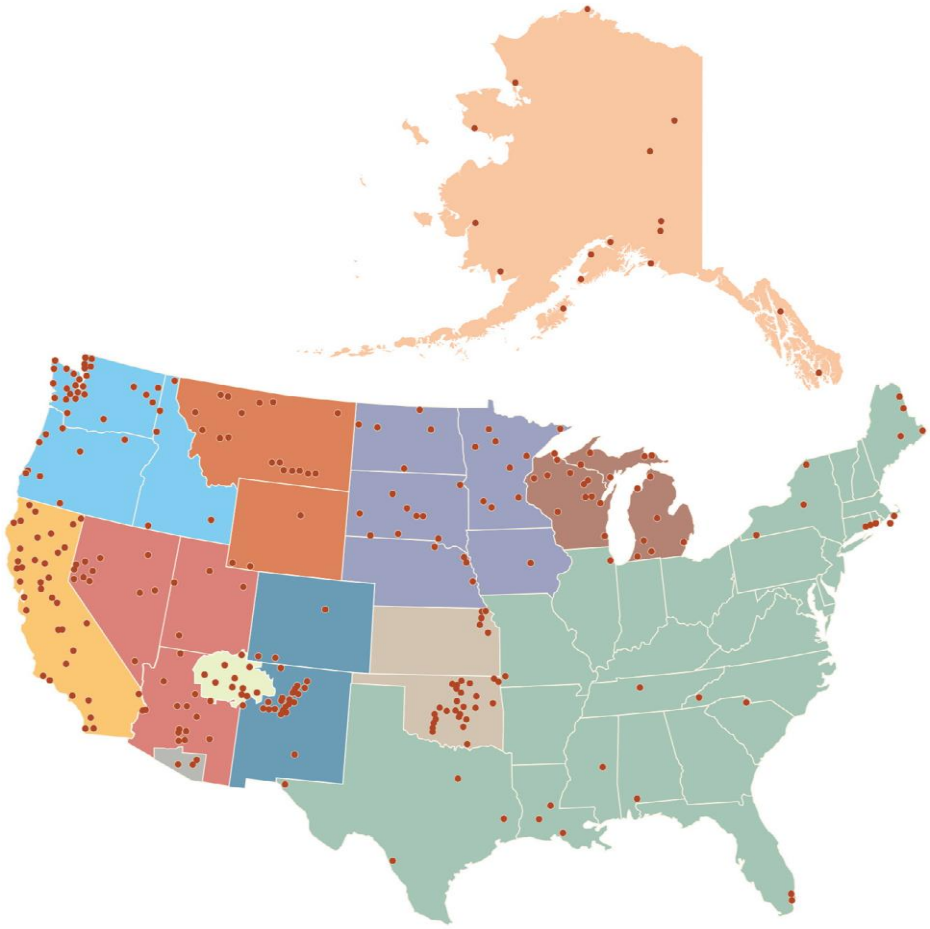


Special Diabetes Program for Indians (SDPI)

Established 1997 by Congress

- $150 million annual grant program
- Led by IHS Division of Diabetes & Tribal Leaders Diabetes Committee
- 301 Community-directed programs focus on evidence-based intervention strategies using the SDPI Diabetes Best Practices.

SDPI Nationally



SDPI in South Dakota

Cheyenne River Sioux Tribe	Eagle Butte	Tribal
Fort Thompson Health Center	Fort Thompson	IHS
Lower Brule Sioux Tribe	Lower Brule	Tribal
Oglala Sioux Tribe	Pine Ridge	Tribal
Rapid City Service Unit	Rapid City	IHS
Rosebud Sioux Tribe	Rosebud	Tribal
Sisseton Wahpeton Oyate	Agency Village	Tribal
South Dakota Urban Indian Health, Inc.	Pierre	Urban
Wagner Service Unit	Wagner	IHS

SDPI
Community–Directed Programs

- **301 community-directed diabetes programs:**
  - Implement diabetes treatment and prevention programs based on scientifically proven Best Practices.
  - Are designed to address local community priorities.
  - Have increased access to services such as
    - diabetes clinics, teams, and registries
    - weight loss programs for adults and youth
    - infrastructure to promote physical activity
    - Experts in nutrition and physical activity

SDPI Diabetes Best Practices

- Aspirin or Other Antiplatelet Therapy in Cardiovascular Disease
- Blood Pressure Control
- Chronic Kidney Disease Screening and Monitoring
- Dental Exam
- Depression Screening
- Diabetes-related Education
- Eye Exam – Retinopathy Screening
- Foot Exam
- Glycemic Control
- Hepatitis C Screening
- Immunizations: Hepatitis B
- Immunizations: Influenza
- Immunizations: Pneumococcal
- Immunizations: Tetanus/Diphtheria
- Lipid Management in Cardiovascular Disease
- Nutrition Education
- Physical Activity Education
- Tobacco Use Screening
- Tuberculosis Screening

Table 1. Increases in Diabetes Services Reported by SDPI Sites

Intervention	Percent of Sites 1997[a]	2019
Diabetes clinical teams	30%	95%
Diabetes patient registries	34%	96%
Nutrition services for adults	39%	94%
Access to registered dietitians	37%	85%
Access to physical activity specialists	8%	84%
Access to culturally tailored diabetes education materials	36%	96%
Adult weight management services	19%	76%
Nutrition services for children and youth	65%	90%
Community-based physical activity services for children and youth	13%	85%
Physical activity for school-age youth	9%	83%

[a]Baseline = before SDPI funding was available
Source: Evaluation of the SDPI, 2019

SDPI - 2020 Report to Congress
https://www.ihs.gov/sdpi/reports-to-congress/

The Diabetes Audit

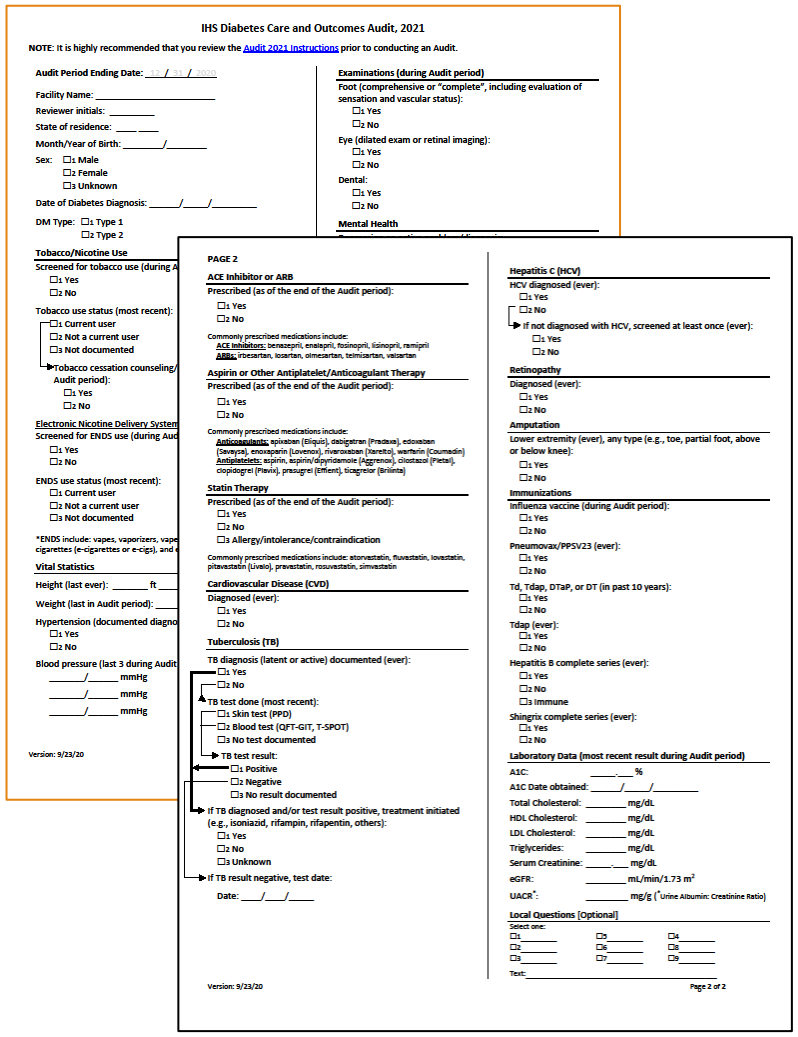
Annual data collection and reporting by IHS, Tribal, and Urban facilities.

A process for assessing diabetes care and health outcomes for AI/AN people with diagnosed diabetes.

To work towards the goal of providing all diabetes patients with the highest quality of care, as outlined by:

IHS Diabetes Standards of Care and Resources for Clinicians and Educators

Audit assesses >40 outcomes, including:



IHS Diabetes Care and Outcomes Audit, 2021

NOTE: It is highly recommended that you review the Audit 2021 Instructions prior to conducting an Audit.

Audit Period Ending Date: 12 / 31 / 2020

Facility Name: _____

Reviewer initials: _____

State of residence: _____

Month/Year of Birth: _____/_____

Sex: ☐1 Male ☐2 Female ☐3 Unknown

Date of Diabetes Diagnosis: _____/____/_____

DM Type: ☐1 Type 1 ☐2 Type 2

Tobacco/Nicotine Use

Screened for tobacco use (during A

☐1 Yes ☐2 No

Tobacco use status (most recent):

☐1 Current user ☐2 Not a current user ☐3 Not documented

Tobacco cessation counseling/ Audit period):

☐1 Yes ☐2 No

Electronic Nicotine Delivery System

Screened for ENDS use (during Aud

☐1 Yes ☐2 No

ENDS use status (most recent):

☐1 Current user ☐2 Not a current user ☐3 Not documented

*ENDS include: vapes, vaporizers, vape cigarettes (e-cigarettes or e-cigs), and

Vital Statistics

Height (last ever): _____ ft

Weight (last in Audit period): _____

Hypertension (documented diagno

☐1 Yes ☐2 No

Blood pressure (last 3 during Audit

_____/_____ mmHg

_____/_____ mmHg

_____/_____ mmHg

Version: 9/23/20

Examinations (during Audit period)

Foot (comprehensive or "complete", including evaluation of sensation and vascular status):

☐1 Yes ☐2 No

Eye (dilated exam or retinal imaging):

☐1 Yes ☐2 No

Dental:

☐1 Yes ☐2 No

Mental Health

PAGE 2

ACE Inhibitor or ARB

Prescribed (as of the end of the Audit period):

☐1 Yes ☐2 No

Commonly prescribed medications include:

ACE Inhibitors: benazepril, enalapril, fosinopril, lisinopril, ramipril

ARBs: irbesartan, losartan, olmesartan, telmisartan, valsartan

Aspirin or Other Antiplatelet/Anticoagulant Therapy

Prescribed (as of the end of the Audit period):

☐1 Yes ☐2 No

Commonly prescribed medications include:

Anticoagulants: apixaban (Eliquis), dabigatran (Pradaxa), edoxaban (Savaysa), enoxaparin (Lovenox), rivaroxaban (Xarelto), warfarin (Coumadin)

Antiplatelets: aspirin, aspirin/dipyridamole (Aggrenox), cilostazol (Pletal), clopidogrel (Plavix), prasugrel (Effient), ticagrelor (Brilinta)

Statin Therapy

Prescribed (as of the end of the Audit period):

☐1 Yes ☐2 No ☐3 Allergy/intolerance/contraindication

Commonly prescribed medications include: atorvastatin, fluvastatin, lovastatin, pitavastatin (Livalo), pravastatin, rosuvastatin, simvastatin

Cardiovascular Disease (CVD)

Diagnosed (ever):

☐1 Yes ☐2 No

Tuberculosis (TB)

TB diagnosis (latent or active) documented (ever):

☐1 Yes ☐2 No

TB test done (most recent):

☐1 Skin test (PPD) ☐2 Blood test (QFT-GIT, T-SPOT) ☐3 No test documented

TB test result:

☐1 Positive ☐2 Negative ☐3 No result documented

If TB diagnosed and/or test result positive, treatment initiated (e.g., isoniazid, rifampin, rifapentin, others):

☐1 Yes ☐2 No ☐3 Unknown

If TB result negative, test date:

Date: ____/____/_____

Hepatitis C (HCV)

HCV diagnosed (ever):

☐1 Yes ☐2 No

If not diagnosed with HCV, screened at least once (ever):

☐1 Yes ☐2 No

Retinopathy

Diagnosed (ever):

☐1 Yes ☐2 No

Amputation

Lower extremity (ever), any type (e.g., toe, partial foot, above or below knee):

☐1 Yes ☐2 No

Immunizations

Influenza vaccine (during Audit period):

☐1 Yes ☐2 No

Pneumovax/PPSV23 (ever):

☐1 Yes ☐2 No

Td, Tdap, DTaP, or DT (in past 10 years):

☐1 Yes ☐2 No

Tdap (ever):

☐1 Yes ☐2 No

Hepatitis B complete series (ever):

☐1 Yes ☐2 No ☐3 Immune

Shingrix complete series (ever):

☐1 Yes ☐2 No

Laboratory Data (most recent result during Audit period)

A1C: ____.____ %

A1C Date obtained: ____/____/_____

Total Cholesterol: _____ mg/dL

HDL Cholesterol: _____ mg/dL

LDL Cholesterol: _____ mg/dL

Triglycerides: _____ mg/dL

Serum Creatinine: ____.____ mg/dL

eGFR: _____ mL/min/1.73 m²

UACR*: _____ mg/g (*Urine Albumin: Creatinine Ratio)

Local Questions [Optional]

Select one:

☐1_____ ☐2_____ ☐3_____ ☐4_____ ☐5_____ ☐6_____ ☐7_____ ☐8_____ ☐9_____

Text: _____

Version: 9/23/20

Page 2 of 2

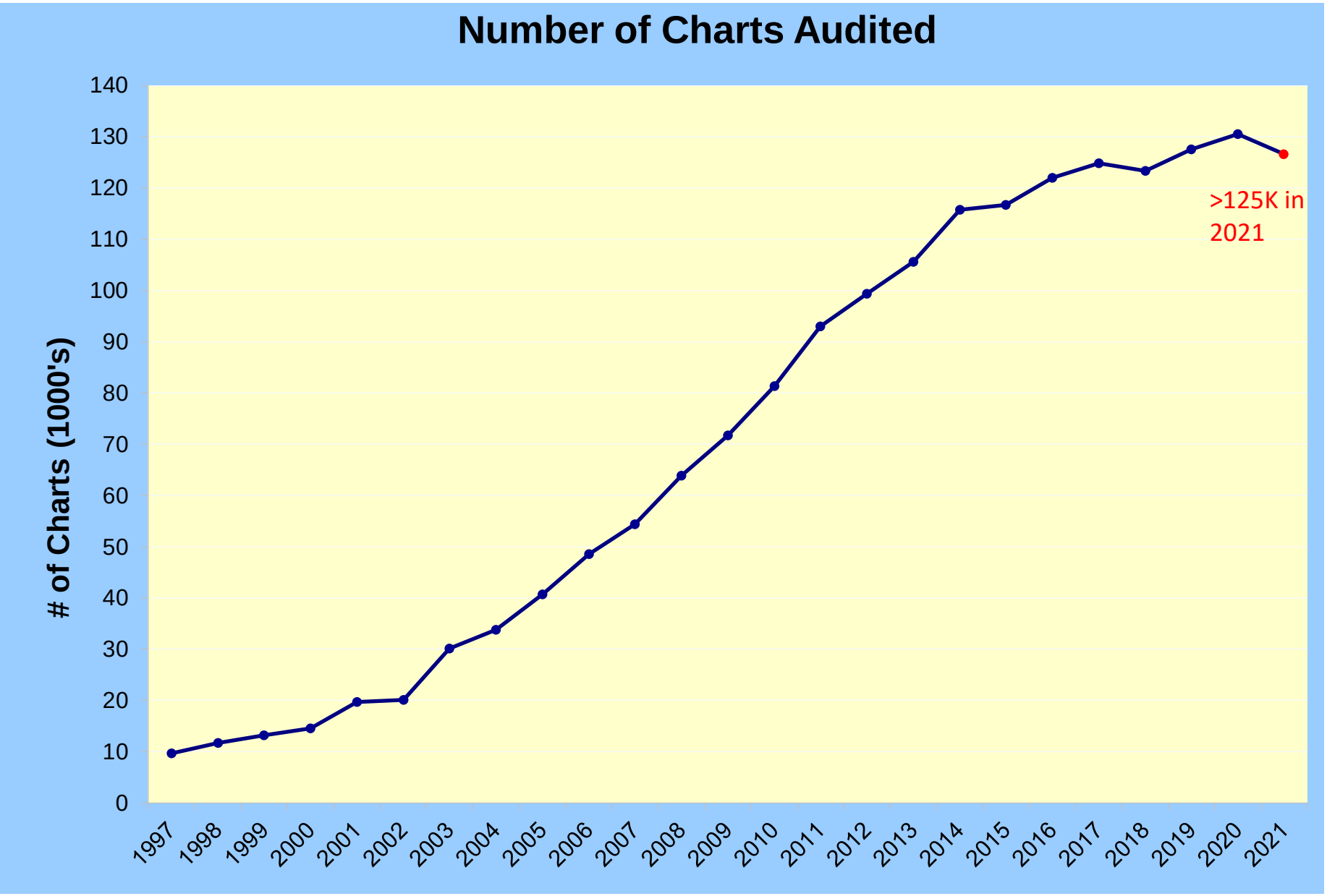
Process: Exams, education, immunizations, medications

Clinical measures: height, weight, lab results (A1c, lipids)

Complications: CVD, CKD, retinopathy, TB

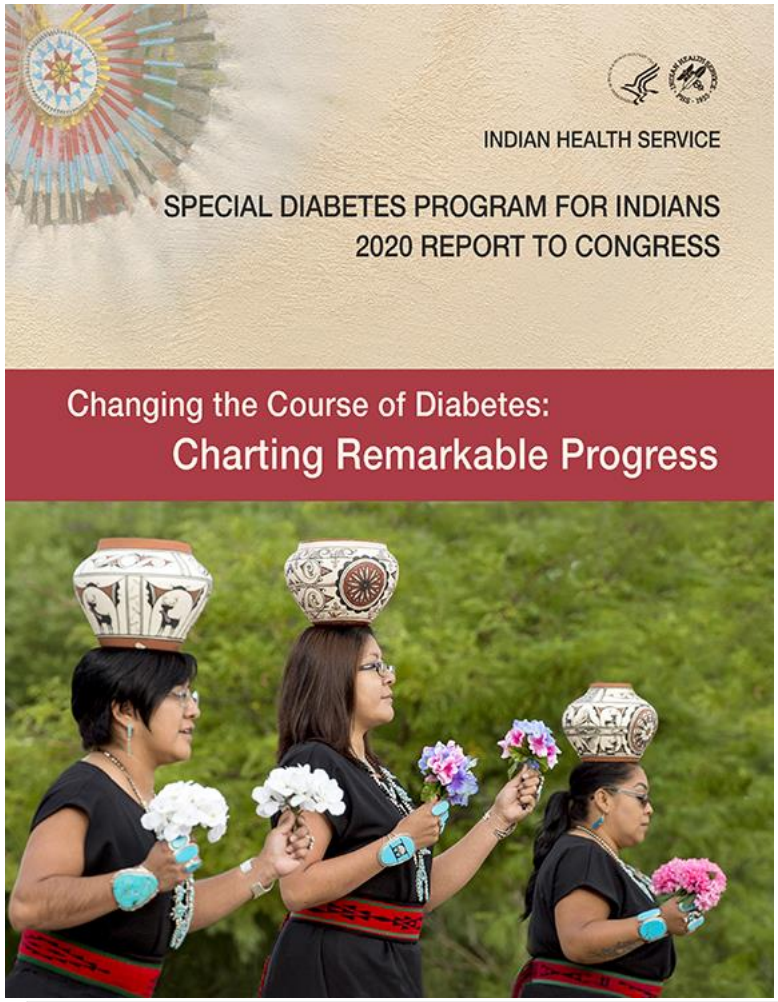
INDIAN HEALTH SERVICE · PHS · 1955 ·

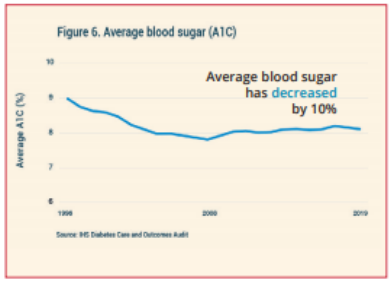
Number of Charts Audited

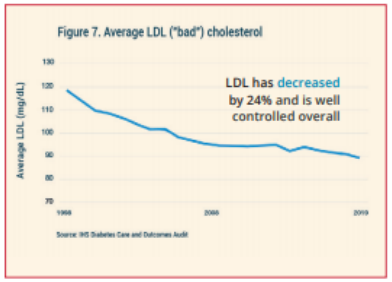


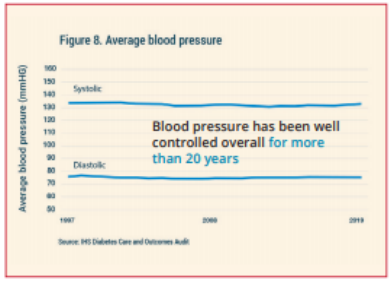
Source: IHS Diabetes Care and Outcomes Audit

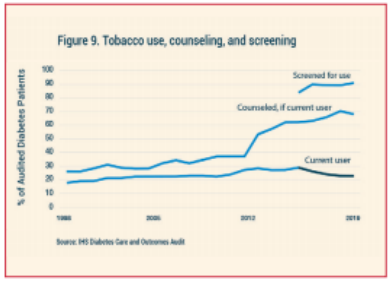
How are national Audit results used?











https://www.ihs.gov/sdpi/reports-to-congress/

[SDPI 2020 Report to Congress]

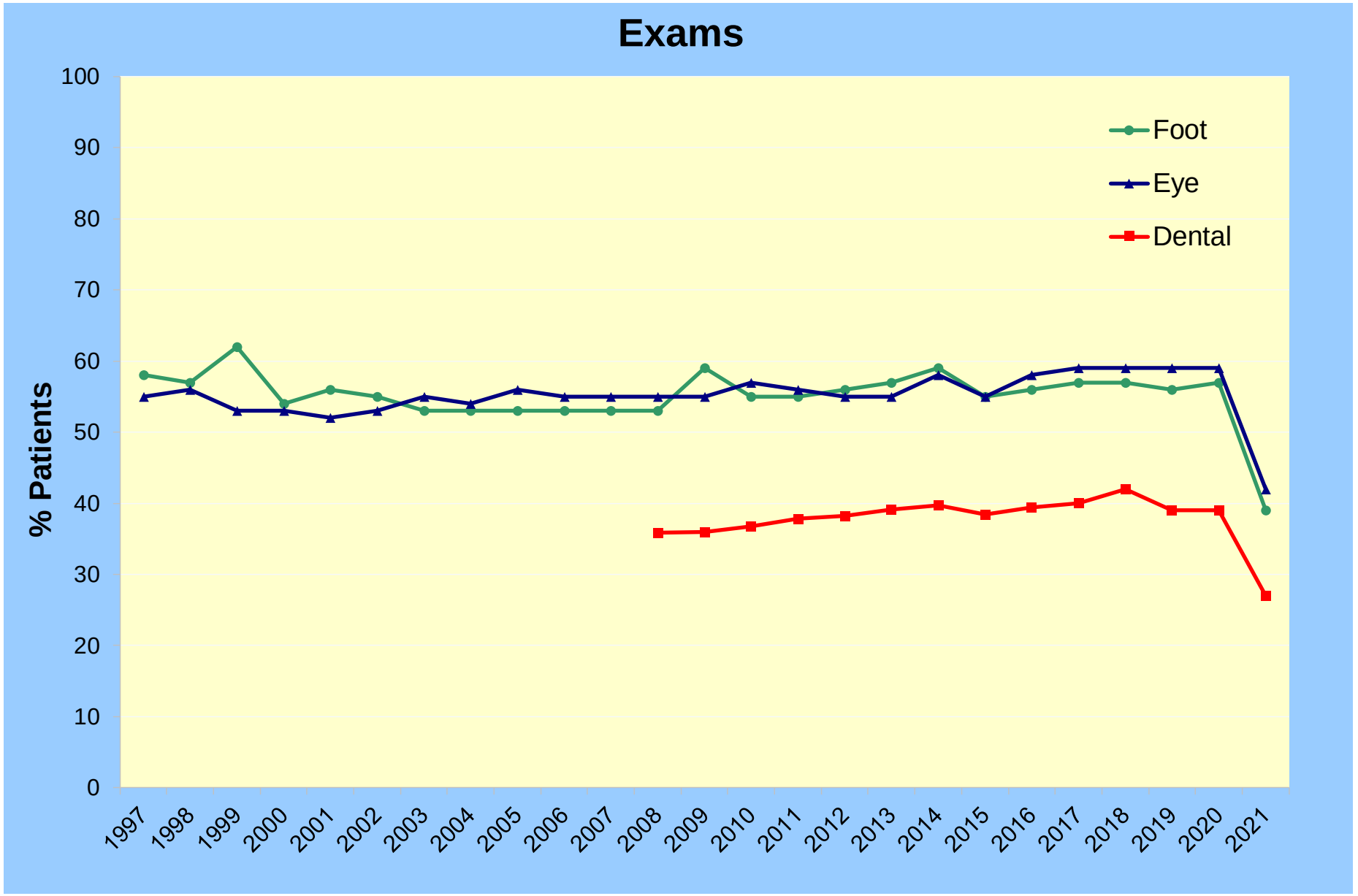
COVID-19 and Diabetes Around the Globe

- **COVID-19 infection associated with increase in new diagnoses of diabetes[1]**
- **More severe illness in people with COVID-19 infection and chronic disease, including diabetes[2]**

1. Khunti, K, Del Prato S, Mathieu C, Kahn SE, Gabbay RA, Buse, JB. COVID-19, Hyperglycemia, and New-Onset Diabetes. Diabetes Care 2021 Oct; dc211318. https://doi.org/10.2337/dc21-1318

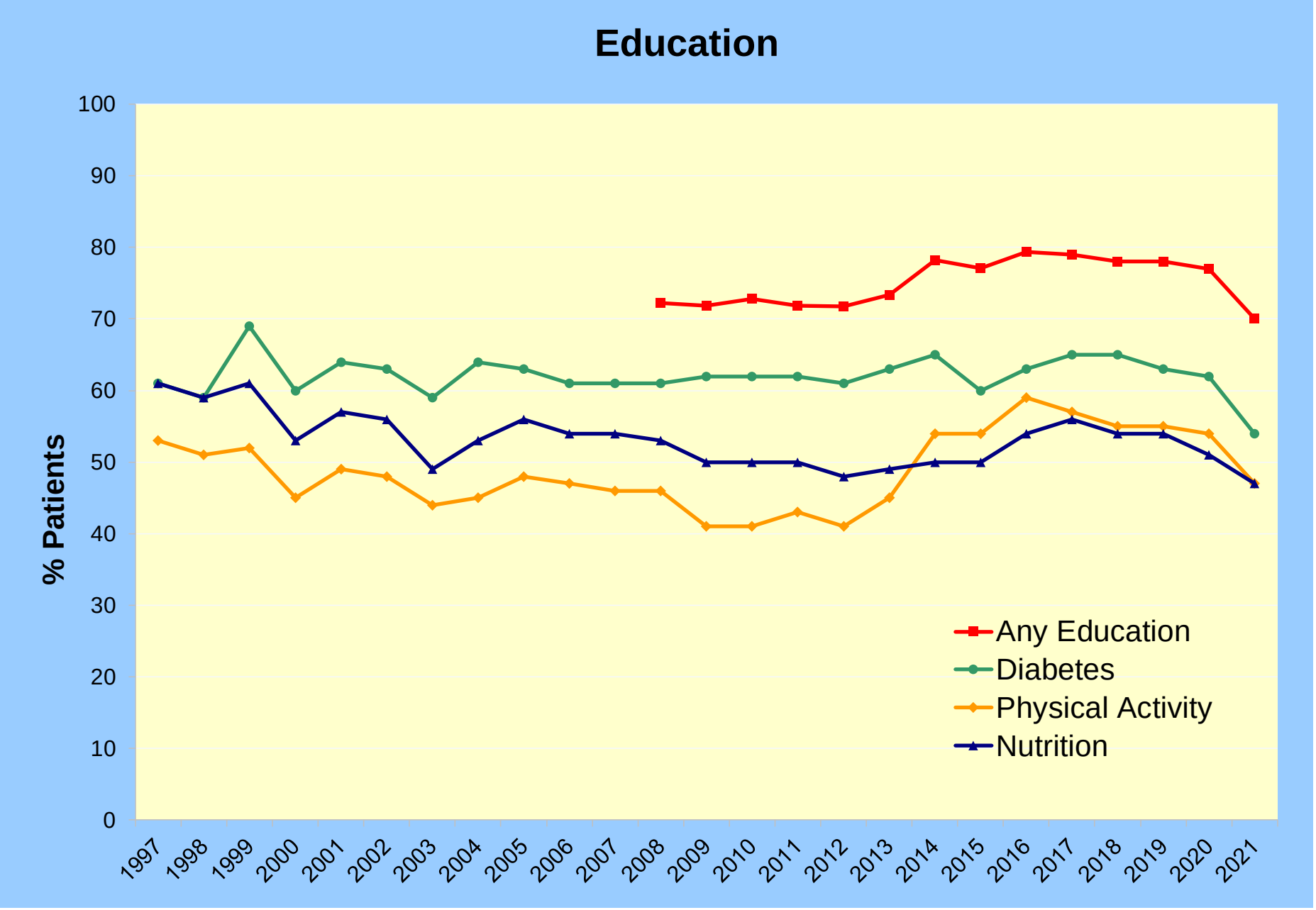
2. Hartmann-Boyce J, Rees K, Perring, Kerneis S, Morris E, Goyder C, Otunla A, James A, Syam N, Seidu S, Khunti K. Risks of and from SARS-CoV-2 Infection and COVID-19 in people with diabetes: a systematic review of reviews. Diabetes Care 2021 Oct; dc210930. https://doi.org/10.2337/dc21-0930

3. Raveendran AV, Misra A. Post COVID-19 Syndrome ("Long COVID") and Diabetes: Challenges in Diagnosis and Management. Diabetes Metab Syndr. 2021 September-October; 15(5): 102235. https://doi.org/10.1016/j.dsx.2021.102235

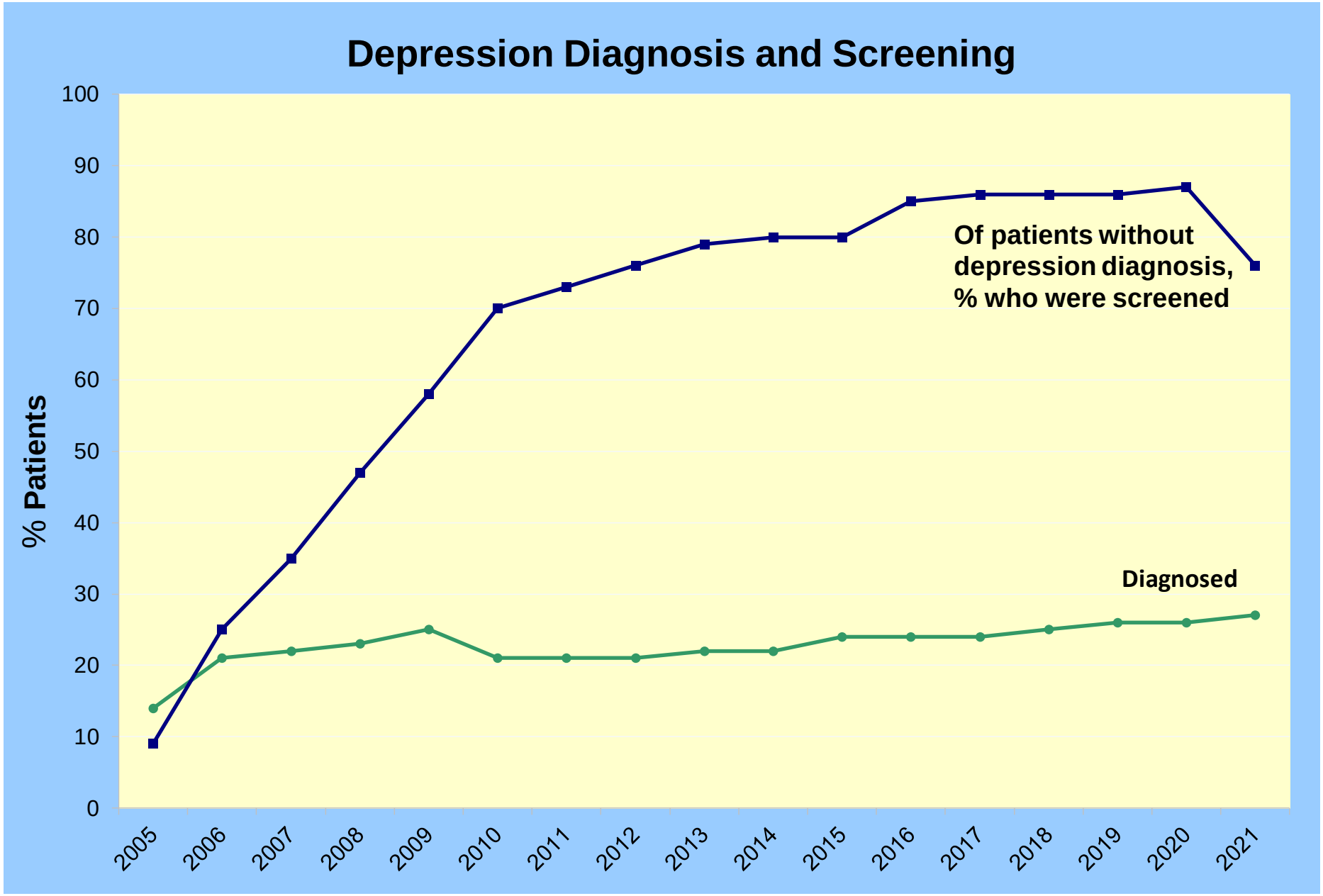


Source: IHS Diabetes Care and Outcomes Audit

Education

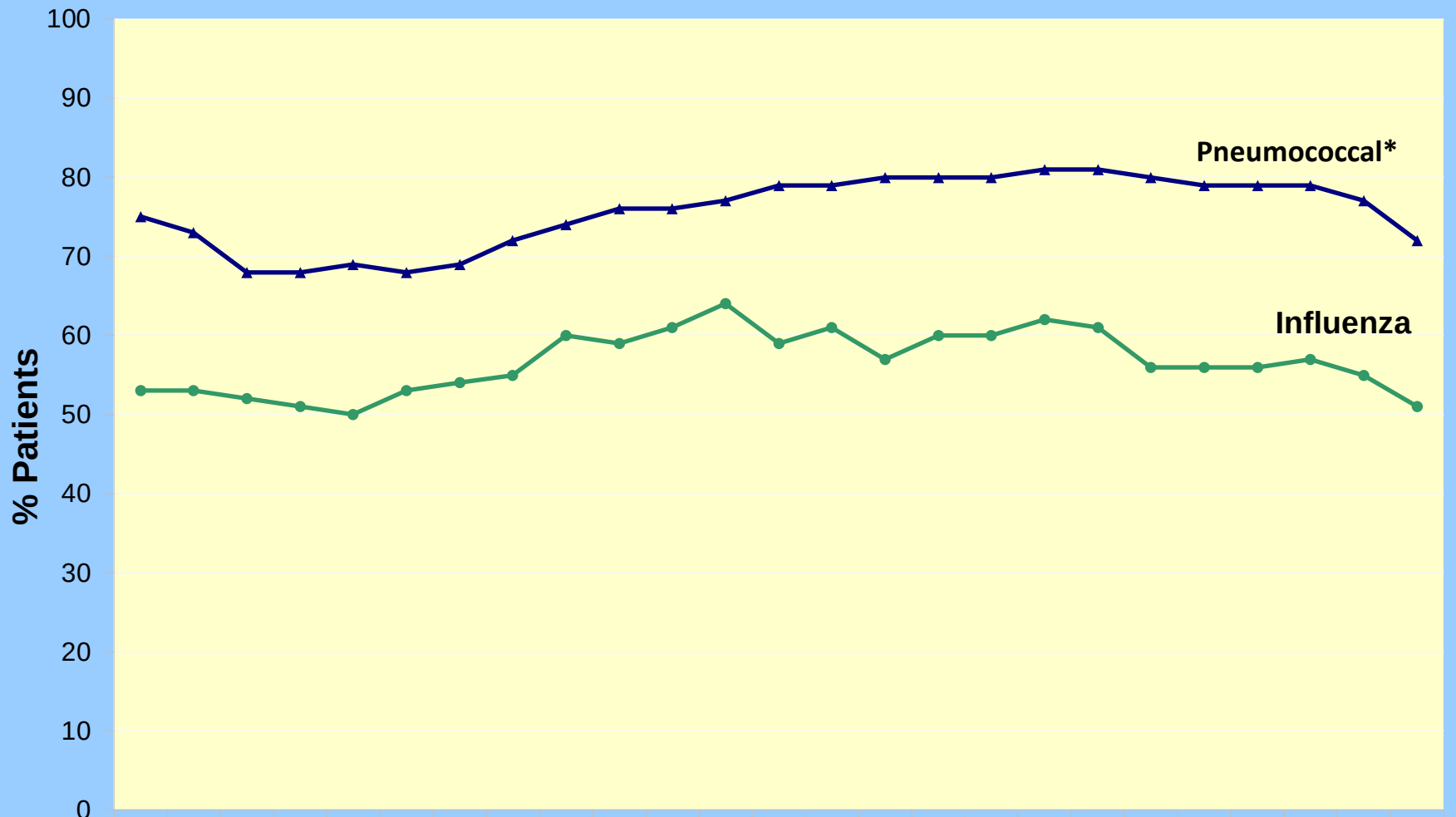


Source: IHS Diabetes Care and Outcomes Audit



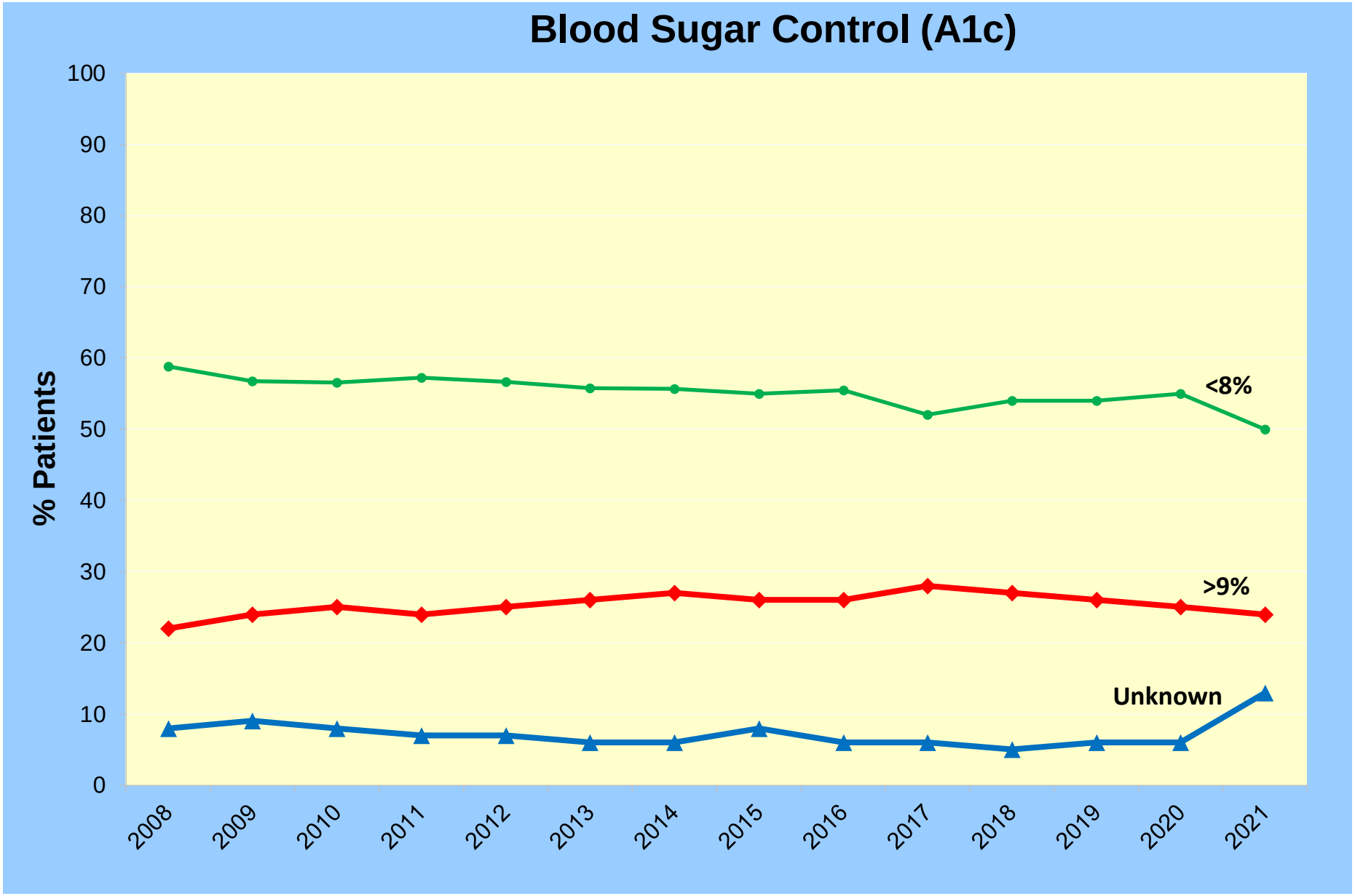
Source: IHS Diabetes Care and Outcomes Audit

Immunizations



*Beginning in 2021, only PPSV23 counted; prior to that PCV13 also counted as pneumococcal vaccination

Source: IHS Diabetes Care and Outcomes Audit



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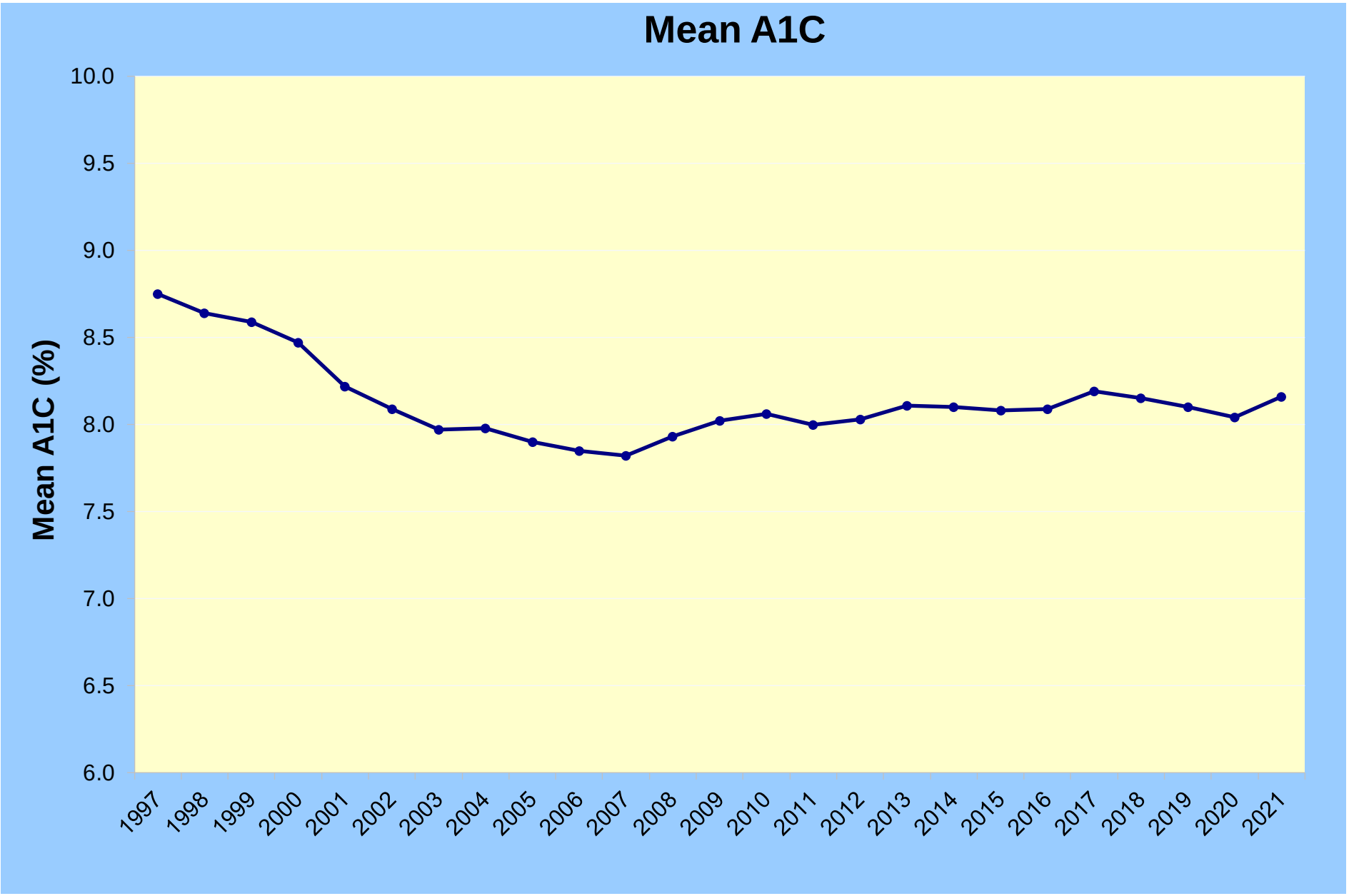
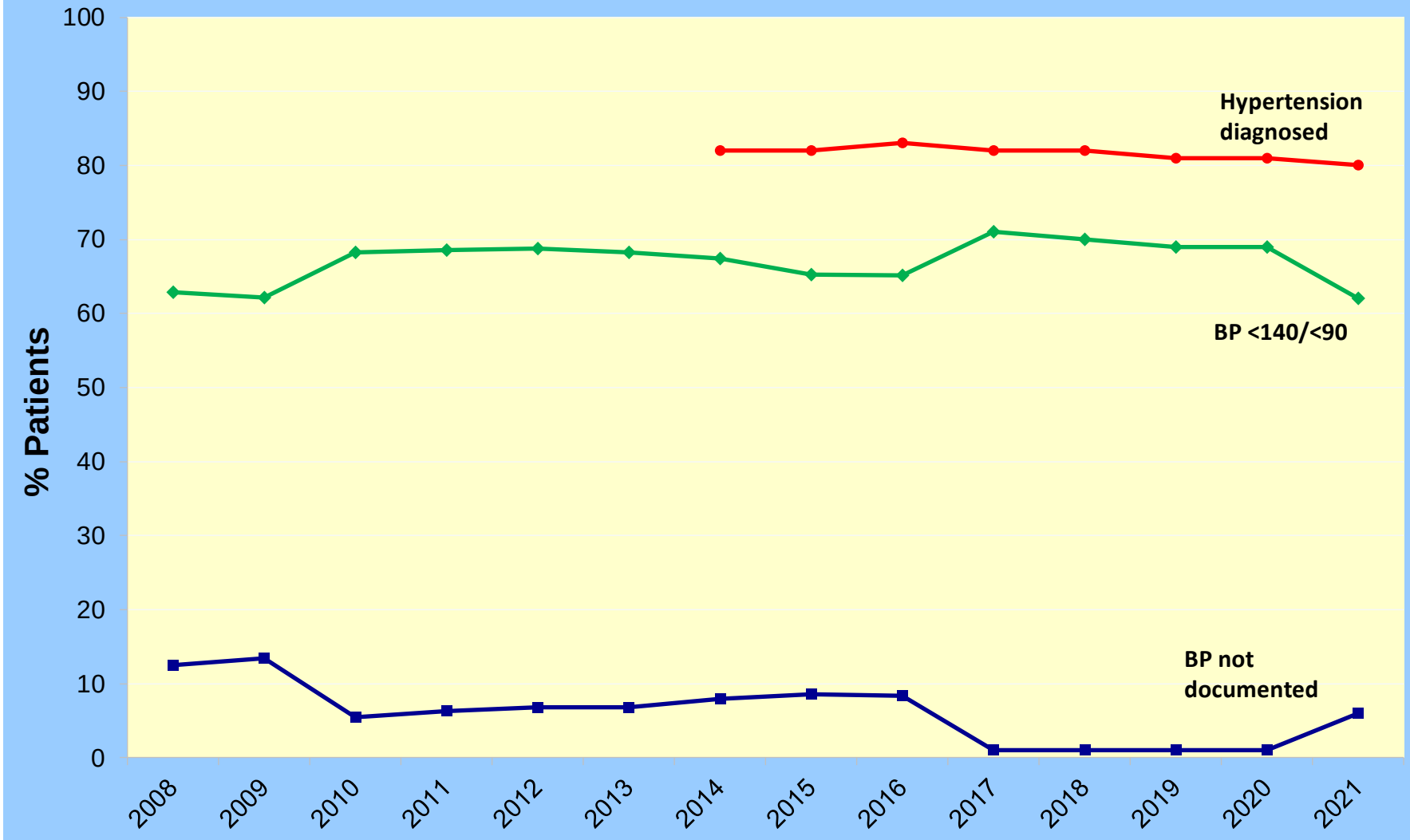


Source: IHS Diabetes Care and Outcomes Audit

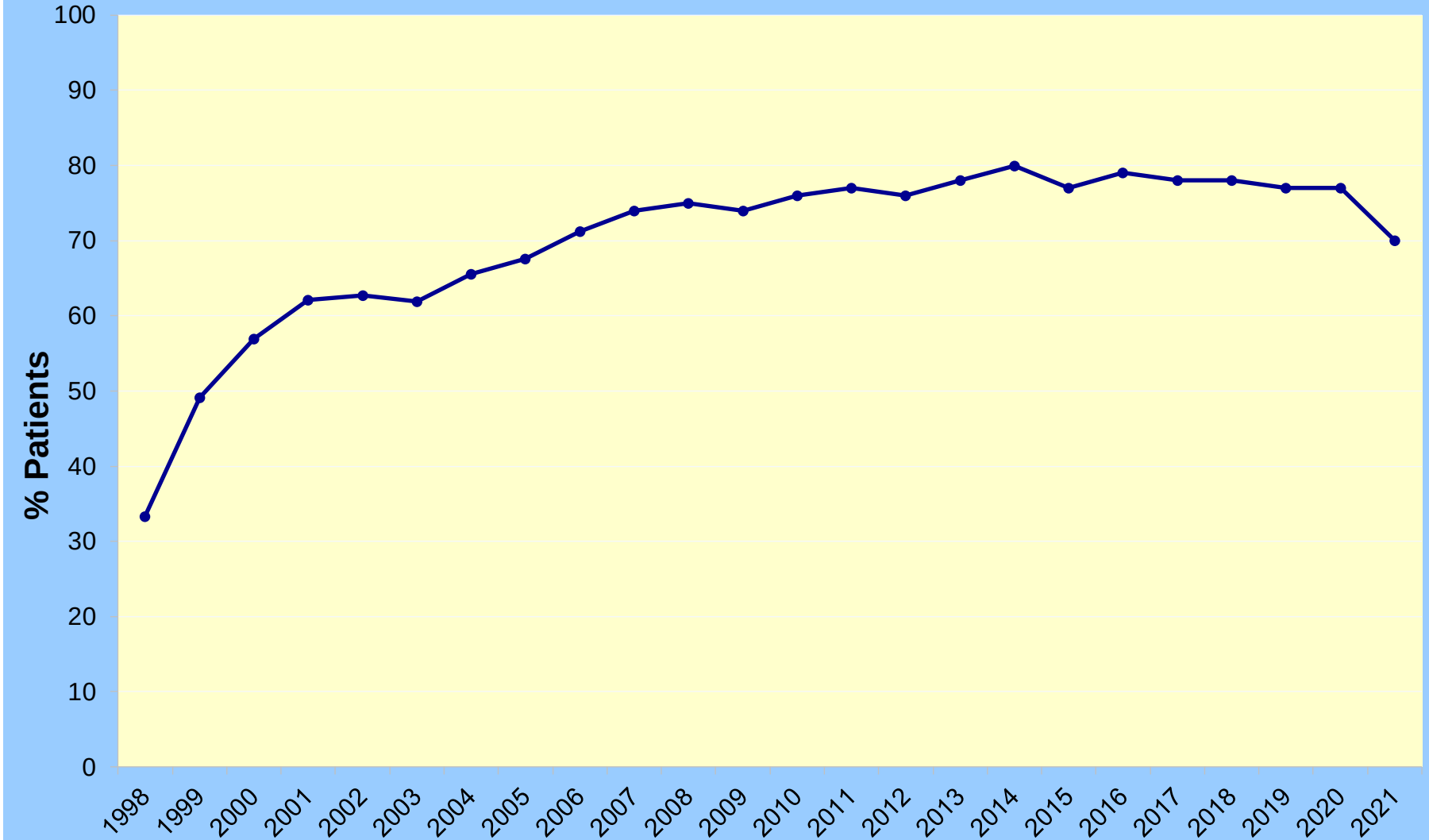
Blood Pressure Control* (<140/<90 mmHG)



*2010-2016: Patients with 2 or 3 blood pressure values. 2017-2021: Patients with 1, 2, or 3 blood pressure values.

Source: IHS Diabetes Care and Outcomes Audit

LDL Cholesterol Screening



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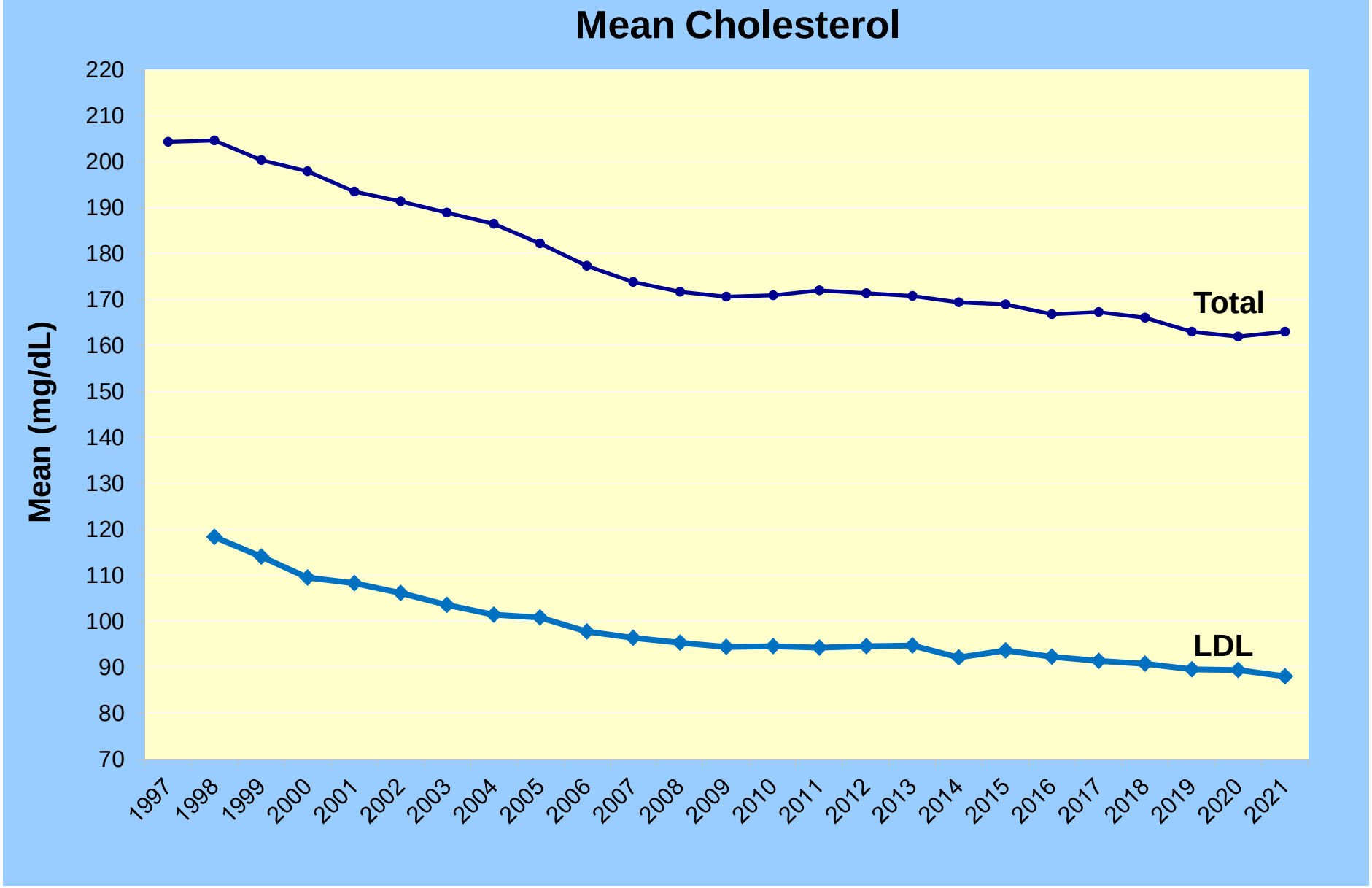
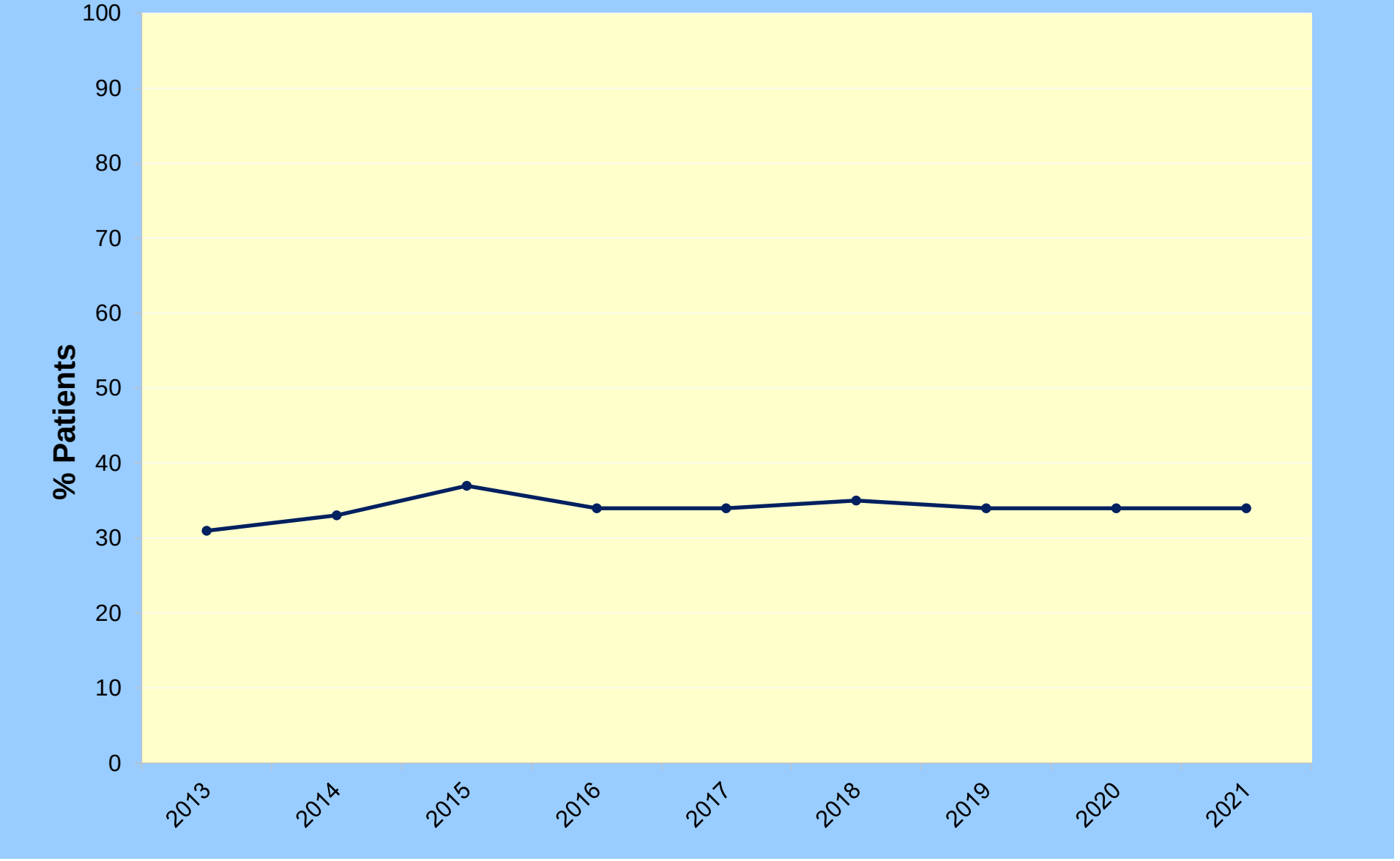


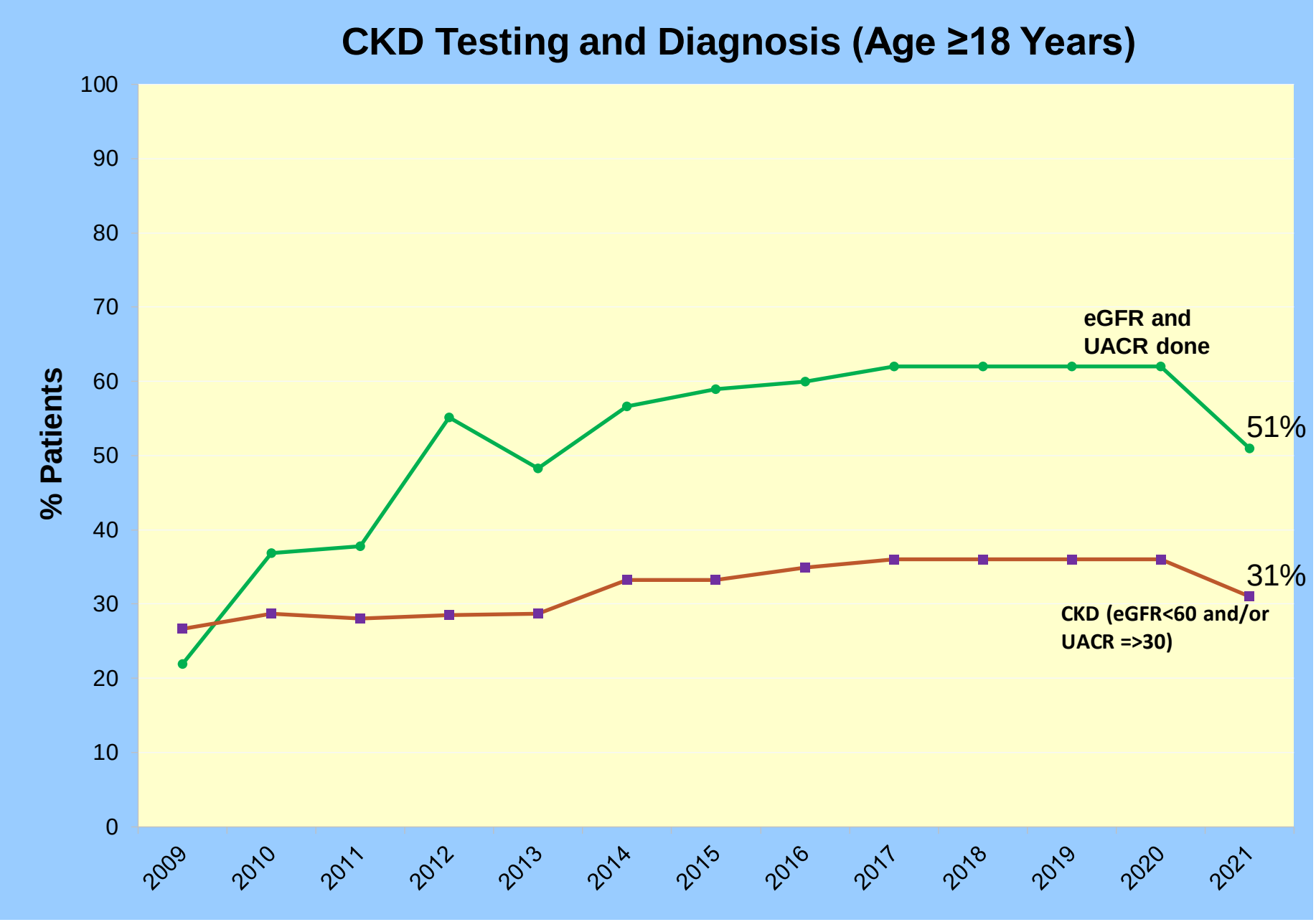
Source: IHS Diabetes Care and Outcomes Audit

Cardiovascular Disease (CVD)



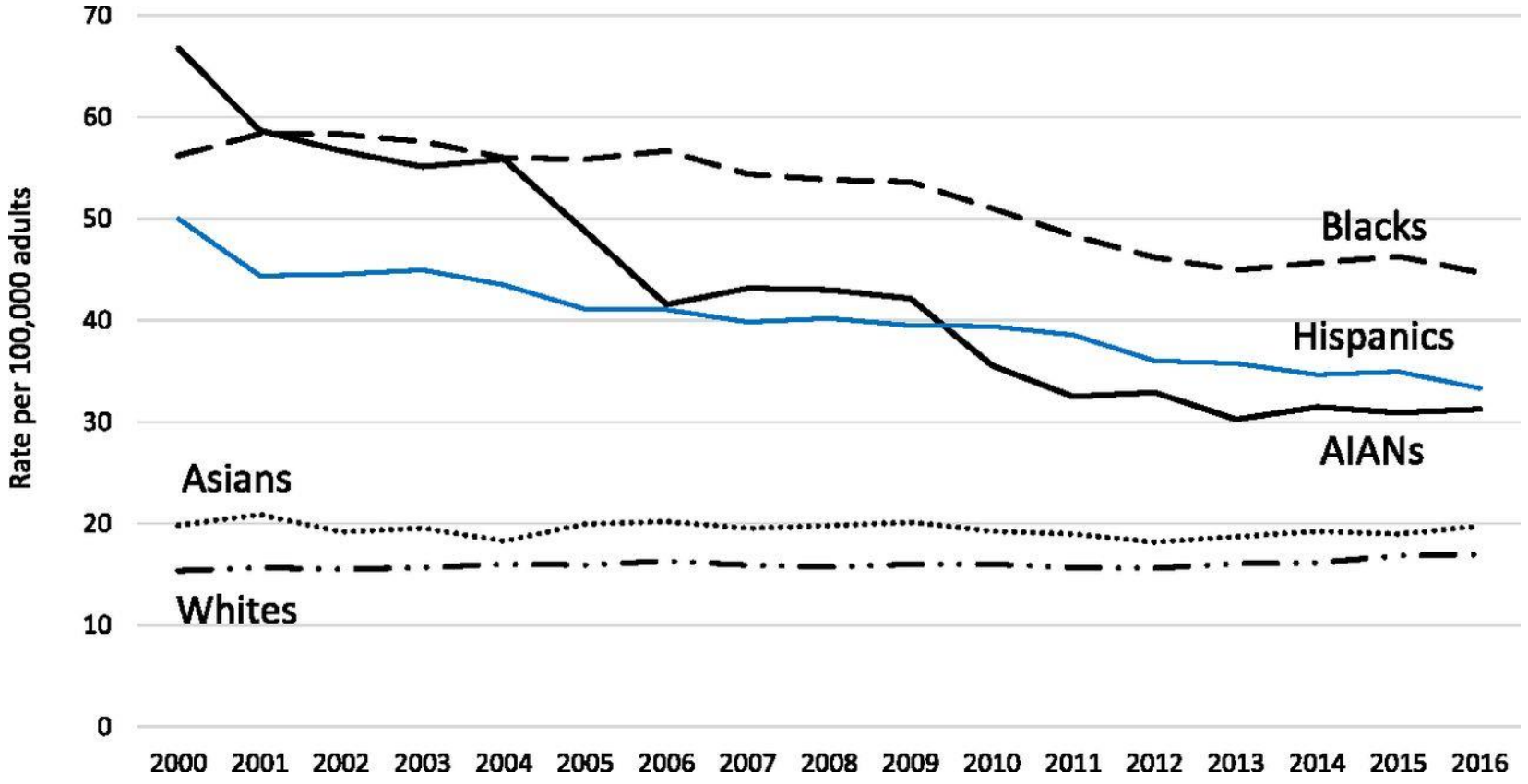
Source: IHS Diabetes Care and Outcomes Audit

CKD Testing and Diagnosis (Age ≥18 Years)



Source: IHS Diabetes Care and Outcomes Audit

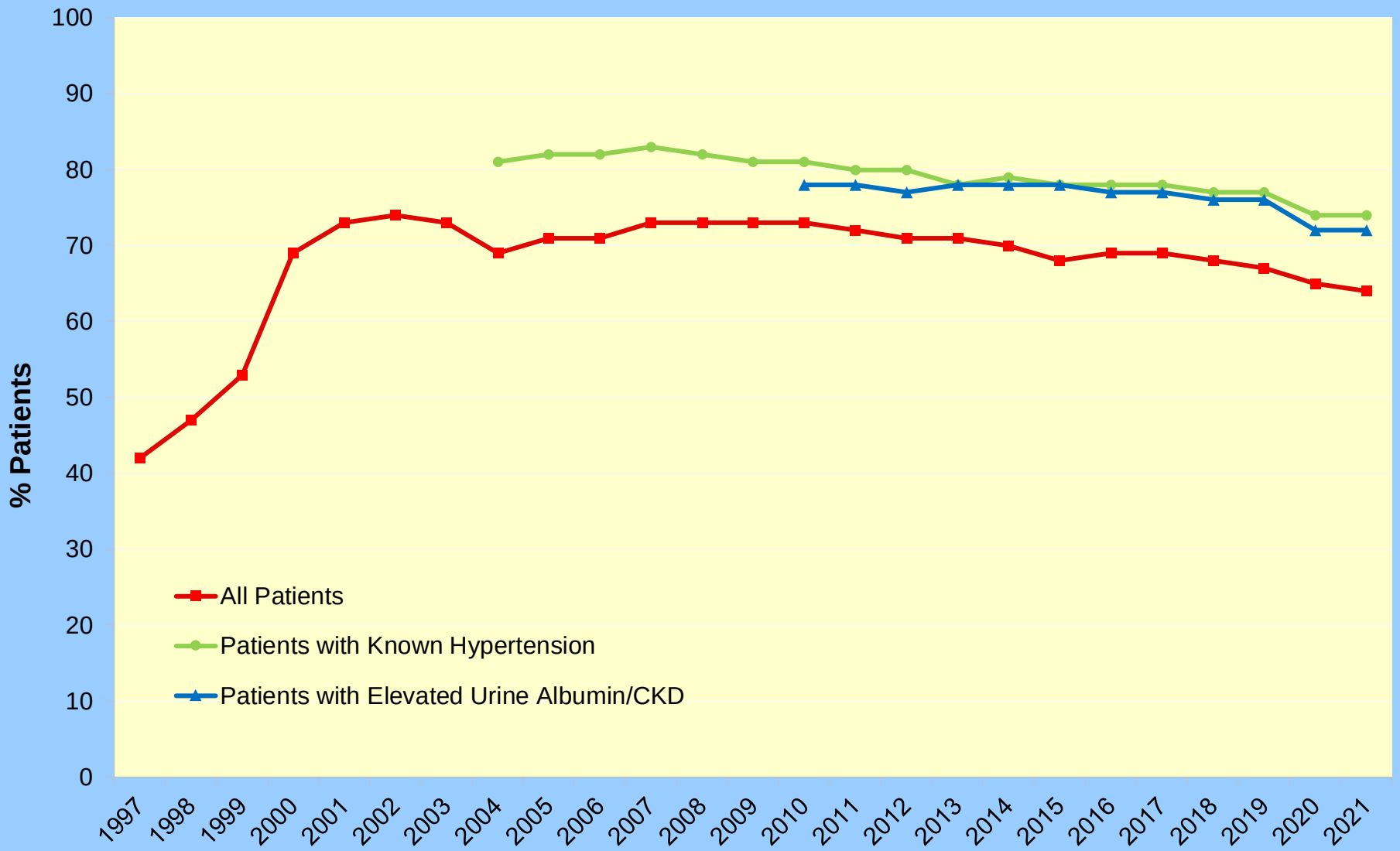
Incidence of diabetes-related ESKD among adults aged ≥18 years by race or ethnicity, 2000–2016.



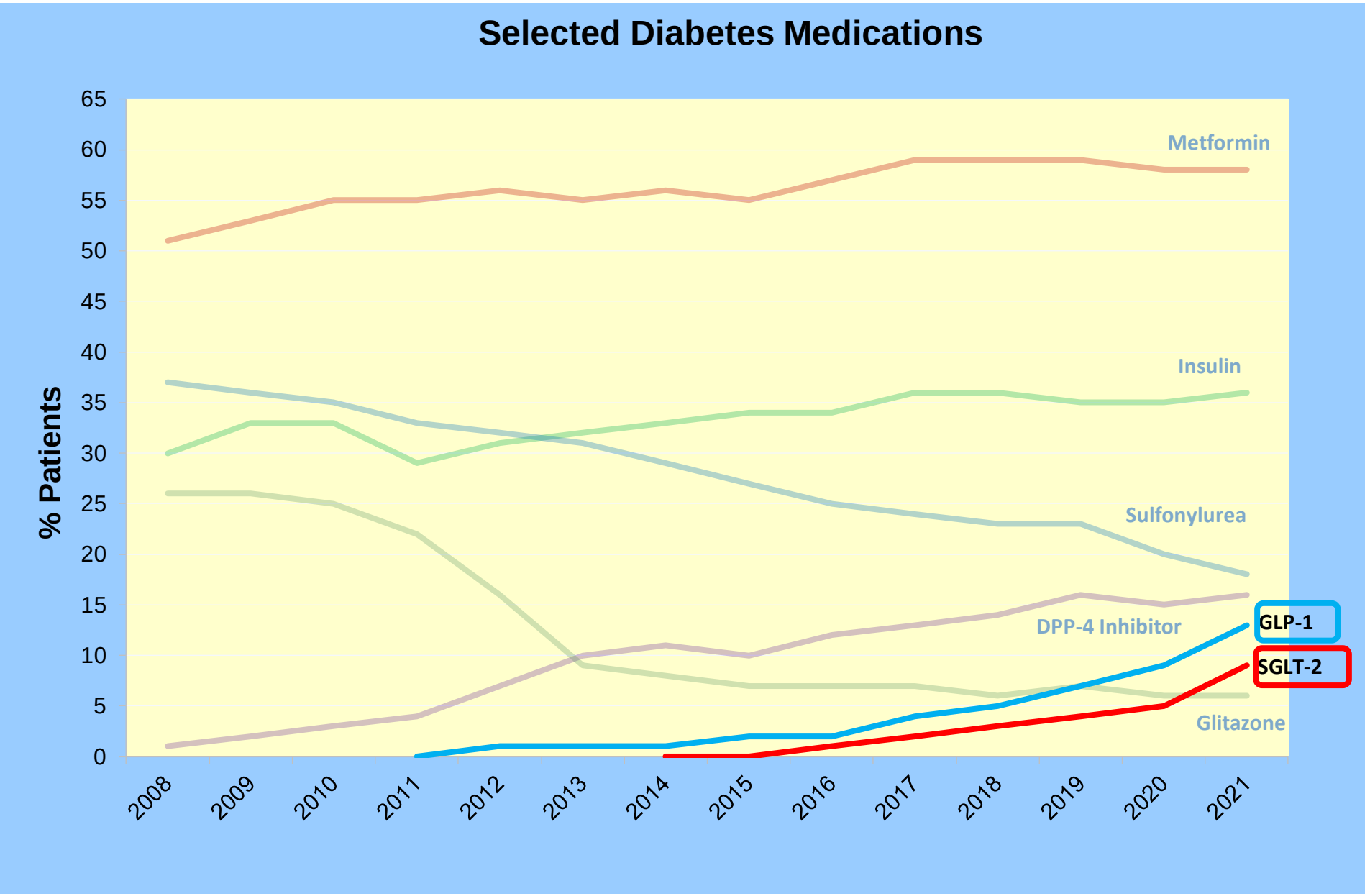
Nilka Ríos Burrows et al. Dia Care 2020;43:2090-2097

American Diabetes Association.

ACE Inhibitor/ARB Use



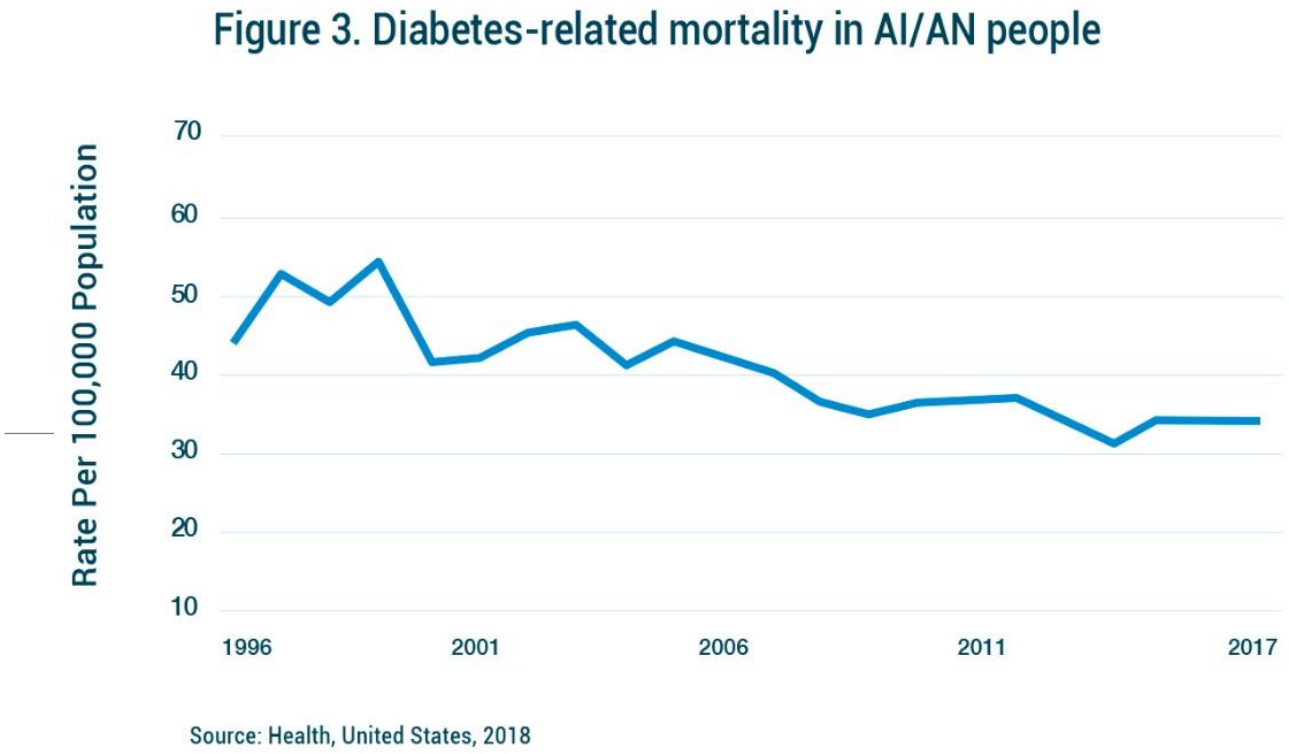
Source: IHS Diabetes Care and Outcomes Audit



Note: Axis range is 0-65 instead of 100.

Source: IHS Diabetes Care and Outcomes Audit

Diabetes Related Mortality



Diabetes-related mortality decreased by 37%

Summary

There have been tremendous improvements in diabetes outcomes for AI/AN people.

Despite COVID-19 impact on AI/AN communities, Audit data suggests that facilities worked hard to provide routine diabetes care.

Facilities can use their Audit data to help identify:

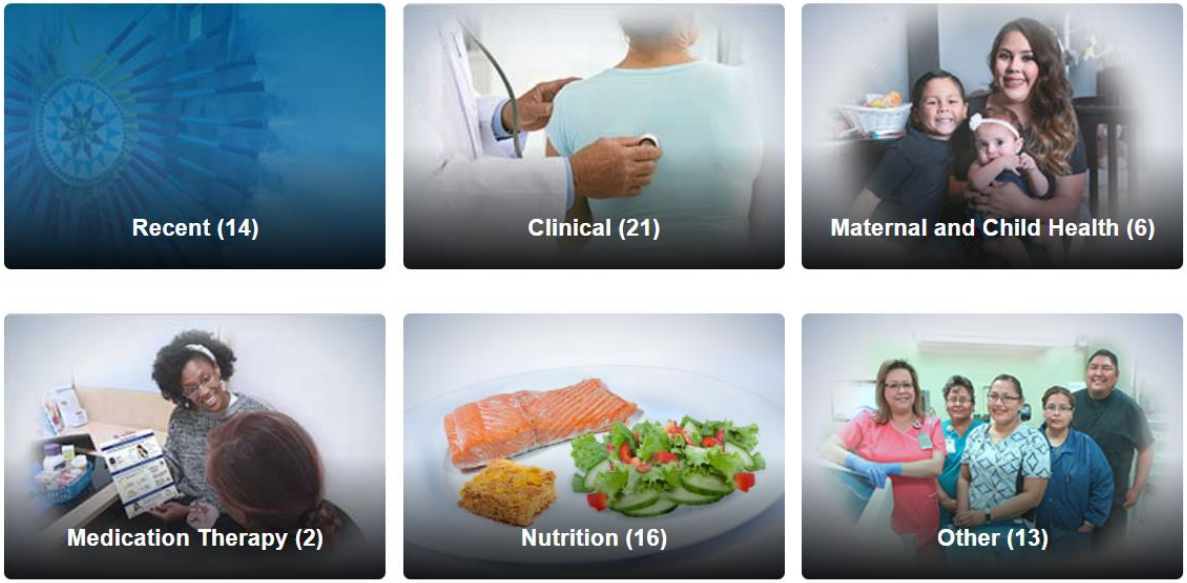
- aspects of diabetes care impacted by COVID-19
- opportunities to improve their care processes

DIABETES TRAINING CME/CE CREDITS

Recorded CME/CE Webinars

Choose from a variety of topics on diabetes-related care that provide CME/CE credit. Steps to receive CME/CE credit for recorded online webinars are listed on the button to the right.

Steps to Receive CME/CE Credit



Live and On Demand – ihs.gov/diabetes

Clinical resources from DDTP!

Education Materials and Resources (Online Catalog)

Featured | Introduction | Instructions | Ordering Information

Search for All Materials and Resources from the Division of Diabetes

- Find culturally relevant and easy-to-use materials for providers, patients, and clients.
- Materials are free to order, or to download and print.
- Search by Topic, Audience, Format or Title/Keyword. New Formats (Video, Podcast, Digital Book) have been added.
- Media Tools contain Public Service Announcements (PSAs) and articles for you to forward to newsletter editors.
- Start your search!

By Topic: Narrow by topic... Go

By Audience: Narrow by audience... Go

By Format: Narrow by format... Go

By Title or Keyword

www.ihs.gov/diabetes

Food Insecurity

Food insecurity (the limited or uncertain ability to reliably access safe and nutritious food) is now recognized as a common and potent risk factor for developing type 2 diabetes and its complications and is a contributor to socioeconomic, racial, and ethnic disparities in diabetes outcomes.

Food insecurity compels individuals and families to consume low-cost, carbohydrates- and energy-dense (high calorie) foods that increase the risk of type 2 diabetes and make the clinical management of diabetes more challenging.

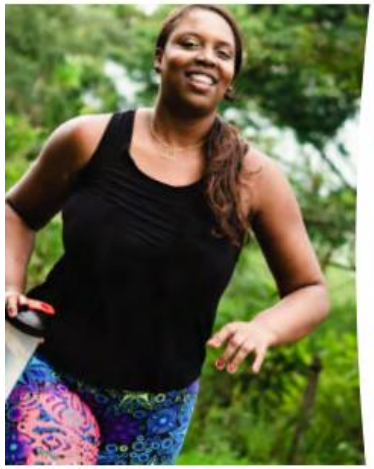
Food insecurity further forces individuals with diabetes to make difficult choices among paying for food, housing, monitoring devices, medicines, and medical care.

Interventions – Fruit and Vegetable Rx Program (COPE) – Navajo Nation

USDA Indigenous Food Sovereignty Initiative

The USDA Indigenous Food Sovereignty Initiative (PDF, 86.4 KB) promotes traditional food ways, Indian Country food and agriculture markets, and indigenous health through foods tailored to American Indian/Alaska Native (AI/AN) dietary needs. USDA is partnering with tribal-serving organizations on seven projects to reimagine federal food and agriculture programs from an indigenous perspective and inform future USDA programs and policies.

National Clinical Care Commission



Report to Congress on Leveraging Federal Programs to Prevent and Control Diabetes and Its Complications

2021

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https://health.gov/sites/default/files/2022-01/NCCC%20Report%20to%20Congress.pdf

Diabetes Is a Medical and a Societal Problem

Social and environmental conditions that shape people's daily experiences have a huge impact on whether people will develop diabetes or suffer from its consequences.

Thus, the Commission approached its charge through an expanded chronic care model. Diabetes in the U.S. cannot simply be viewed as a medical or health care problem, but also must be addressed as a societal problem that cuts across many sectors, including food, housing, commerce, transportation, and the environment.

The Commission believes that to effectively improve the health outcomes of people at risk for or affected by diabetes, all of these elements must be taken into account.

Recommendations for Diabetes Prevention

- Updating and increasing funding to the U.S. Department of Agriculture's nutrition assistance programs to promote both food security and dietary quality;
- Increasing breastfeeding rates through effective federal programs and paid maternity leave;
- Implementing federal strategies to encourage the consumption of water over sugar-sweetened beverages in the U.S. population;
- Updating the Food and Drug Administration's food labeling policies and practices to prevent and control diabetes;
- Providing the Federal Trade Commission with the authority and resources to regulate the food and beverage industry's marketing and advertising to children.

- Modifying federal and agency policies to reduce environmental exposures associated with diabetes in the ambient environment (air, water, land, and chemical)
- Improve the built environment by enhancing walkability, green spaces, physical activity resources, and active transport opportunities;

Patient- Centered Model

Historically, the clinical care of individuals with prediabetes and diabetes has involved a combination of lifestyle counseling, patient self-management education, and therapeutics (medications).

“integrated, patient-centered model” of care includes robust clinic-community linkages.

Clinic-community linkages involve referrals to programs, that offer basic goods and services. Examples include programs that provide assistance with nutrition, housing, and transportation, among others.

The underlying rationale for this comprehensive, integrated model is that connecting individuals to such resources will help clinicians and patients better prevent and control diabetes and its complications.

Questions?