

US Needs Primary Care

Robert M Califf MD

Professor, Duke University

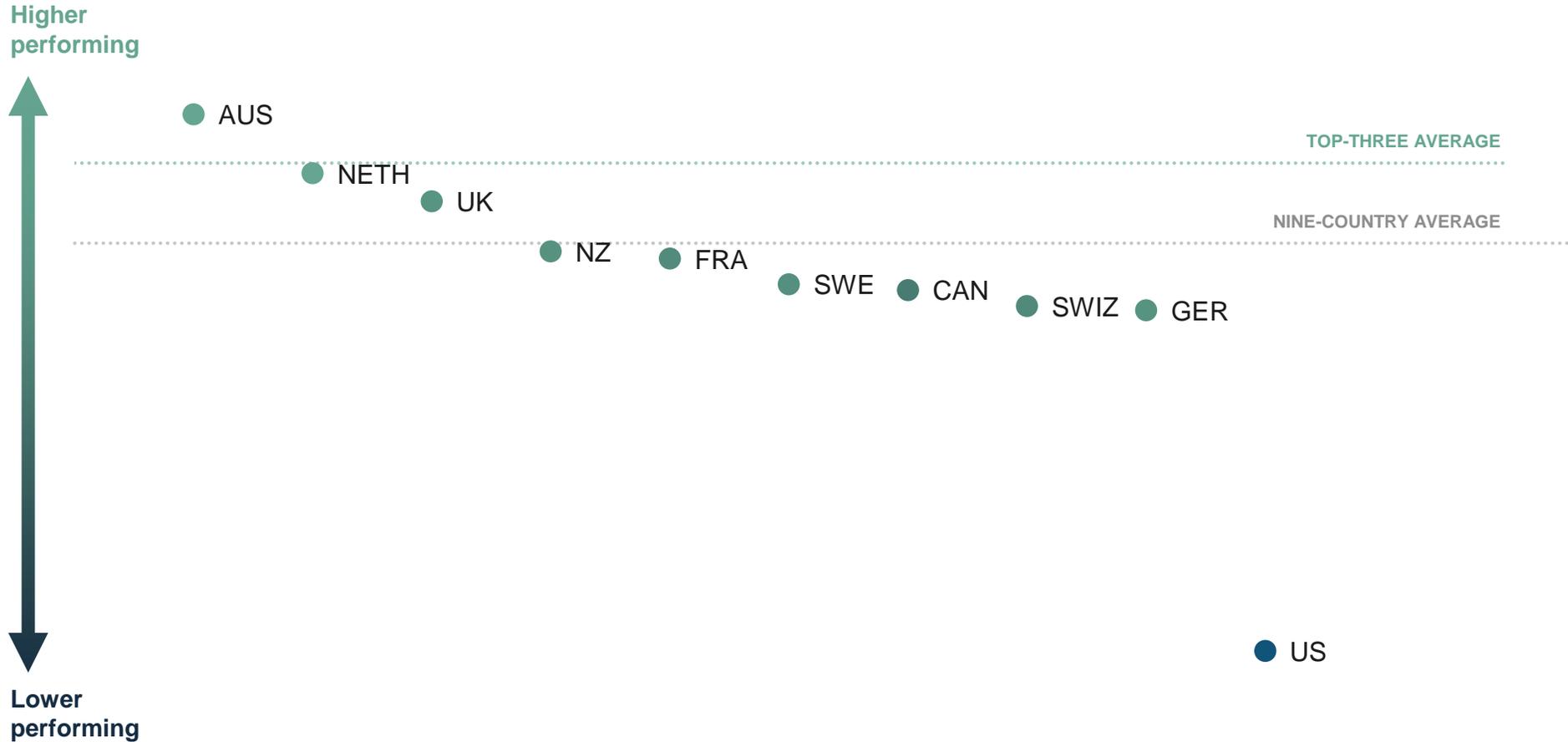
“Chief Provocateur”

Former 22nd and 25th Commissioner of the US Food and Drugs
Administration

Health Trends

- US has worst outcomes among large, high income countries
- But spends much more \$\$

The United States lags its international peers considerably on health system performance.

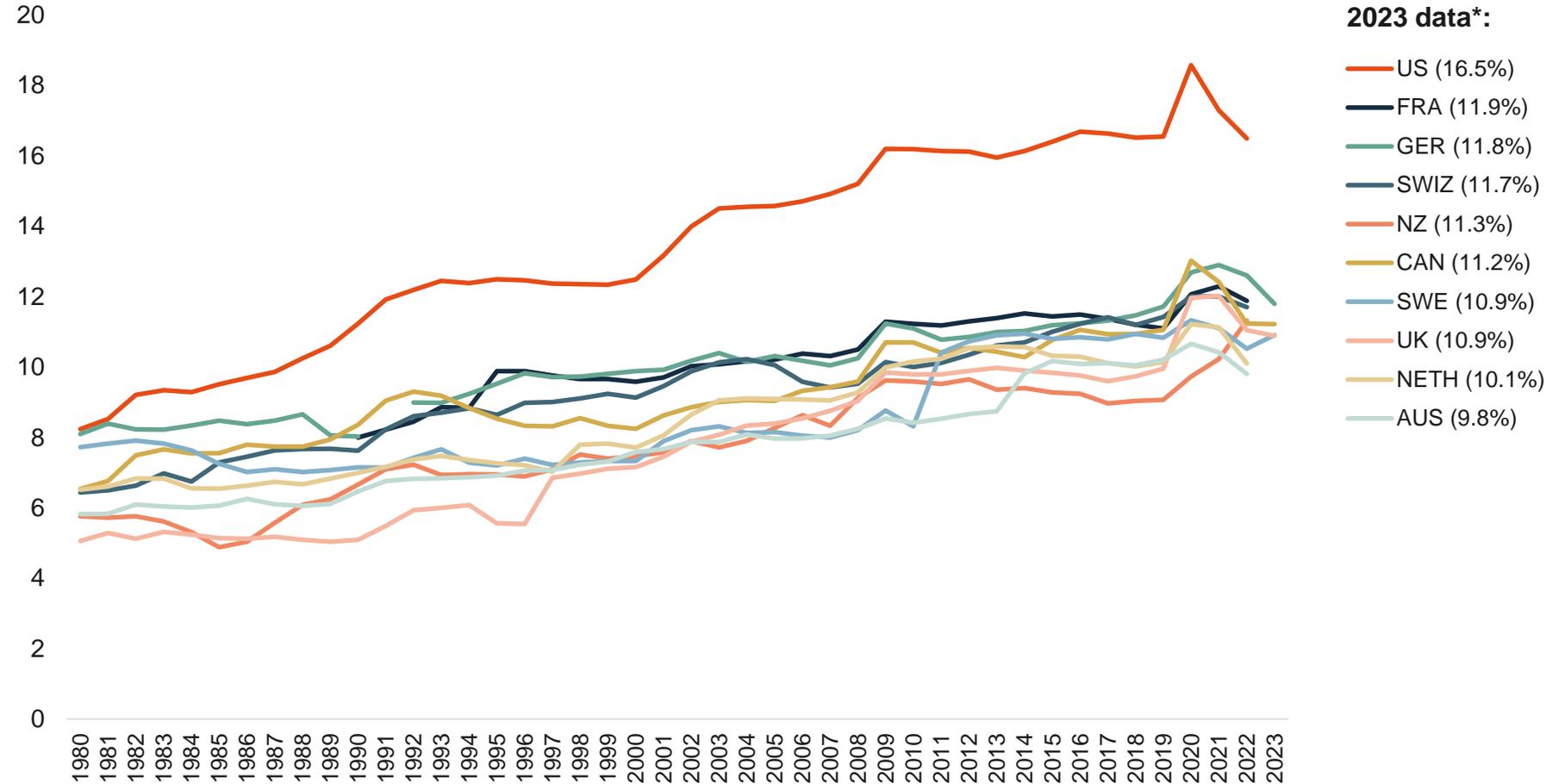


Note: To normalize performance scores across countries, each score is the calculated standard deviation from a nine-country average that excludes the US. See “How We Conducted This Study” for more detail.

Data: Commonwealth Fund analysis.

Health Care Spending as a Percentage of GDP, 1980–2023

Percent (%) of GDP

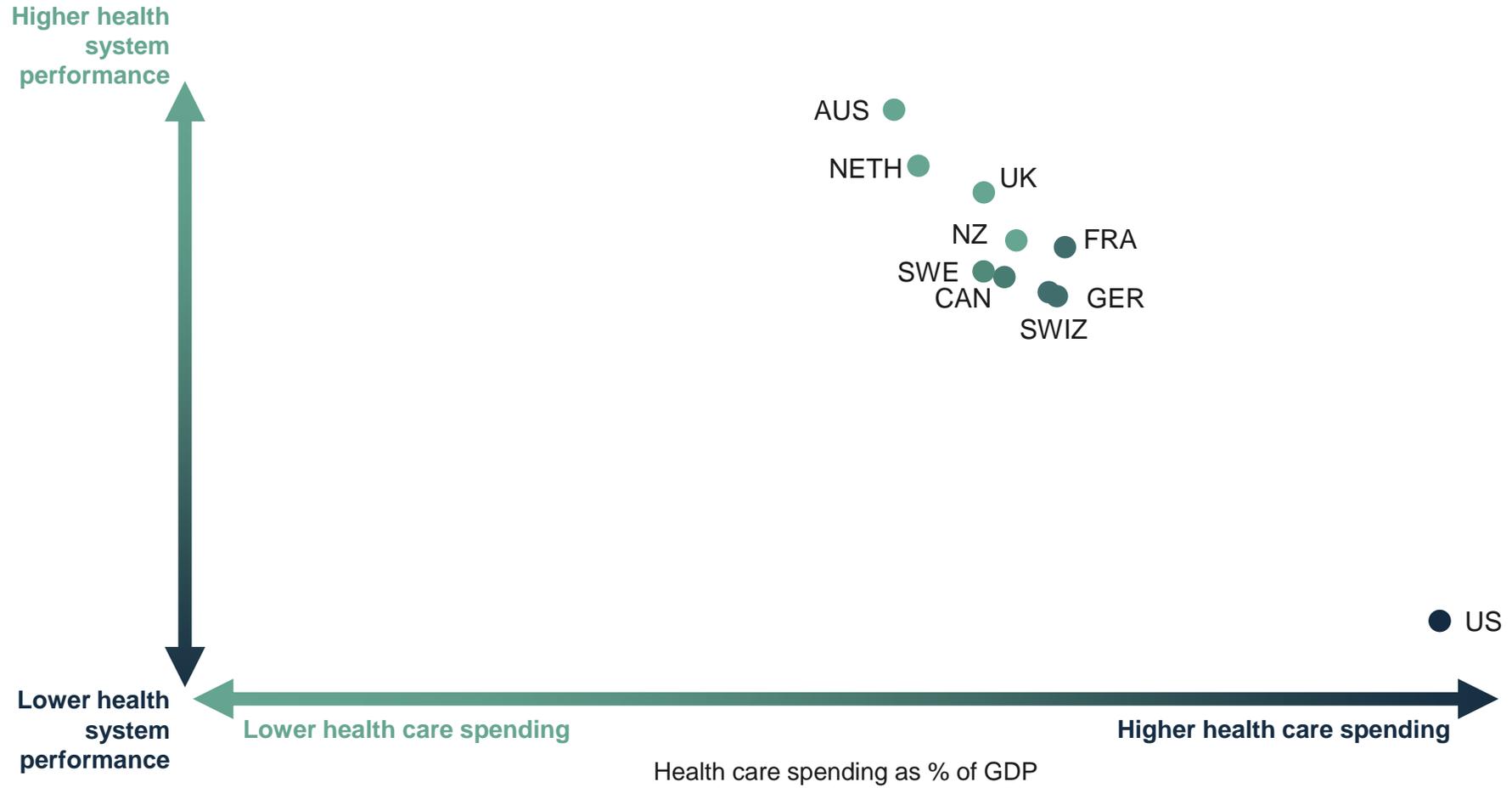


Notes: GDP = gross domestic product. Current expenditures on health. Based on System of Health Accounts methodology, with some differences between country methodologies.

* Data for CAN, GER, SWE, and the UK from 2023; data for AUS, FRA, NETH, NZ, SWIZ, and the US from 2022.

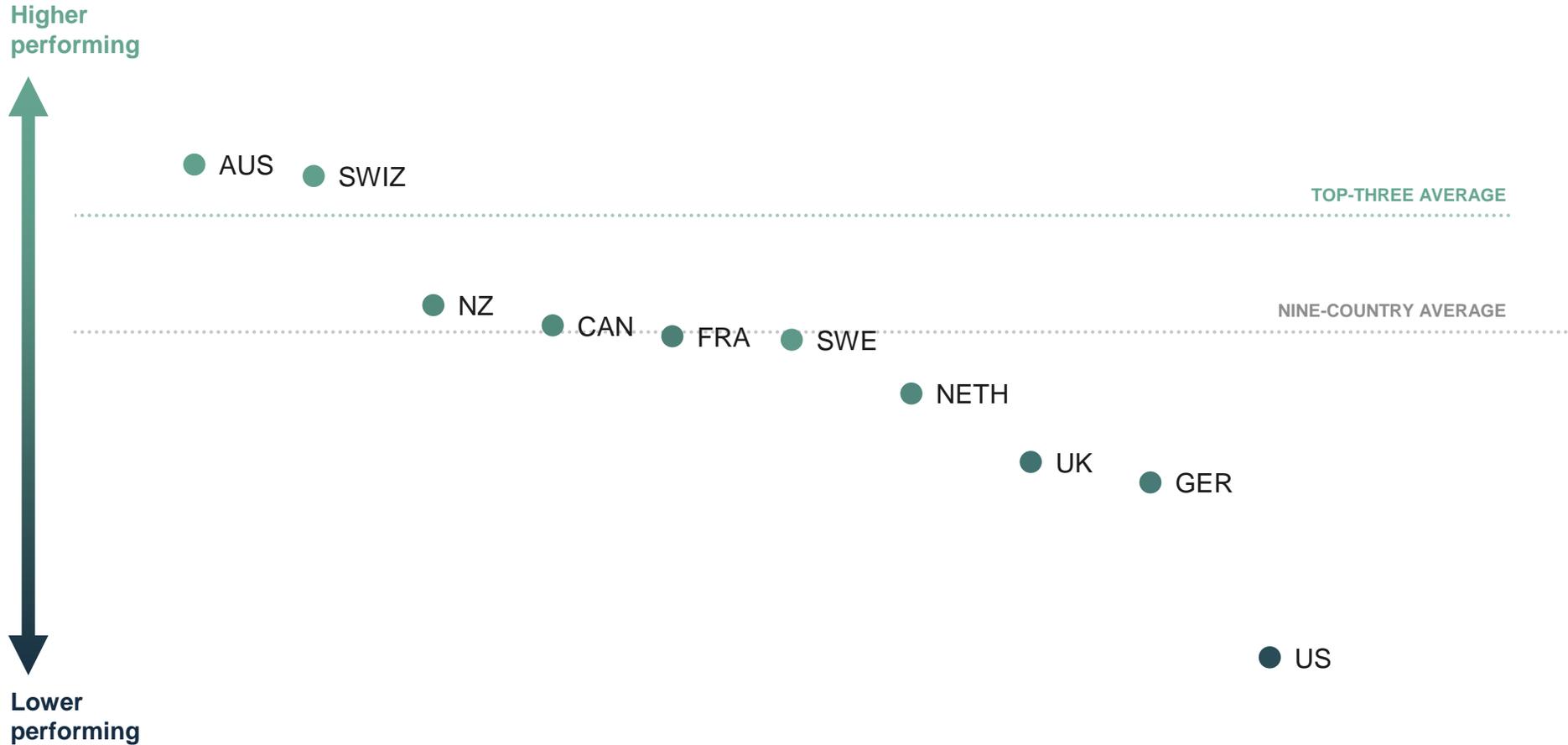
Data: OECD Health Data, July 2024.

Health Care System Performance Compared to Spending



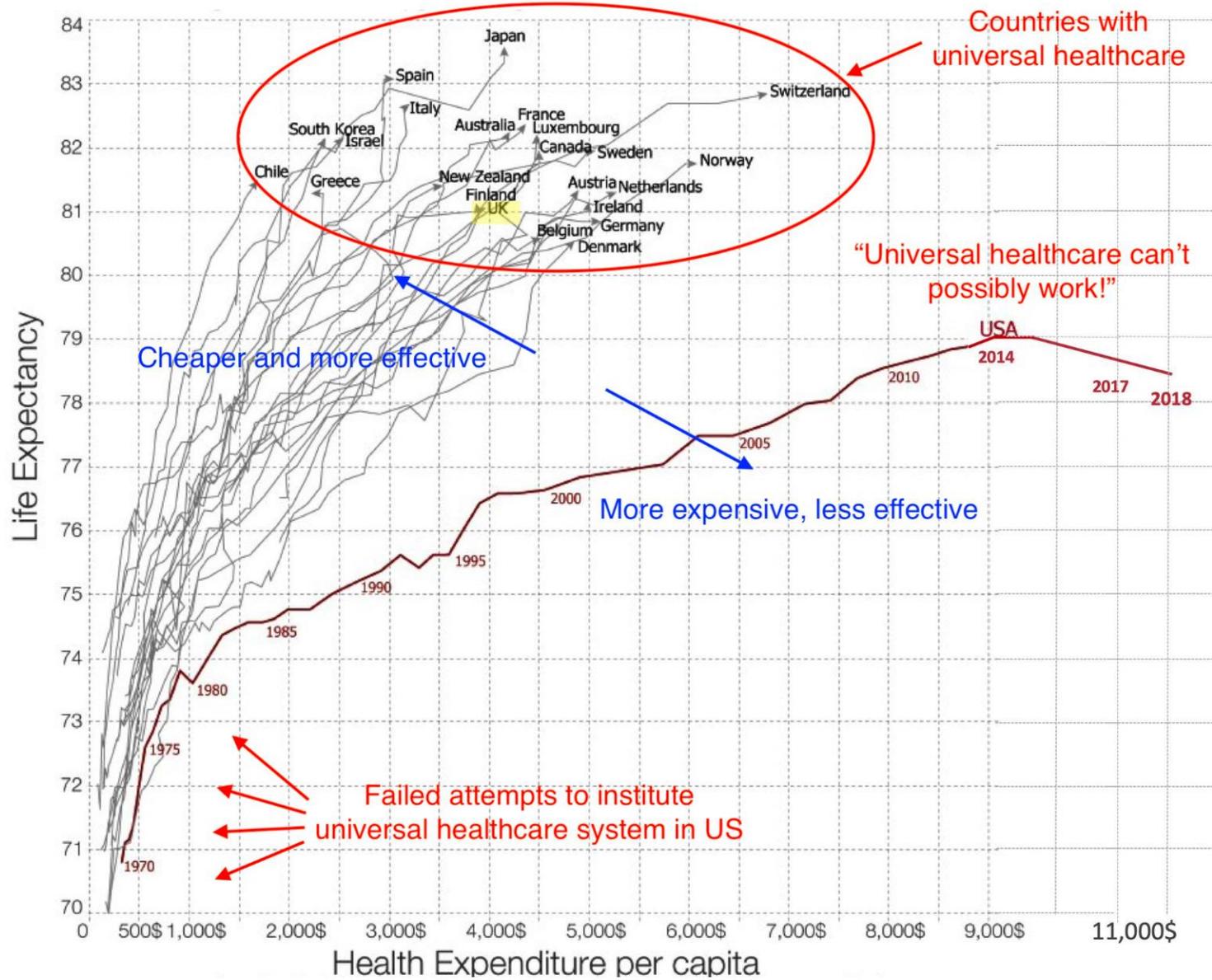
Notes: GDP = gross domestic product. Health care spending as a percentage of GDP. Performance scores are based on standard deviation calculated from the nine-country average that excludes the US. See "How We Conducted This Study" for more detail.
Data: Spending data are from OECD for the year 2022 and 2023 (updated in July 2024).

Americans live the shortest lives and have the most avoidable deaths.



Note: To normalize performance scores across countries, each score is the calculated standard deviation from a nine-country average that excludes the US. See “How We Conducted This Study” for more detail.

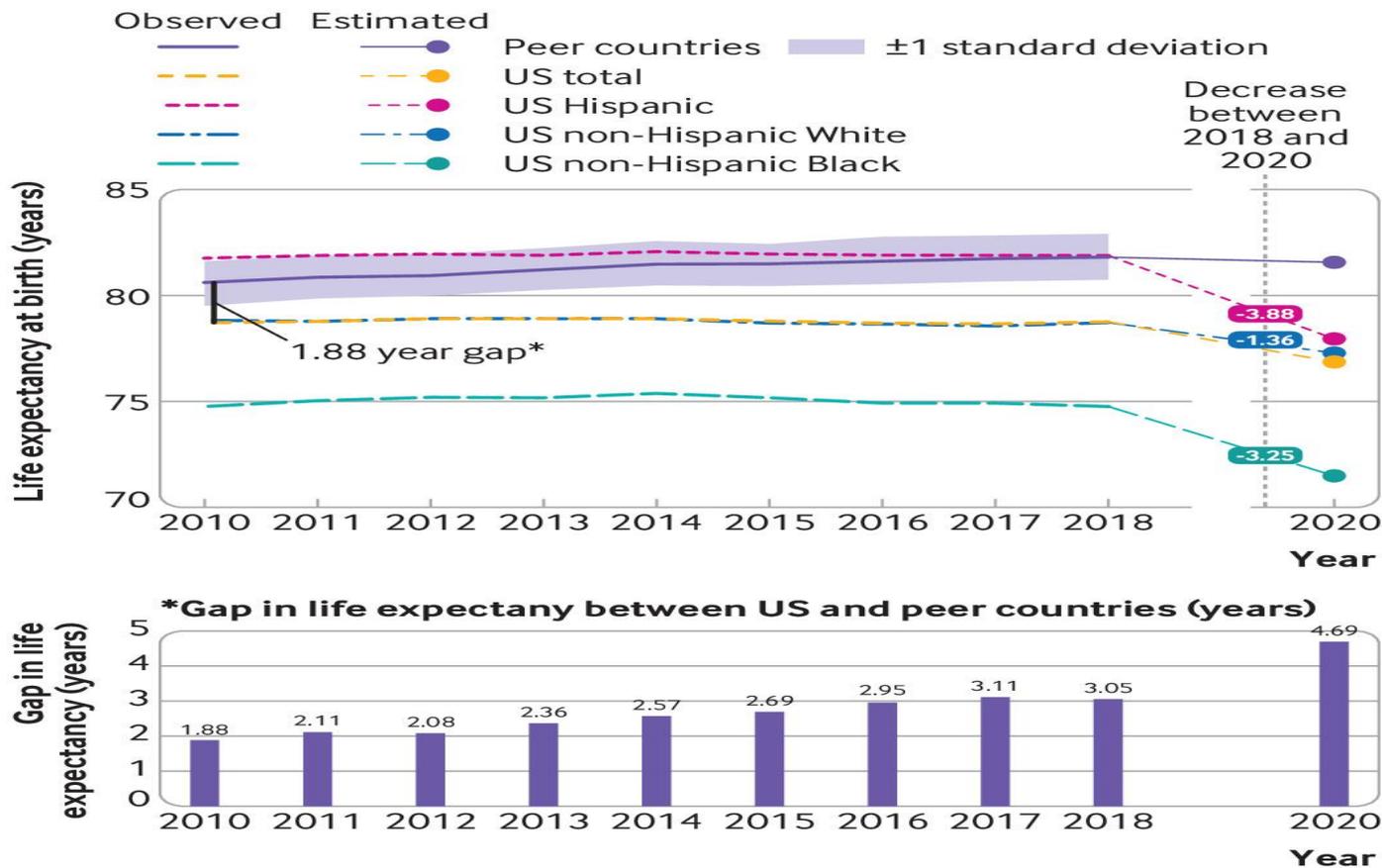
Data: Commonwealth Fund analysis.



Outcomes are Related to Easily Measurable Factors

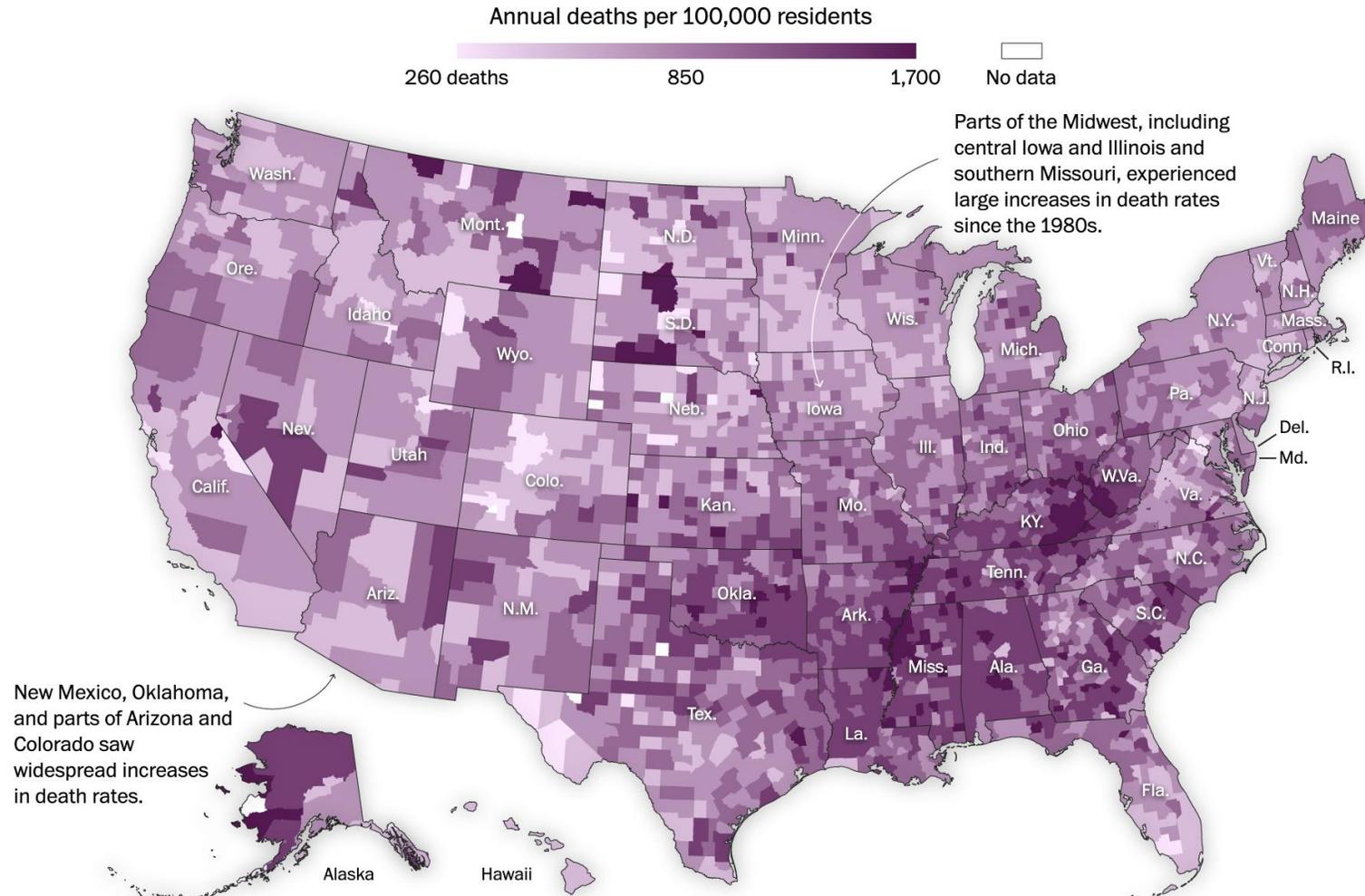
- “Traditional disparities”
 - Sex, gender, race, ethnicity
- “Social determinants”
 - Wealth, education
- Geography (“zip code trumps genetic code”)
 - Rural status is biggest changing factor
 - Urban low resource neighborhoods

Life expectancy at birth in the United States, by race and ethnicity, and in peer countries for years 2010-18 and 2020.



Where adults in their prime are dying

Deaths of adults 35 to 64 are concentrated in the nation's interior, including Appalachia, the Mississippi Delta and parts of the Midwest. In recent decades, death rates have been rising in the interior while declining in coastal regions.



Note: Age-adjusted death rates by counties for 2015-2019.

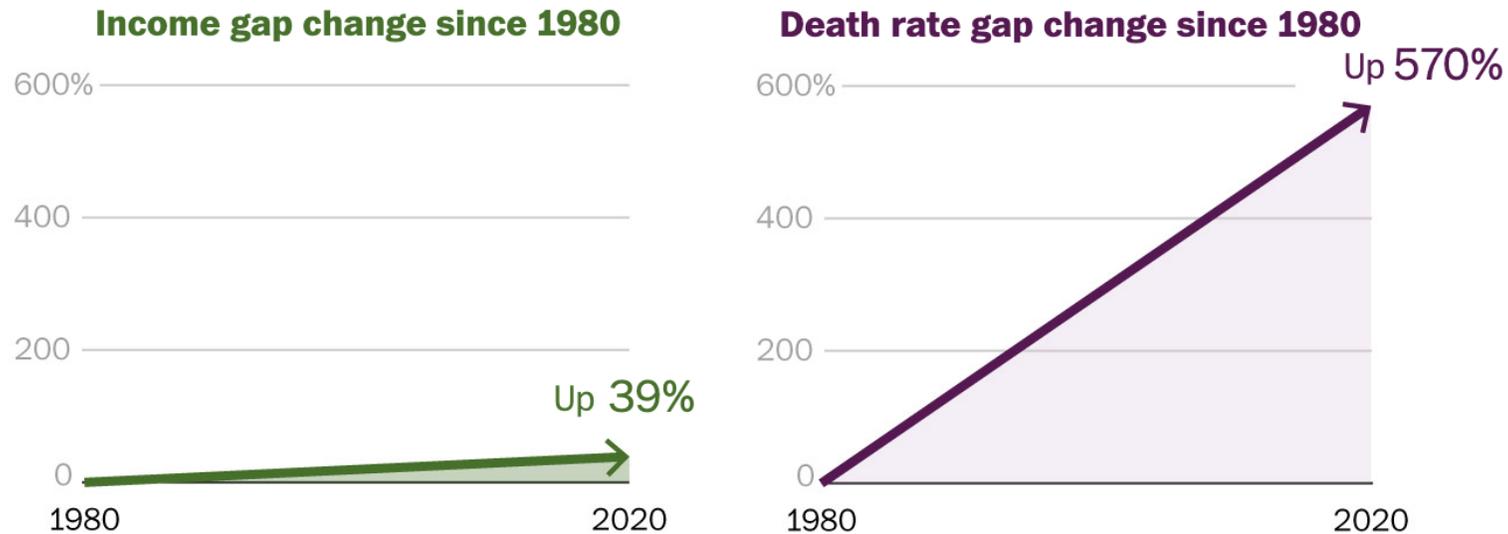
Source: Centers for Disease Control and Prevention

<https://www.washingtonpost.com/health/interactive/2023/american-life-expectancy-dropping/>
<https://www.washingtonpost.com/health/2023/10/02/takeaways-us-life-expectancy-crisis/>

Death gap widening between rich and poor

The Post compared death rates for people living in the poorest 10 percent of counties to rates for people living in the wealthiest 10 percent of counties over the past four decades. In that time, the gap between rich and poor death rates grew significantly wider, with rich communities' death rates improving for many years while poor areas largely stayed the same and then worsened. Death rates also grew many times faster than the difference in income between the poorest and richest areas.

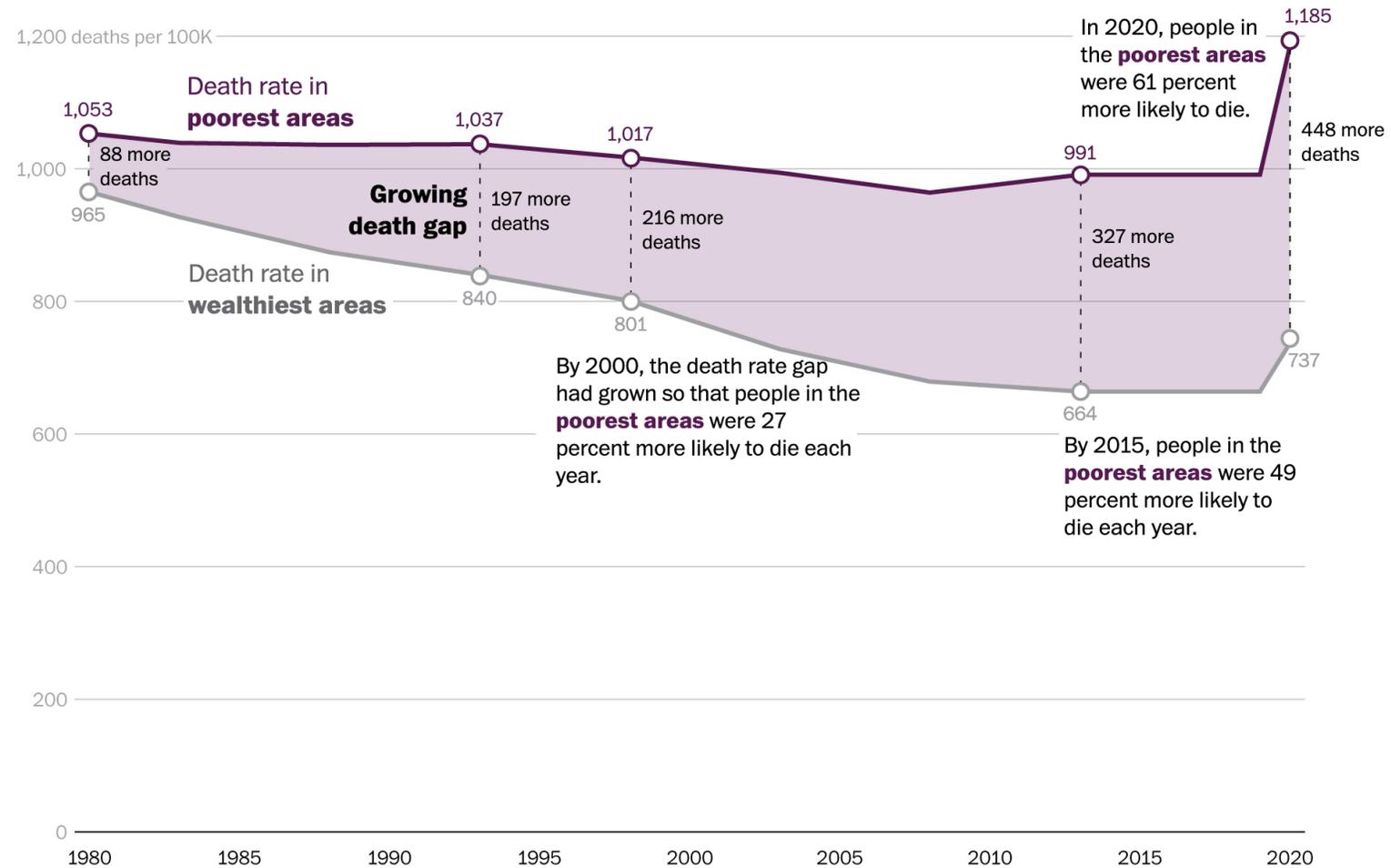
GROWING GAPS BETWEEN RICHEST AND POOREST



SMALL DEATH GAP HAS GROWN WIDE

Death rates of poorest and richest counties

In the early 1980s, people in the poorest areas were 9 percent more likely to die each year, with 88 more deaths per 100,000 people than their wealthy counterparts. That gap has widened significantly over time.



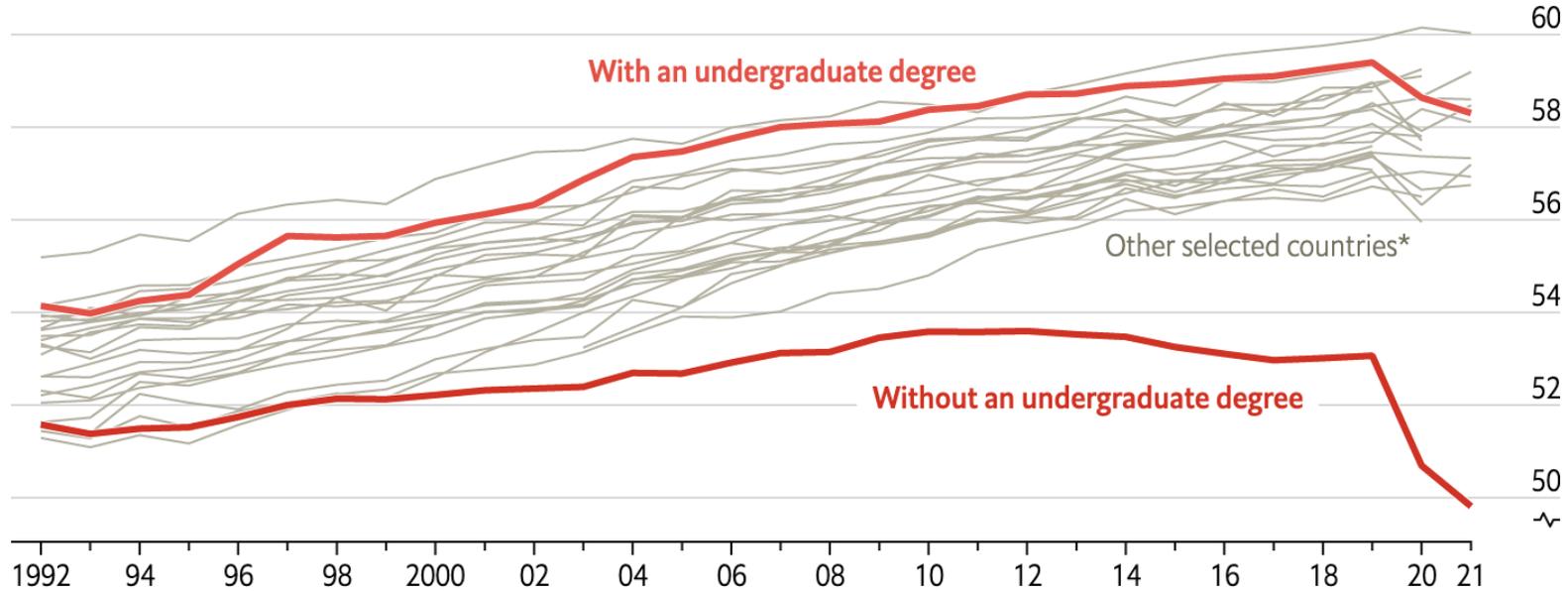
Note: Income differences are adjusted for inflation.

Sources: Centers for Disease Control and Prevention, U.S. Census Bureau

<https://www.washingtonpost.com/health/interactive/2023/american-life-expectancy-dropping/>
<https://www.washingtonpost.com/health/2023/10/02/takeaways-us-life-expectancy-crisis/>

Survival of the richest

United States, remaining life expectancy at age 25, years



*Australia, Austria, Belgium, Britain, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Israel, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, South Korea, Spain, Sweden and Switzerland
Sources: Human Mortality Database; "Accounting for the widening mortality gap between American adults with and without a BA", A. Case and A. Deaton, *BPEA*, [Graphic detail](#) | [Daily chart](#)

America's university graduates live much longer than non-graduates

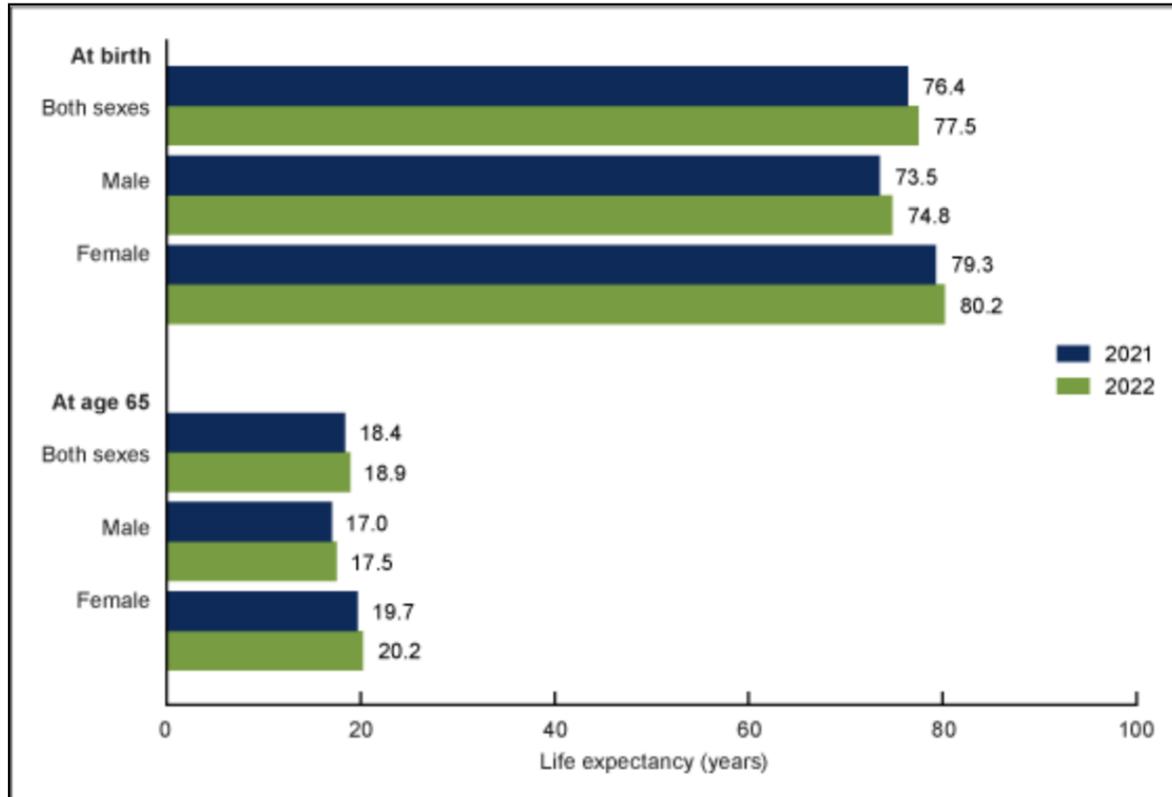
And the gap is widening

Data Looked Slightly Better in Last Year

- The big underlying health issues are basic issues, most of which are amenable to known interventions
- And many of which are preventable with fundamental attention to health habits
 - Tobacco, exercise, blood pressure, diet, adherence and persistence to effective medicines (most of which are generic)

US Life Expectancy Improved Slightly in Most Recent Data

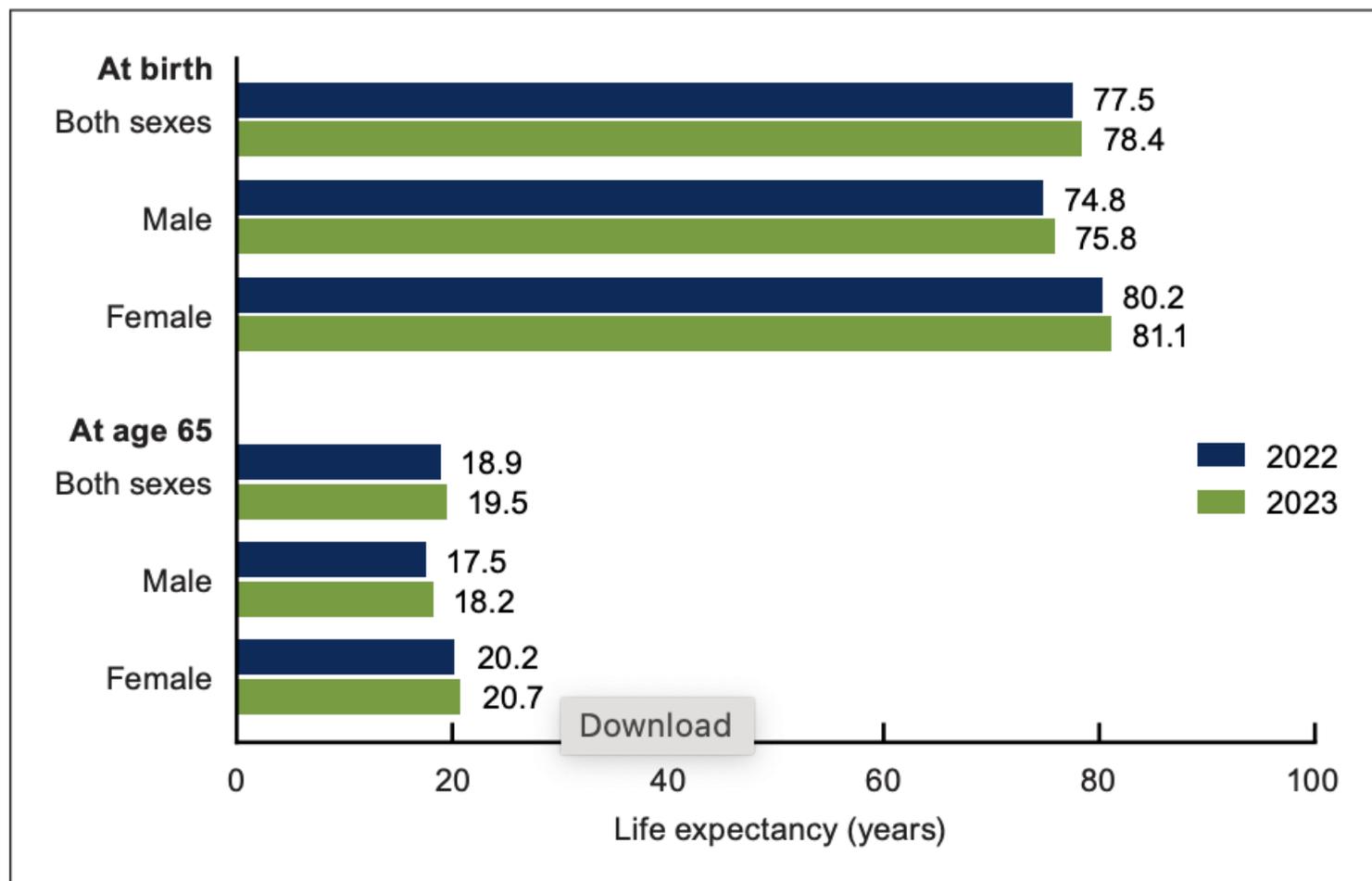
Figure 1. Life expectancy at birth and age 65, by sex: United States, 2021 and 2022



Note: [Access data table for Figure 1](#) .

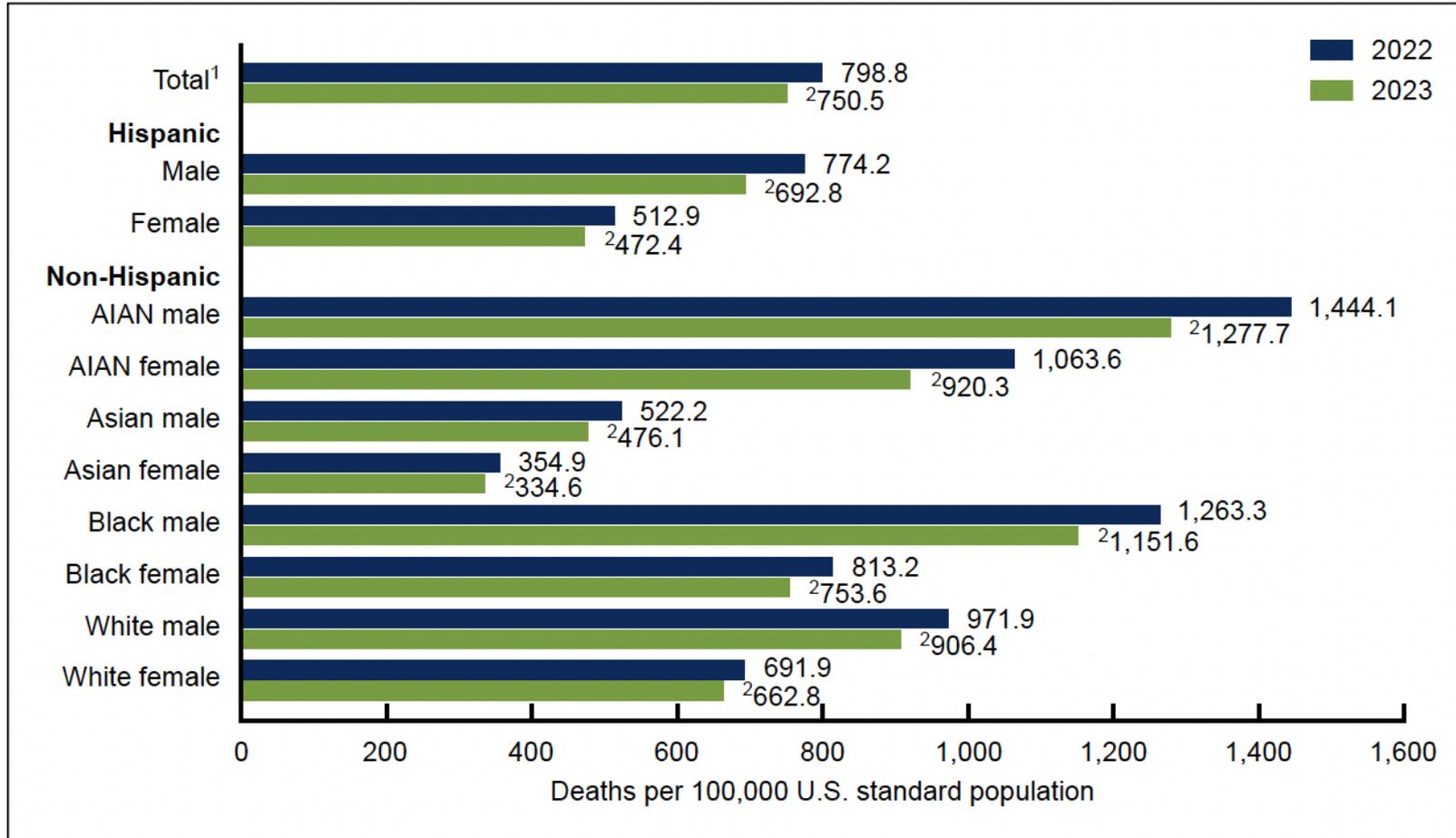
SOURCE: National Center for Health Statistics, National Vital Statistics System, mortality data file.

Figure 1. Life expectancy at birth and age 65, by sex: United States, 2022 and 2023



SOURCE: National Center for Health Statistics, National Vital Statistics System, mortality data file.

Figure 2. Age-adjusted death rate, by race and Hispanic origin and sex: United States, 2022 and 2023



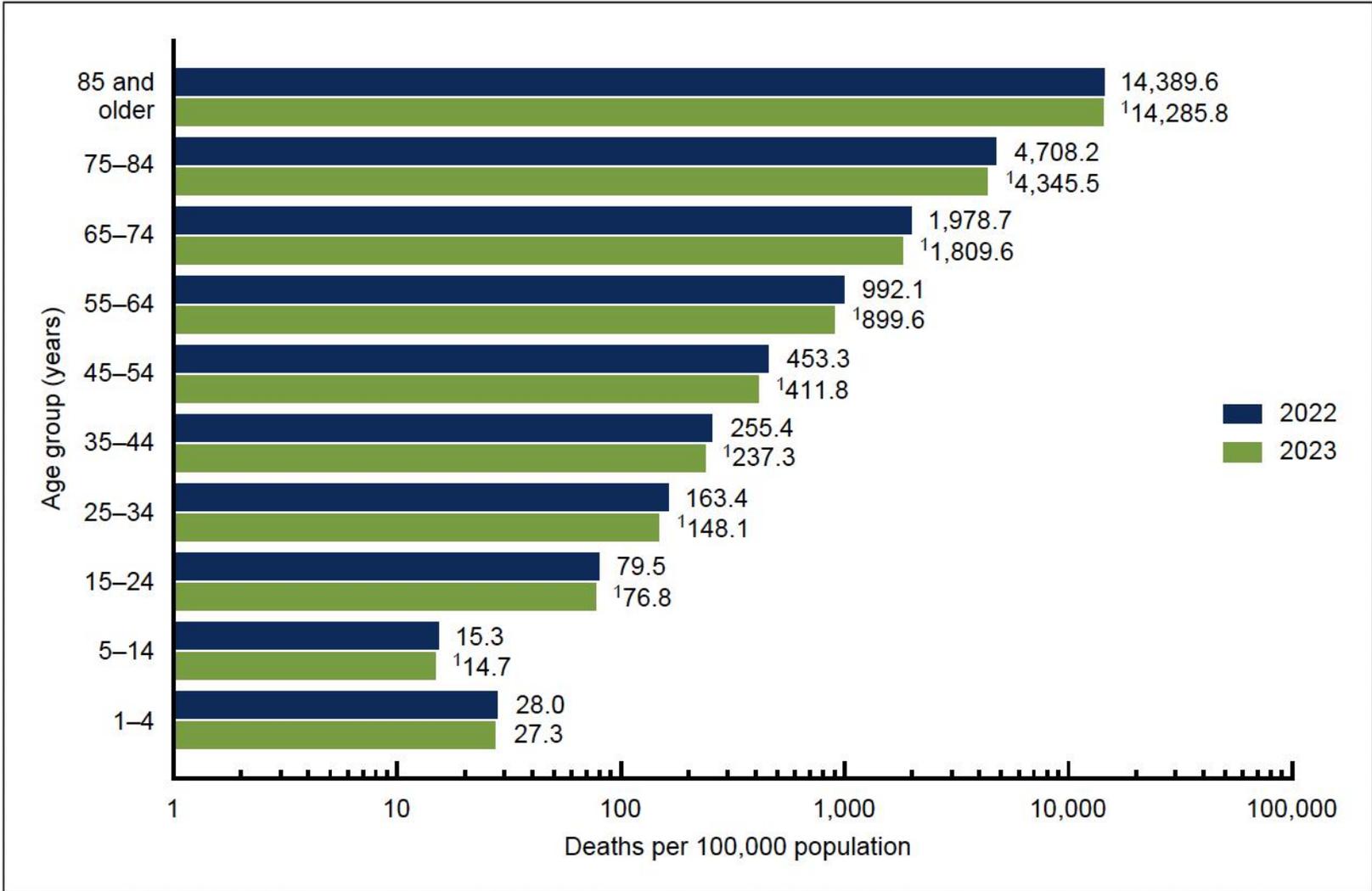
¹Includes races and origins not shown separately.

²Statistically significant decrease from 2022 to 2023 ($p < 0.05$).

NOTES: AIAN is American Indian and Alaska Native. Race groups are single race. People of Hispanic origin may be of any race. Data by race and Hispanic origin are adjusted for race and Hispanic-origin misclassification on death certificates. Adjusted data may differ from data shown in other reports that have not been adjusted for misclassification on death certificates.

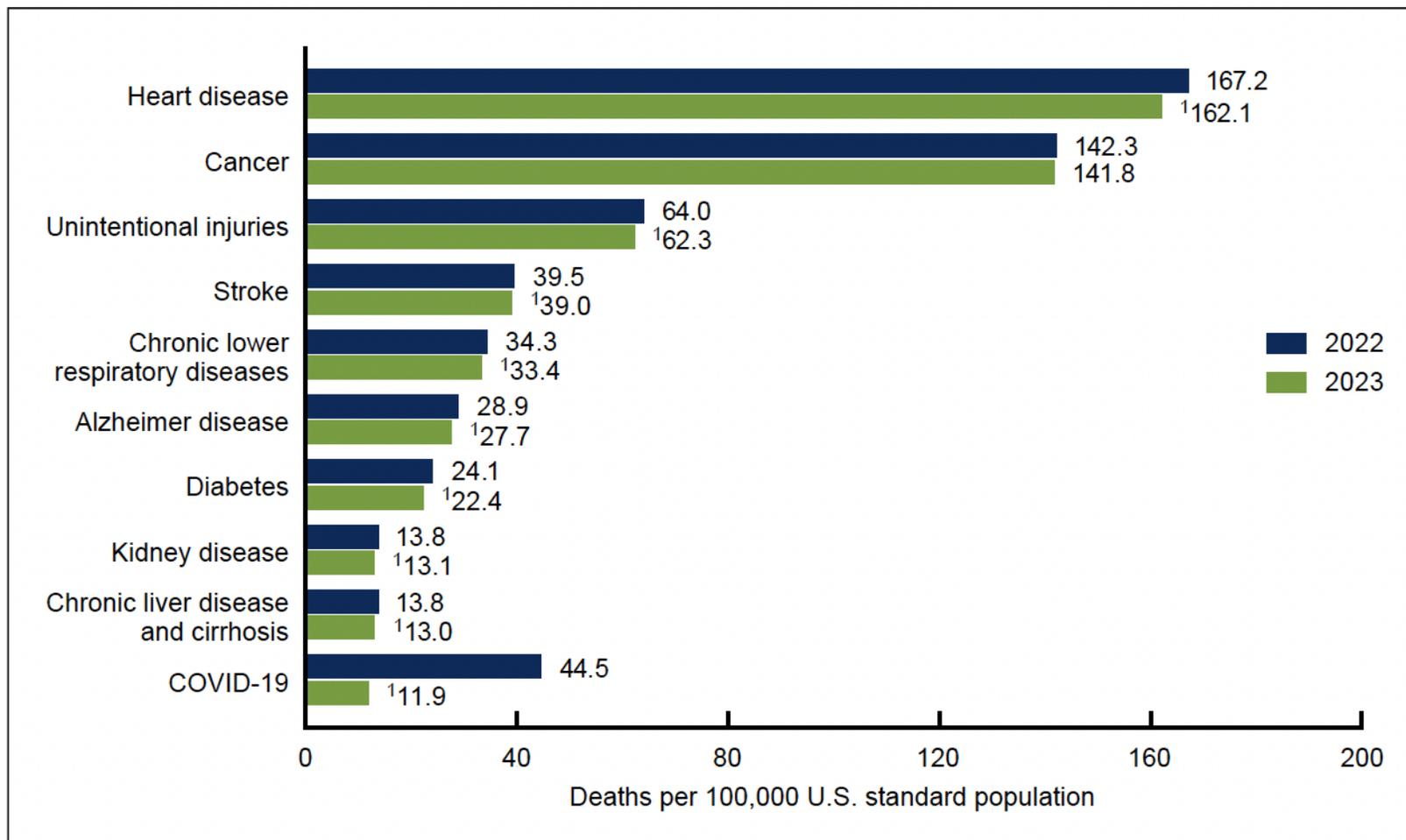
SOURCE: National Center for Health Statistics, National Vital Statistics System, mortality data file.

Figure 3. Death rate for age 1 year and older: United States, 2022 and 2023



¹Statistically significant decrease from 2022 to 2023 ($p < 0.05$).
 NOTES: Rates are plotted on a logarithmic scale. Data table for Figure 3 includes the number of deaths.
 SOURCE: National Center for Health Statistics, National Vital Statistics System, mortality data file.

Figure 4. Age-adjusted death rate for the 10 leading causes of death in 2023: United States, 2022 and 2023

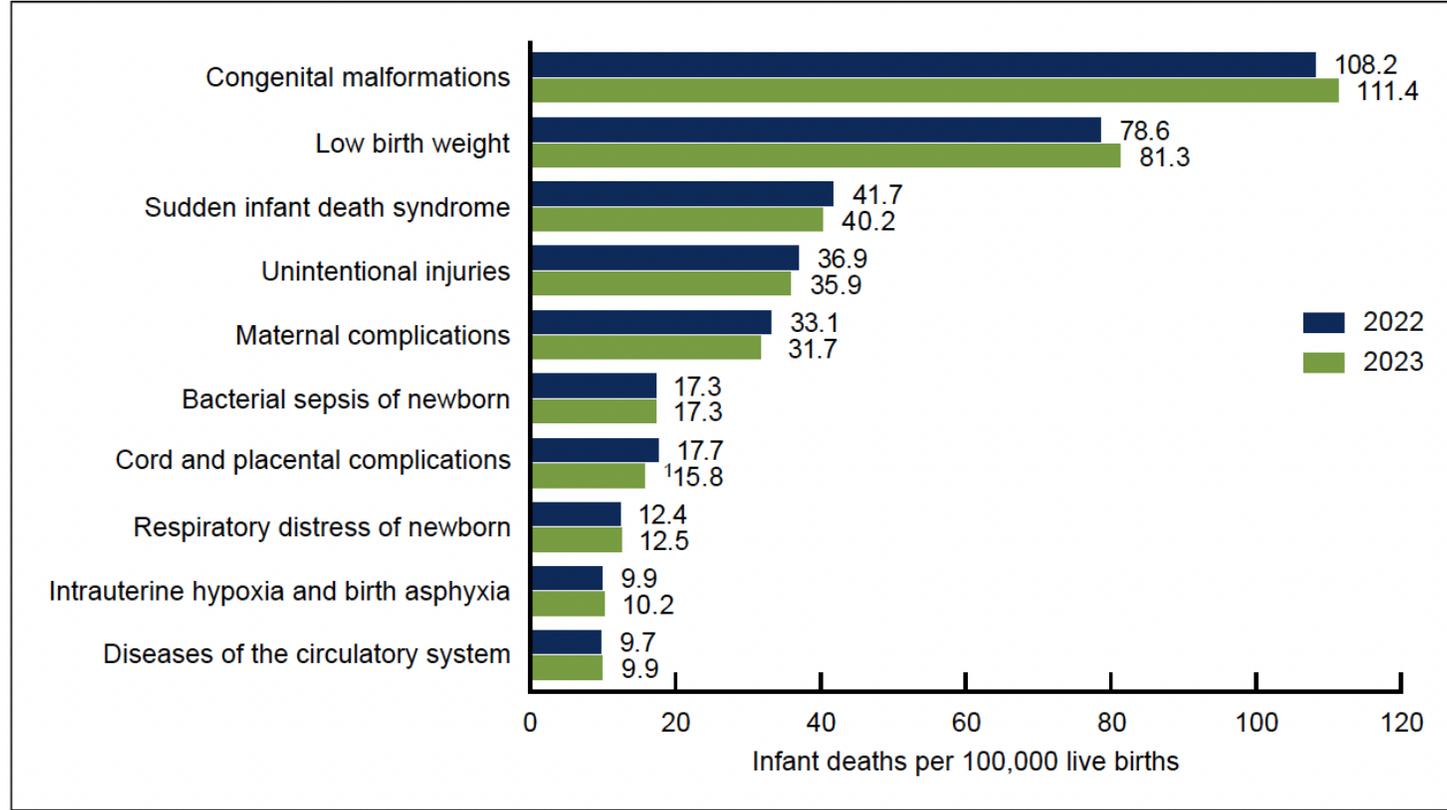


¹Statistically significant decrease from 2022 to 2023 ($p < 0.05$).

NOTES: A total of 3,090,964 resident deaths were registered in the United States in 2023. The 10 leading causes of death accounted for 70.9% of all U.S. deaths in 2023. Causes of death are ranked according to number of deaths in 2023. Rankings for 2022 data are not shown. Data table for Figure 4 includes the number of deaths for leading causes and the percentage of total deaths.

SOURCE: National Center for Health Statistics, National Vital Statistics System, mortality data file.

Figure 5. Infant mortality rate for the 10 leading causes of infant death in 2023: United States, 2022 and 2023



¹Statistically significant decrease from 2022 to 2023 ($p < 0.05$).

NOTES: A total of 20,145 deaths occurred in children younger than age 1 year in the United States in 2023, with an infant mortality rate of 560.2 infant deaths per 100,000 live births. The 10 leading causes of infant death in 2023 accounted for 65.3% of all infant deaths in the United States. A total of 20,553 infant deaths occurred in 2022, with an infant mortality rate of 560.4 infant deaths per 100,000 live births. Causes of death are ranked according to number of deaths in 2023. Rankings for 2022 data are not shown. Data table for Figure 5 includes the number of deaths in children younger than age 1 year for leading causes of infant death and the percentage of total infant deaths.

SOURCE: National Center for Health Statistics, National Vital Statistics System, mortality data file.



**Americans don't feel that the
healthcare system cares about them**

How Americans Feel About Their Health Today



Elmo @elmo · Jan 29

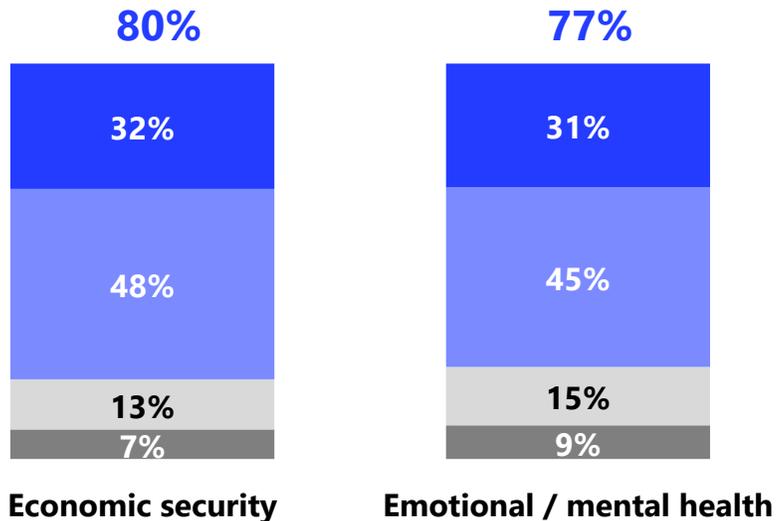
Elmo is just checking in! How is everybody doing?

To best solve issues affecting the well-being of future generations in the US, what specific areas should we prioritize?

Importance of investing in...

Prioritize (6-10, NET)

- 10 Highest priority
- 6-9 More priority
- 5 Neutral
- 0-4 No or Less priority



SURGEON GENERAL'S WARNING
Parents are consistently more likely to report experiencing high levels of stress compared to other adults.



The Harris Poll

PARENTS WERE SIGNIFICANTLY MORE LIKELY THAN OTHER ADULTS TO SAY

NO ONE UNDERSTANDS HOW STRESSED OUT THEY ARE



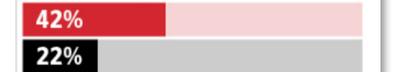
STRESS MAKES IT HARD FOR THEM TO FOCUS



MOST DAYS THEIR STRESS IS COMPLETELY OVERWHELMING



THEY ARE SO STRESSED THEY FEEL NUMB



66% Americans Agree, "I have to be responsible for my health because **no one else seems to care**"
(Gen Z: 56%, MLS: 77%, Gen X: 67%, Boomers: 63%)

52% Americans Say following social media health and wellness trends is **more accessible** than trying to connect with medical professionals
(Gen Z: 54%, MLS: 62%, Gen X: 55%, Boomers: 38%)



Yet, Our System Isn't Providing Necessary Support

What Patients Want, But Don't Always Receive

- Preventive care that's accessible for everyone
- Greater coordination of care between providers
- Transparent billing / easier appointments
- Seamless access to medical records / histories

70% Americans Report the healthcare system **isn't meeting their needs**

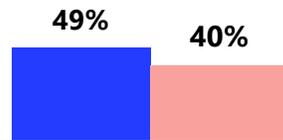
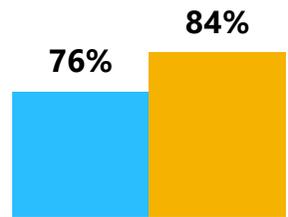
40% Americans Give the U.S. healthcare system **an A or B rating** (10%, 30%, respectively)

51% Americans **Directly feel the effects** of healthcare worker shortages (e.g., cancellations, delays, etc.)

Preventative Healthcare Should Be A Priority

Gap Occurs As Patients Don't Receive The Partnership They Want

■ Patients ■ Providers ■ Wants Partnership ■ Has Partnership



U.S.

U.S. Patients



As Healthcare Becomes Increasingly Out Of Reach

44% Americans

Have **skipped/delayed care** in the past two years, with 40% saying the reason was **concern about cost**

51% Americans

Couldn't pay off an unexpected **\$5,000** health care out-of-pocket expense

Worries Extend Into Retirement Considerations

66% Americans

Are **terrified of what healthcare costs** may do to their retirement plans

69% Americans with Chronic Conditions

Don't have a financial plan **on how to pay** for healthcare costs in retirement



AI Might Be Okay, But We Really Want Humans

Technology For Longevity

- 72% globally want advanced technology to **live longer.**
- 26% of Americans expect AI advancements in health care **to add over a decade to their lifespan.**

Leveraging Technology To Attain Balance

- 77% globally are interested in **using AI** to help **their well-being** and to **monitor burnout & stress.**

Monitoring Clinician Burnout With GenAI

- 91% of providers **feel positive** about GenAI for administrative tasks.
- Yet, 53% of Americans think the healthcare system **cares more about AI innovation** than improving patient experiences.

Keeping “Humans” In Health

- 92% of Americans say “P.A.s **should be allowed to provide care to the fullest extent** of their education, training, and experience.”
- 91% think fully utilizing P.A.s **improves patient health.**



For Better American Health, Partnerships Need To Be Built Between People & Institutions

90% Americans

Say **fixing the healthcare system requires everyone** – patients, doctors, experts, etc.

86% Americans

Are **ready to work** with their doctors and health professionals **to create change** in our healthcare

Yet...
→

57% Americans

Worry there **won't be systemic change** in healthcare for many years

(BIPOC: 61%, MLS: 60%)

One key area of focus?

Preventative care

86% Say we need to **shift the health system** from treatment **to prevention**

71% Say they would **be healthier** if they had access to **better preventative care**



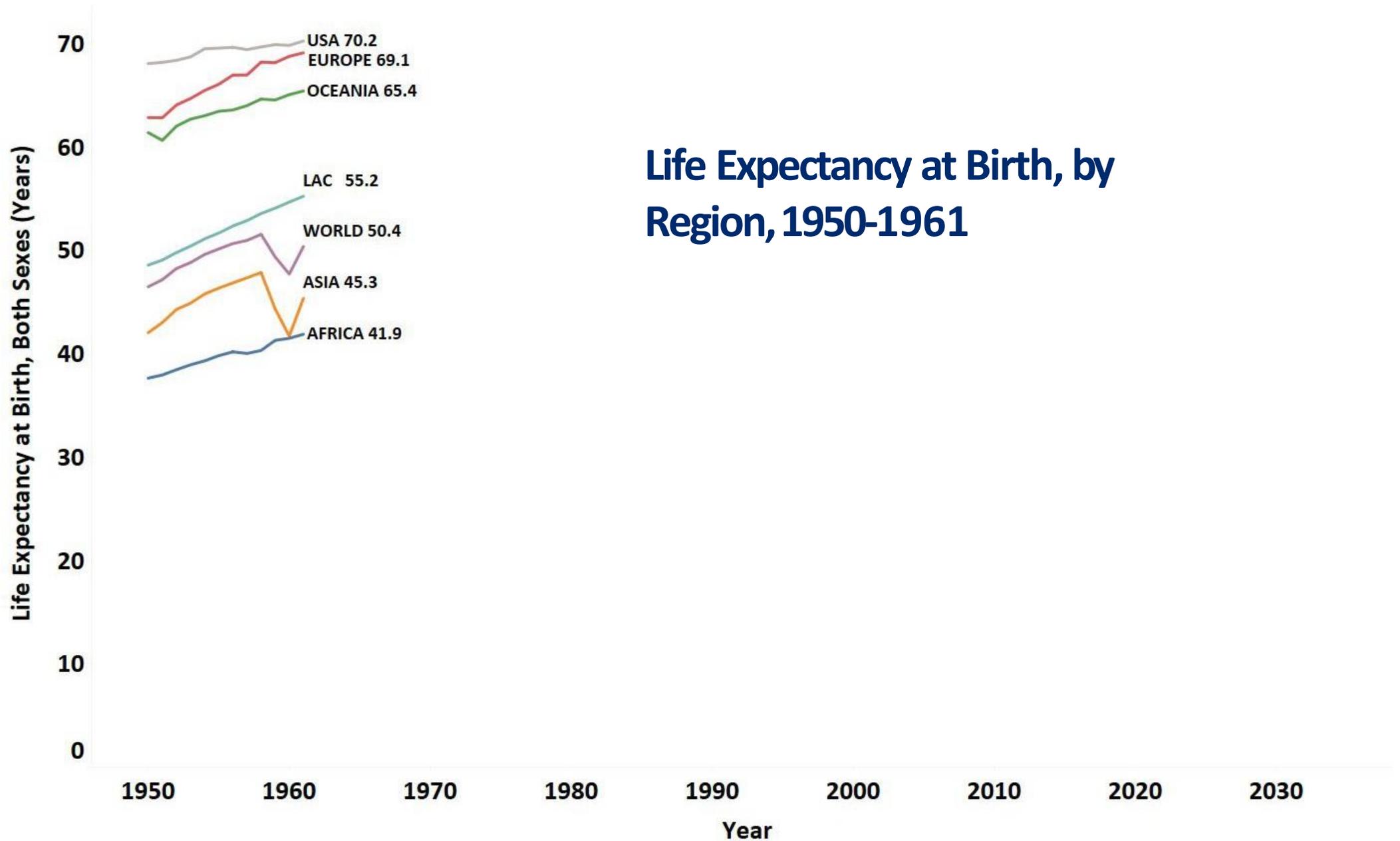
Primary Care is a Critical Force

- Countries with primary care systems achieve equal or better health status at much less cost
- USAID has done a “natural experiment” of investing in primary care in low income countries with excellent results



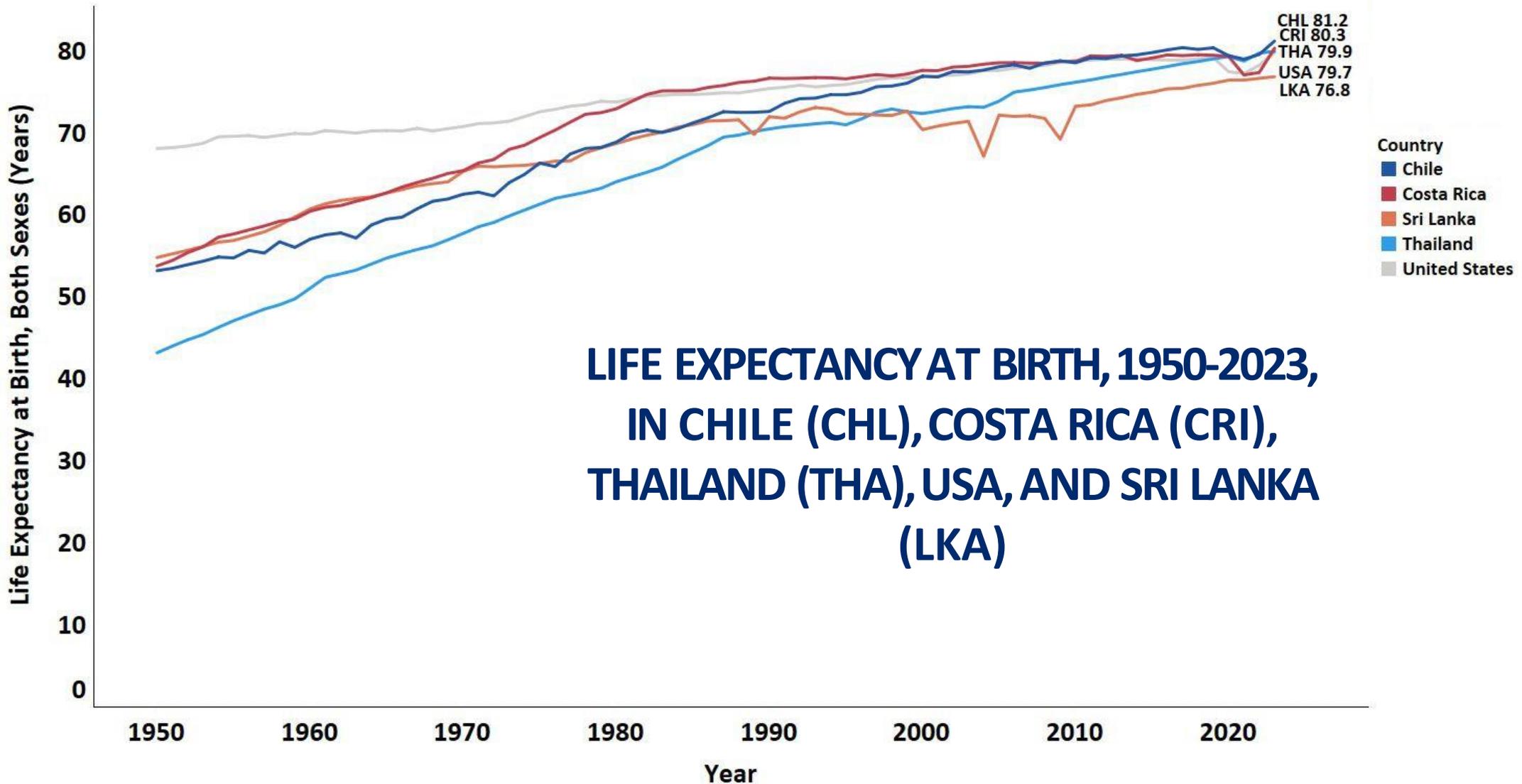
USAID, 2024

GLOBAL HEALTH FOCUS: THE MASSIVE GAP IN SURVIVAL



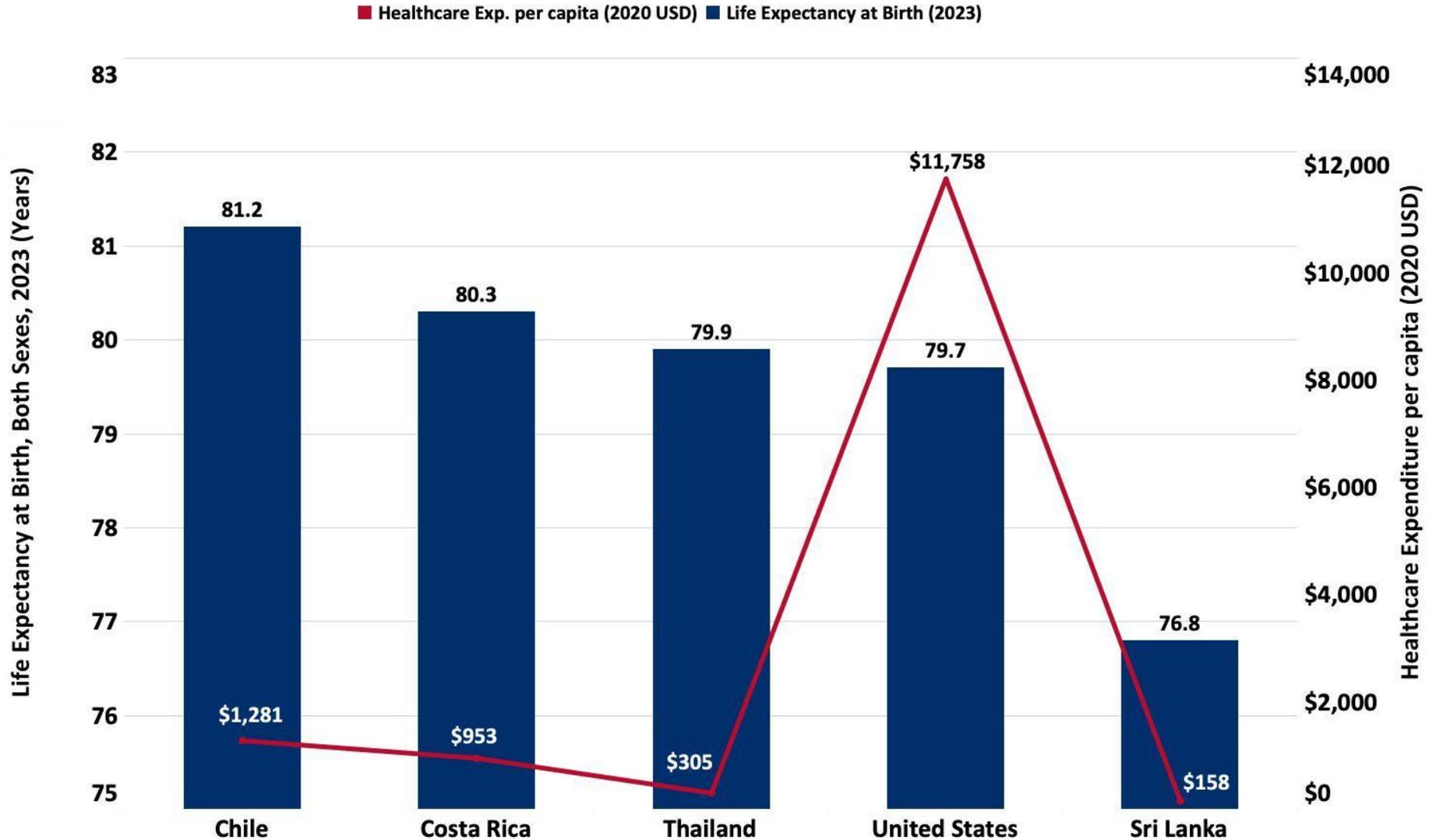
Life Expectancy at Birth, by
Region, 1950-1961

UNEXPECTEDLY, SOME USAID PARTNER COUNTRIES CAME TO MATCH OR EVEN EXCEED US LIFESPAN



**LIFE EXPECTANCY AT BIRTH, 1950-2023,
IN CHILE (CHL), COSTA RICA (CRI),
THAILAND (THA), USA, AND SRI LANKA
(LKA)**

COUNTRIES ARE MATCHING US LIFE EXPECTANCY WITH AS LITTLE AS \$300 PER CAPITA FOR HEALTH



Sources: World Bank, United Nations

THE ROLE OF PRIMARY HEALTH CARE IN DELIVERING ESSENTIAL SERVICES AND IMPROVING MORTALITY

The Navrongo Randomized Trial in Ghana

Provided villages with a salaried community nurse with PHC training (e.g. FP, malaria, birth services) PLUS community outreach workers visiting every household.

Results:

 Increased immunization, facility childbirth, use of child illness services, contraception

 70% reduction in child mortality in 7 years, 50% in 3 years

Global Health Sci Pract 2013;1(1):117-133
Bull of the World Health Organization 2006;84:949-955



The Ethiopia Health Extension Program

Since 2002, the HEP employed 30,000 rural health extension workers to deliver basic health services through 18,000 health posts and home outreach on a national scale.

Results:

 Increased service availability to 80m+ people living in rural and pastoral areas who previously had not had access to basic healthcare services

 66% drop in under-five mortality¹

Ethiopia Demographic Health Survey data between 1990-2019

COSTA RICA'S UNIVERSAL PRIMARY CARE DESIGN

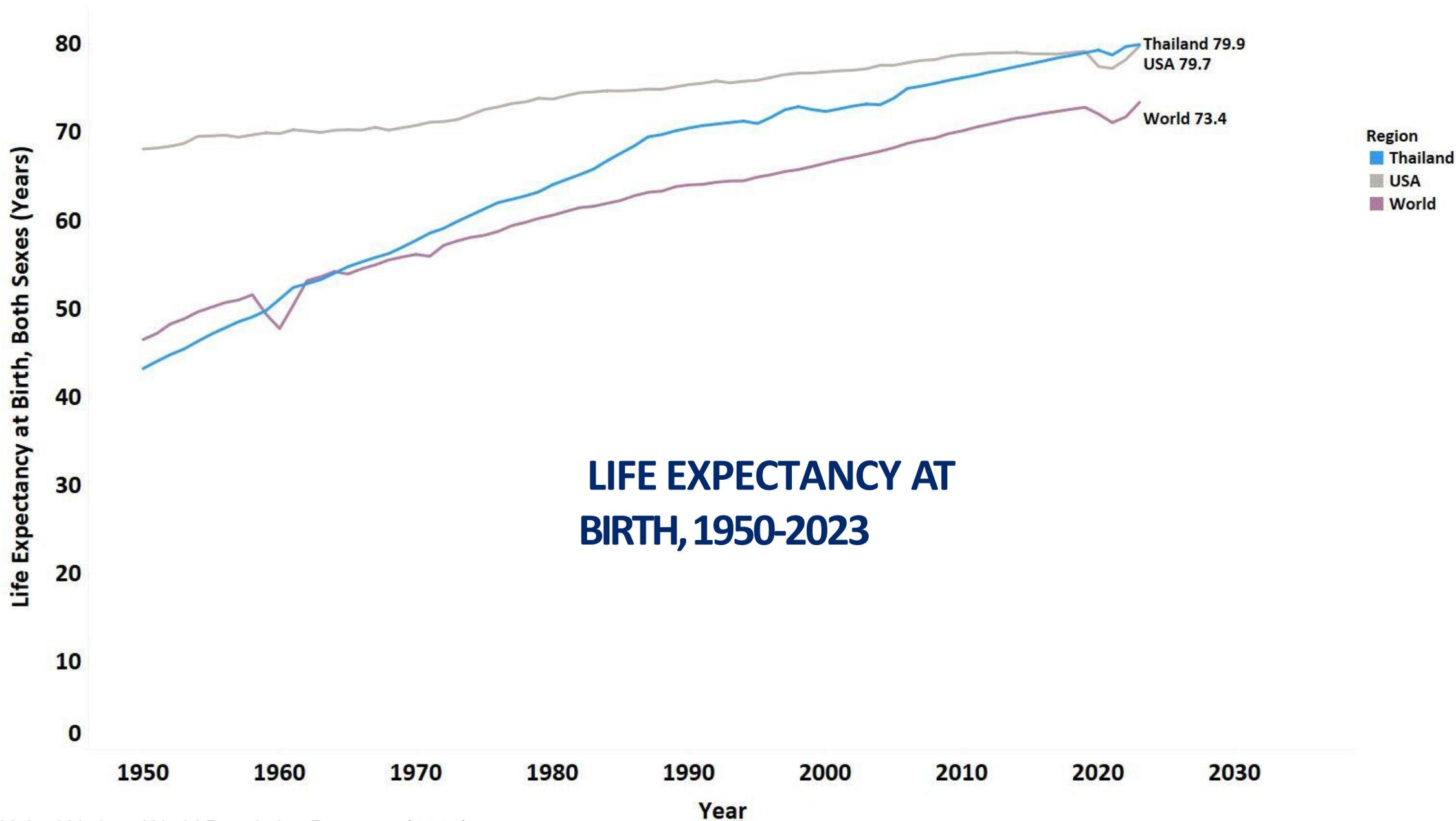
Costa Rica “Health Areas”

In 1995, Costa Rica began a staggered roll out of its World Bank-supported health reform to establish universal comprehensive, continuous, and coordinated primary care.



The Health Area intervention focused on **integrating public health services, preventive, and curative care within community-based primary clinics.** Involved geographically assigning Costa Ricans to specific units based on their place of residence (“**empanelment**”) and establishing **EBAIS teams with multidisciplinary capabilities and regular home-based outreach.**

THAILAND'S TRAJECTORY



LIFE EXPECTANCY AT BIRTH, 1950-2023

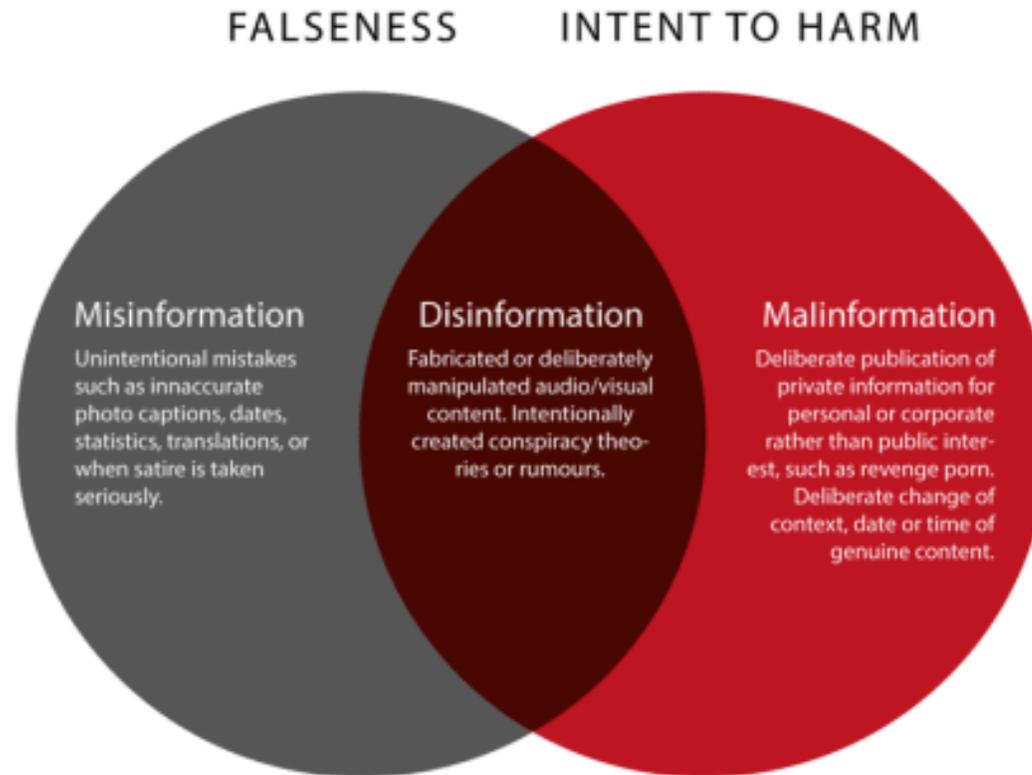
**Getting Reliable Information to
People is a Critical Role**

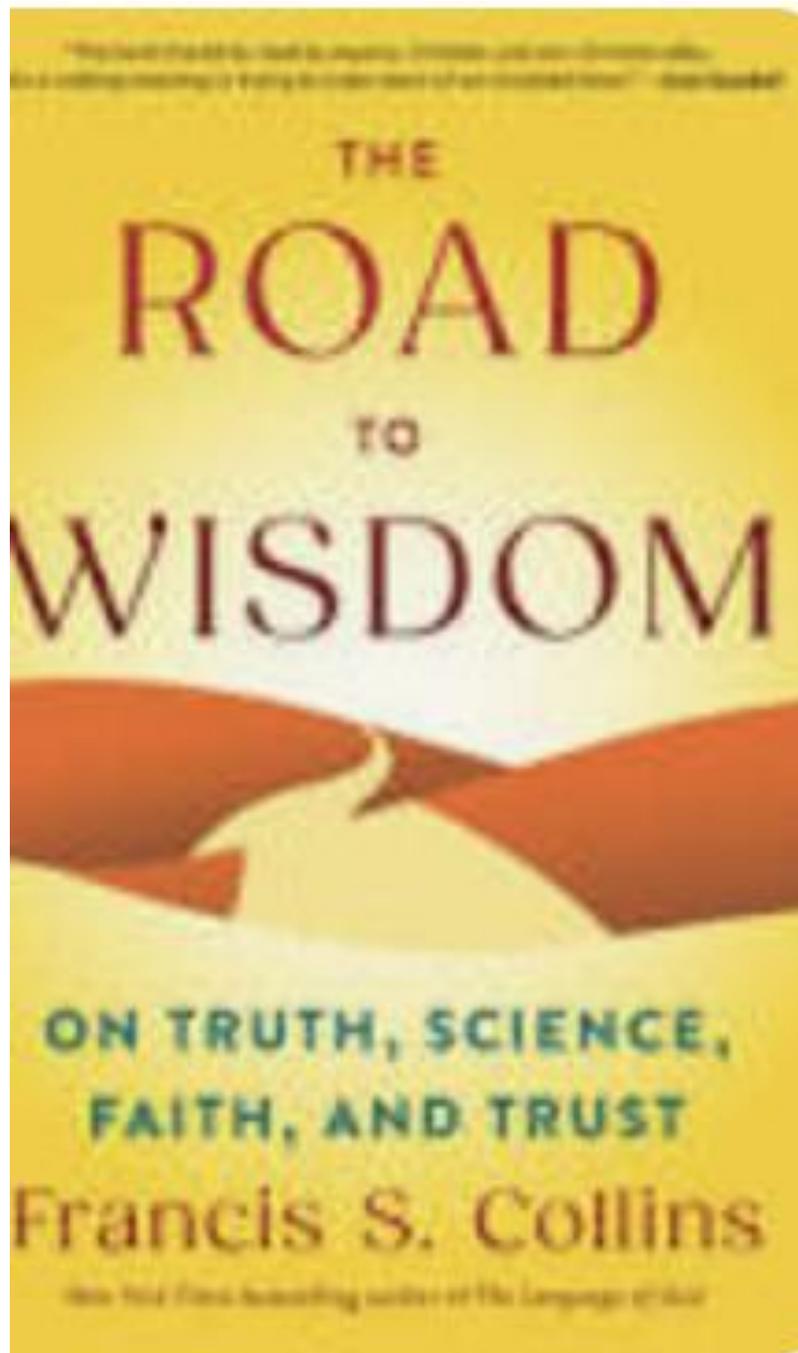
Varying forms of misinformation carry different levels of threat

“Disinformation,” is intended to mislead and is disseminated with knowledge that those who succumb to it could be harmed

“Malinformation” is which represents a purposeful effort to harm others directly by spreading incorrect information.

TYPES OF INFORMATION DISORDER





THE DEADLY RISE OF ANTI- SCIENCE

A Scientist's Warning

PETER J. HOTEZ, MD, PhD

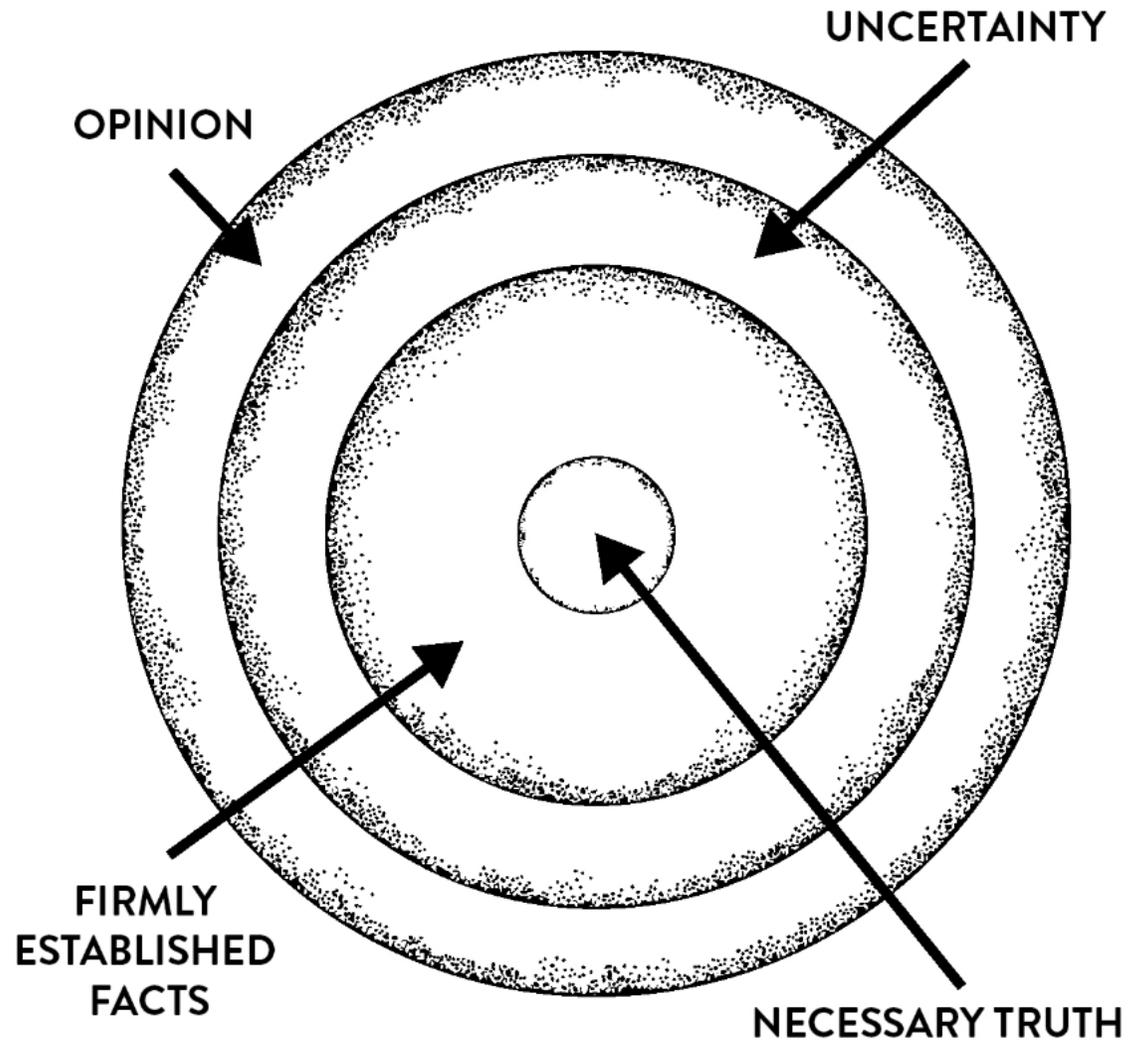
"Masterful and provocative." —Mustafa Suleyman
#1 *New York Times* bestselling author of SAPIENS

Yuval Noah
Harari



Nexus

A Brief History of Information Networks
from the Stone Age to AI



Church or organized religion



Banks



Public schools



Higher education



Medical system



A DECLINE IN TRUST ACROSS AN ARRAY OF INSTITUTIONS

Gallup regularly surveys Americans on their trust in a range of institutions, and most have shown steep declines. U.S. adults who said in 2024 they had a great deal or quite a lot of trust in:

A Community of Shared Standards



Doctors . . . ***claim authority,*** Not as individuals, but ***as members of a community that has objectively validated their competence.***

The professional offers judgments and advice, not as a personal act based on privately revealed or idiosyncratic criteria, but as a representative of ***a community of shared standards.***



Primary Care is Countercurrent to Several Dominant Trends in US Healthcare

- As long as the primary metric is profit, we will continue to see investment in profitable delivery approaches that cater to those with good coverage or wealth
- The fragmentation and suboptimization of the system create enormous chasms that are difficult for primary care to overcome, especially when combined with the current financial system

This Issue

Views **186,252** | Citations **39** | Altmetric **1153** | Comments **38**

Viewpoint

FREE

January 30, 2023

Salve Lucrum: The Existential Threat of Greed in US Health Care

Donald M. Berwick, MD, MPP¹

» [Author Affiliations](#) | [Article Information](#)

JAMA. 2023;329(8):629-630. doi:10.1001/jama.2023.0846

The deep pockets of health-harming industries

[Lancet Diabetes Endocrinol 2024](#)

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[S2213-8587\(24\)00196-7](https://doi.org/10.1016/S2213-8587(24)00196-7)

MEDICINE AND SOCIETY

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The Financialization of Health in the United States

Authors: Joseph Dov Bruch, Ph.D., Victor Roy, M.D., Ph.D., and Colleen M. Grogan, Ph.D. [Author Info & Affiliations](#)

Published January 10, 2024 | N Engl J Med 2024;390:178-182 | DOI: 10.1056/NEJMms2308188 | [VOL. 390 NO. 2](#)

On Suboptimization — Cadillac Care at the Mecca

Brendan M. Reilly, M.D.

After David had a stent put in his bile duct, the Tumor Board said he needed a Whipple procedure, but 3 weeks later the surgeon hadn't scheduled him, and a friend whose uncle died of pancreatic cancer said David should

go to the best place. *When you get on an airplane, she said, you want a pilot who does this every day.* So they called three famous cancer centers and interviewed surgeons who do Whipples all the time. David hoped for the place where it doesn't

snow, but that guy, when asked about his operative mortality, got huffy and hung up. The second place didn't "target the tumor" as Google recommended, so David favored the place whose surgeon agreed to see him immediately.

N ENGL J MED 382;7 NEJM.ORG FEBRUARY 13, 2020

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The New England Journal of Medicine

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Suboptimization

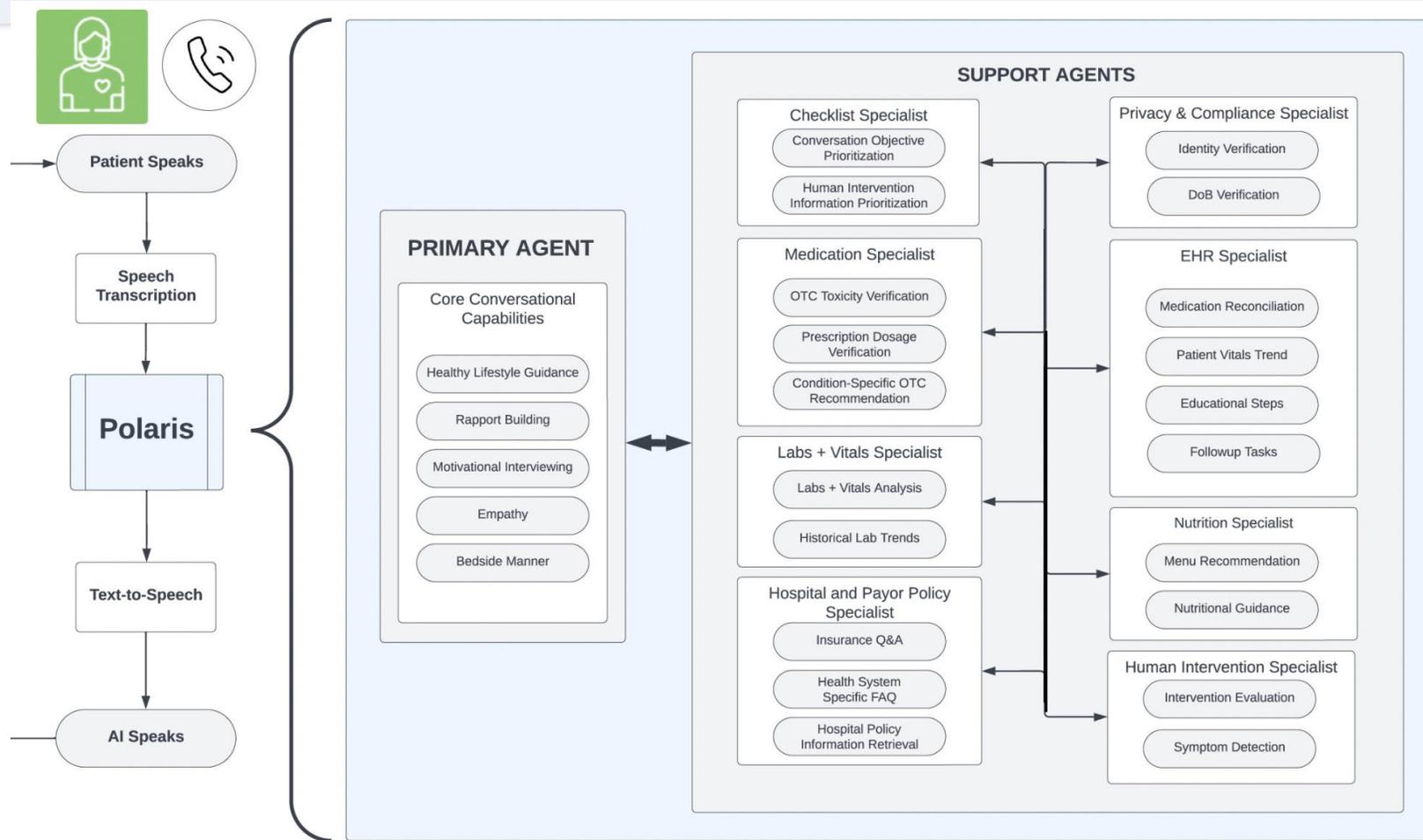
A consequence of failure to integrate is suboptimization: Suboptimization is a term that has been adopted for a common policy mistake.

It refers to the practice of focusing on one component of a total and making changes intended to improve that one component and ignoring the effects on the other components.

If home, primary care offices and digital health could be integrated....

- That would be an American solution to a problem that we have been unable to solve up until now

NVIDIA





“Technological solutions also tend to rise into society’s penthouses, while epidemics (diseases) seep into its cracks”

The Atlantic

SEPTEMBER 30, 2022

The Pandemic’s Legacy Is Already Clear

All of this will happen again.

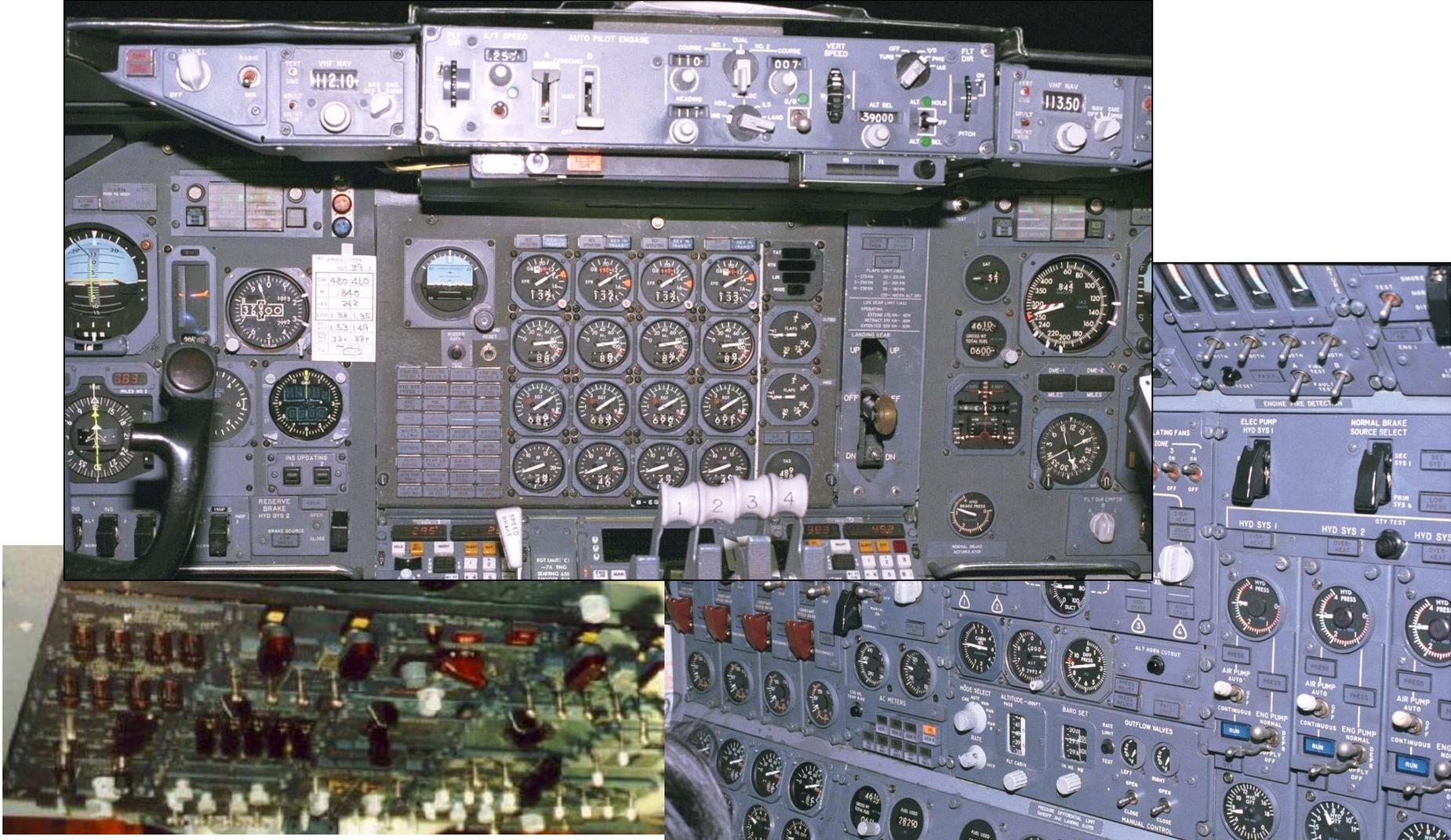
By Ed Yong



The Glass Cockpit Project

- In 1960's multiple gauges added to cockpit, causing cognitive overload for pilots
- NASA did massive project, yielding
 - Construct of the glass cockpit
 - Data standards
 - Standardized display of data
 - Autopilot for functions that could be automated, freeing pilot to perform integrative functions
- Doctor/patient pairs need a cockpit to enhance decision making by aggregating relevant information in a cognitively appealing format

Information Overload



The “Glass Cockpit”

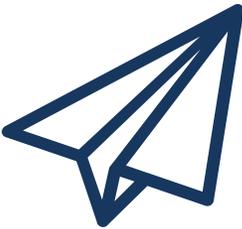


Transforming the Healthcare System

- No person should be left behind in healthcare
- Clinical care and evidence generation centered on the person not the system
- Health and wellness delivered at home and uniquely shaped experientially for the occupant
- Integrative medical devices and technology that are not interruptive, distracting and counter to the home experience are the way of the future
- Home is the frontier often neglected in device development and conceptualization but critical to their success

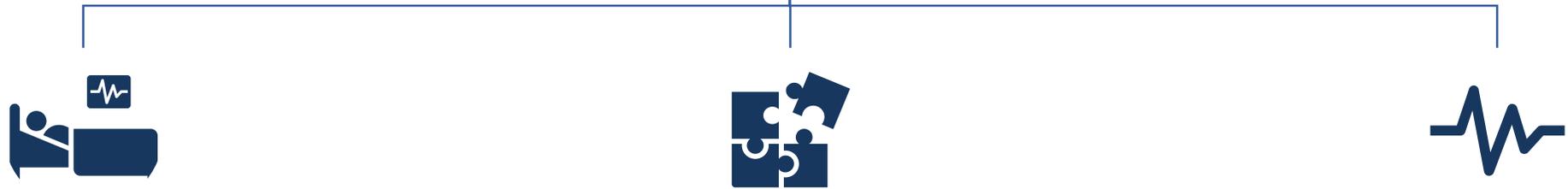


Home as a Healthcare Hub



CDRH is launching the co-creation of a **prototype home model**

- To facilitate innovation of integrated, consumer-friendly, medical-grade technology to deliver and expand access to first-class care at home
- In collaboration with an architectural firm, patient groups, healthcare providers, and medical device industry



Facilitate adaptation of existing devices and development of innovative new devices to nestle unobtrusively in the home environment

Foster the discussion of frameworks and identification of missing critical elements in a precompetitive space

Pilot effort in the clinical area of diabetes given marked racial, ethnic, and geographic disparities in prevalence and burden of disease

The combination of digitization & current health trends give us a fork in the road

Use digital technology to improve health for populations and individuals (rising tide raises all ships)

Use digital technology to segment the population to optimize finances in a balkanized fashion (magnifies disparities)

History of Digital Disruption



Company /Industry	Core Business	Transformational Change	Digital Disruption Enhance Existing Income Model?	Successful Internal Transformation?	Digital Disrupter
	Photographic Film & Paper	Digital Photography	NO	X	
	Selling Books from Stores	Online Book Orders	NO	X	
	Lending Money	ATMs and Online Banking	YES	✓	All Modern Banks
	Video Rental	Digital Streaming	NO	X	
	Fee-for-Service Health Care	Value-based, Digitally Enabled Medicine	NO	?	?
	Sell more medical products at higher prices	Value based reimbursement	NO	?	?

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