Connecting The Trends Health, Value & Digital

Brian Silverstein, MD
Chief Population Health Officer
Innovaccer

PREPARED FOR

The Governance Institute Leadership Conference
October 2023

Agenda

Health

Value

Digital

Smart Governance

NOW...Scientific Evidence on Effects of Smoking!

A MEDICAL SPECIALIST in making regular bi-monthly examinations of a group of people from various walks of life, 45 percent of this group have smoked Chesterfield for an average of over ten years.

After ten months, the medical specialist reports that he observed...

no adverse effects on the nose, throat and sinuses of the group from smoking Chesterfield.

First and Only Premium Quality Cigarette in Both Regular and King-Size

CONTAINS TOBACCOS OF BETTER QUALITY AND MILDER THAN ANY OTHER KING-SIZE CIGARETTE

MUCH MILDER CHESTERFIELD IS BEST FOR YOU

According to a recent Nationwide survey:

MORE DOCTORS SMOKE CAMELS THAN ANY OTHER CIGARETTE

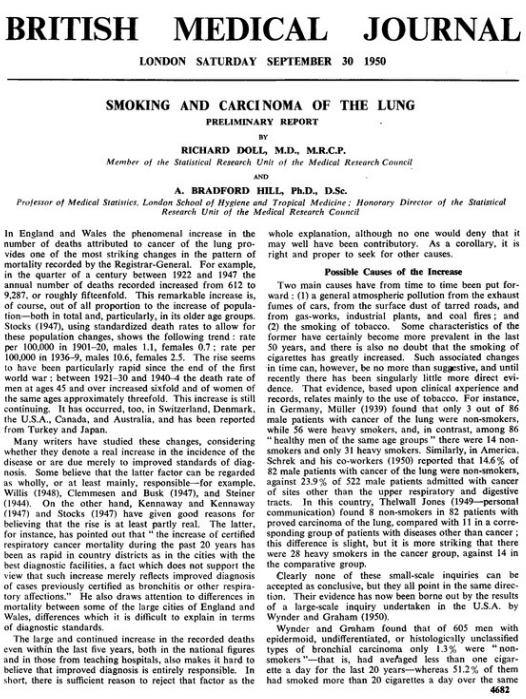
DOCTORS in every branch of medicine—113,597 in all—were queried in this nationwide study of cigarette preference. Three leading research organizations made the survey. The gist of the query was—What cigarette do you smoke, Doctor?

The brand named most was Camel.

The rich, full flavor and cool mildness of Camel's superb blend of costlier tobaccos seem to have the same appeal to the smoking tastes of doctors as to millions of other smokers. If you are a Camel smoker, this preference among doctors will hardly surprise you. If you're not—well, try Camels now.

CAMELS *Costlier Tobaccos*

Change is Slow - The Health Consequences of Smoking



BRITISH MEDICAL JOURNAL

LONDON SATURDAY SEPTEMBER 30 1950

SMOKING AND CARCINOMA OF THE LUNG

PRELIMINARY REPORT

BY

RICHARD DOLL, M.D., M.R.C.P.

Member of the Statistical Research Unit of the Medical Research Council

AND

A. BRADFORD HILL, Ph.D., D.Sc.

Professor of Medical Statistics, London School of Hygiene and Tropical Medicine; Honorary Director of the Statistical Research Unit of the Medical Research Council

In England and Wales the phenomenal increase in the number of deaths attributed to cancer of the lung provides one of the most striking changes in the pattern of mortality recorded by the Registrar-General. For example, in the quarter of a century between 1922 and 1947 the annual number of deaths recorded increased from 612 to 9,287, or roughly fifteenfold. This remarkable increase is, of course, out of all proportion to the increase of population—both in total and, particularly, in its older age groups. Stocks (1947), using standardized death rates to allow for these population changes, shows the following trend: rate per 100,000 in 1901–20, males 1.1, females 0.7; rate per 100,000 in 1936–9, males 10.6, females 2.5. The rise seems to have been particularly rapid since the end of the first world war; between 1921–30 and 1940–4 the death rate of men at ages 45 and over increased sixfold and of women of the same ages approximately threefold. This increase is still continuing. It has occurred, too, in Switzerland, Denmark, the U.S.A., Canada, and Australia, and has been reported from Turkey and Japan.

Many writers have studied these changes, considering whether they denote a real increase in the incidence of the disease or are due merely to improved standards of diagnosis. Some believe that the latter factor can be regarded as wholly, or at least mainly, responsible—for example, Willis (1948), Clemmesen and Busk (1947), and Steiner (1944). On the other hand, Kennaway and Kennaway (1947) and Stocks (1947) have given good reasons for believing that the rise is at least partly real. The latter, for instance, has pointed out that "the increase of certified respiratory cancer mortality during the past 20 years has been as rapid in country districts as in the cities with the best diagnostic facilities, a fact which does not support the view that such increase merely reflects improved diagnosis of cases previously certified as bronchitis or other respiratory affections." He also draws attention to differences in mortality between some of the large cities of England and Wales, differences which it is difficult to explain in terms of diagnostic standards.

The large and continued increase in the recorded deaths even within the last five years, both in the national figures and in those from teaching hospitals, also makes it hard to believe that improved diagnosis is entirely responsible. In short, there is sufficient reason to reject that factor as the whole explanation, although no one would deny that it may well have been contributory. As a corollary, it is right and proper to seek for other causes.

Possible Causes of the Increase

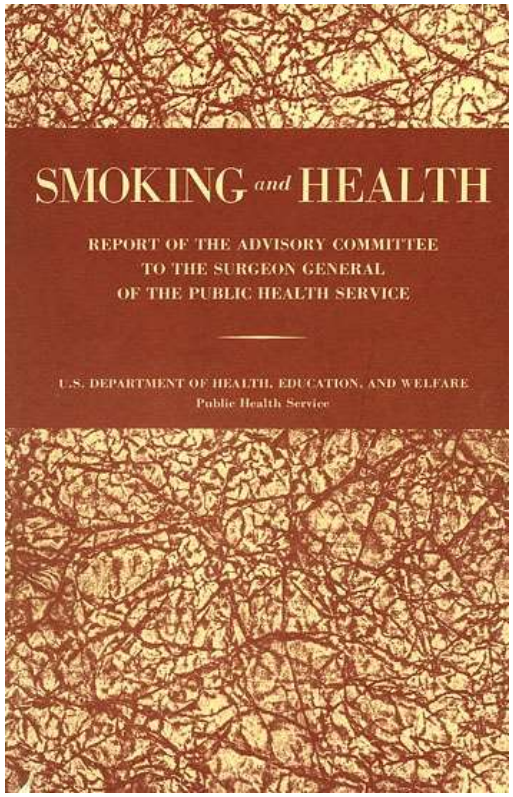
Two main causes have from time to time been put forward: (1) a general atmospheric pollution from the exhaust fumes of cars, from the surface dust of tarred roads, and from gas-works, industrial plants, and coal fires; and (2) the smoking of tobacco. Some characteristics of the former have certainly become more prevalent in the last 50 years, and there is also no doubt that the smoking of cigarettes has greatly increased. Such associated changes in time can, however, be no more than suggestive, and until recently there has been singularly little more direct evidence. That evidence, based upon clinical experience and records, relates mainly to the use of tobacco. For instance, in Germany, Müller (1939) found that only 3 out of 86 male patients with cancer of the lung were non-smokers, while 56 were heavy smokers, and, in contrast, among 86 "healthy men of the same age groups" there were 14 non-smokers and only 31 heavy smokers. Similarly, in America, Schrek and his co-workers (1950) reported that 14.6% of 82 male patients with cancer of the lung were non-smokers, against 23.9% of 522 male patients admitted with cancer of sites other than the upper respiratory and digestive tracts. In this country, Thelwall Jones (1949—personal communication) found 8 non-smokers in 82 patients with proved carcinoma of the lung, compared with 11 in a corresponding group of patients with diseases other than cancer; this difference is slight, but it is more striking that there were 28 heavy smokers in the cancer group, against 14 in the comparative group.

Clearly none of these small-scale inquiries can be accepted as conclusive, but they all point in the same direction. Their evidence has now been borne out by the results of a large-scale inquiry undertaken in the U.S.A. by Wynder and Graham (1950).

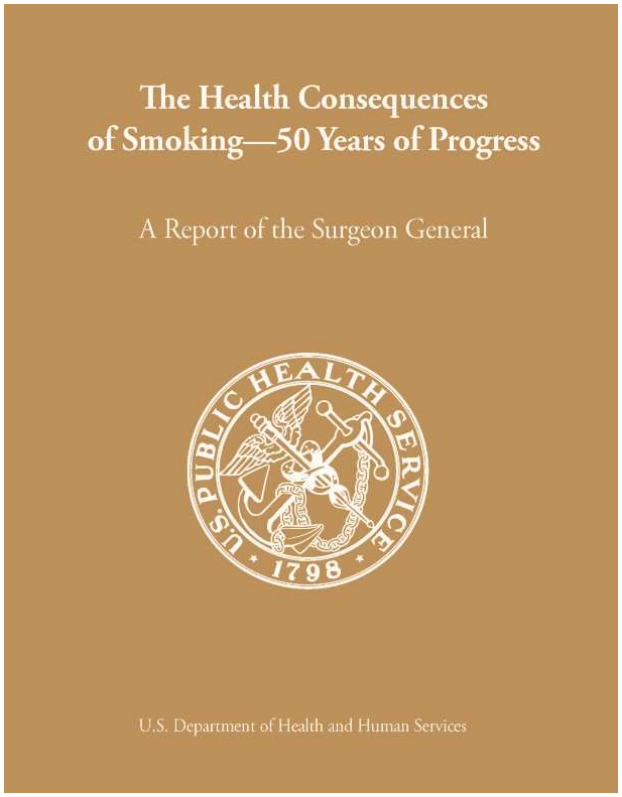
Wynder and Graham found that of 605 men with epidermoid, undifferentiated, or histologically unclassified types of bronchial carcinoma only 1.3% were "non-smokers"—that is, had averaged less than one cigarette a day for the last 20 years—whereas 51.2% of them had smoked more than 20 cigarettes a day over the same

4682

1950

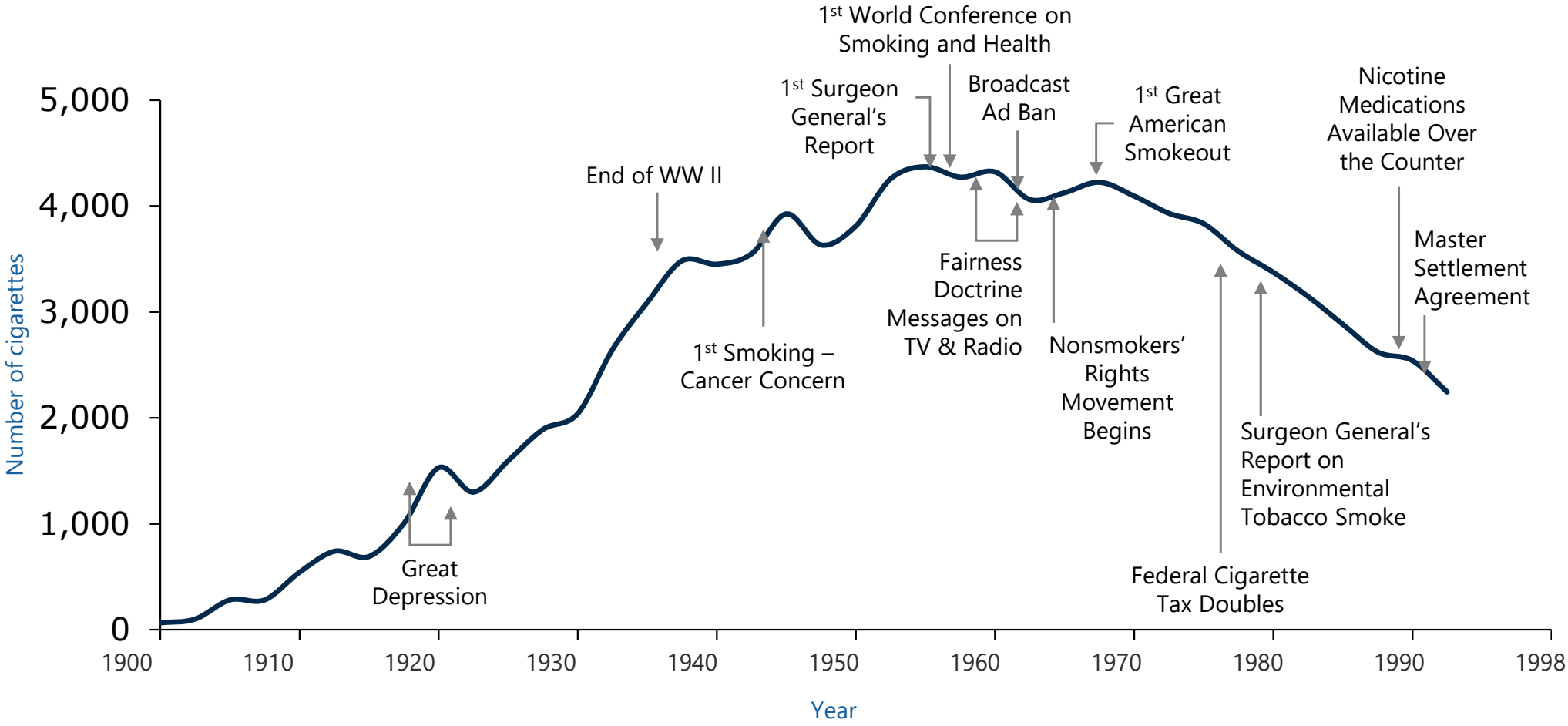


1964



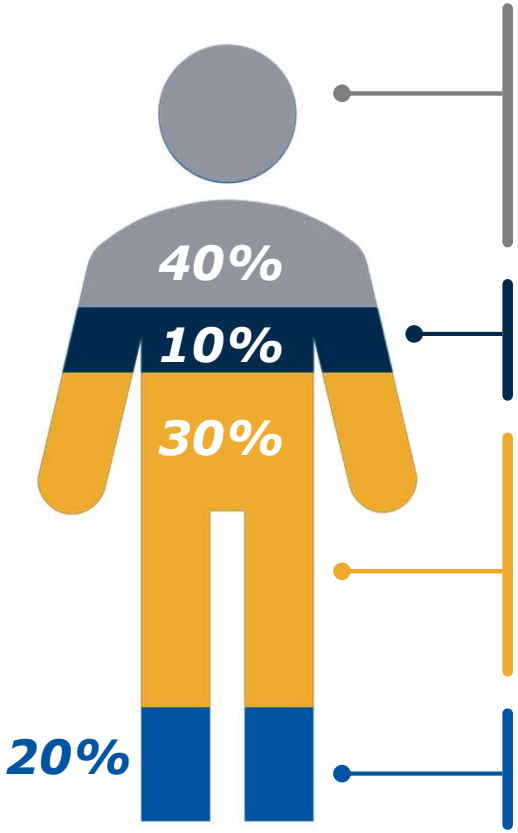
2014

Cigarette Consumption per Capita



Source: Hanson, Venturelli, and Fleckenstein, Drugs and Society, tenth edition. 2009

Improving Health Requires Addressing The Real Issues



Socioeconomic Factors

Education | Job status | Family Social Support | Income | Community Safety

Physical Environment

Socioeconomic Factors

Tobacco Use | Diet & Exercise | Alcohol Use | Sexual Activity

Health Care

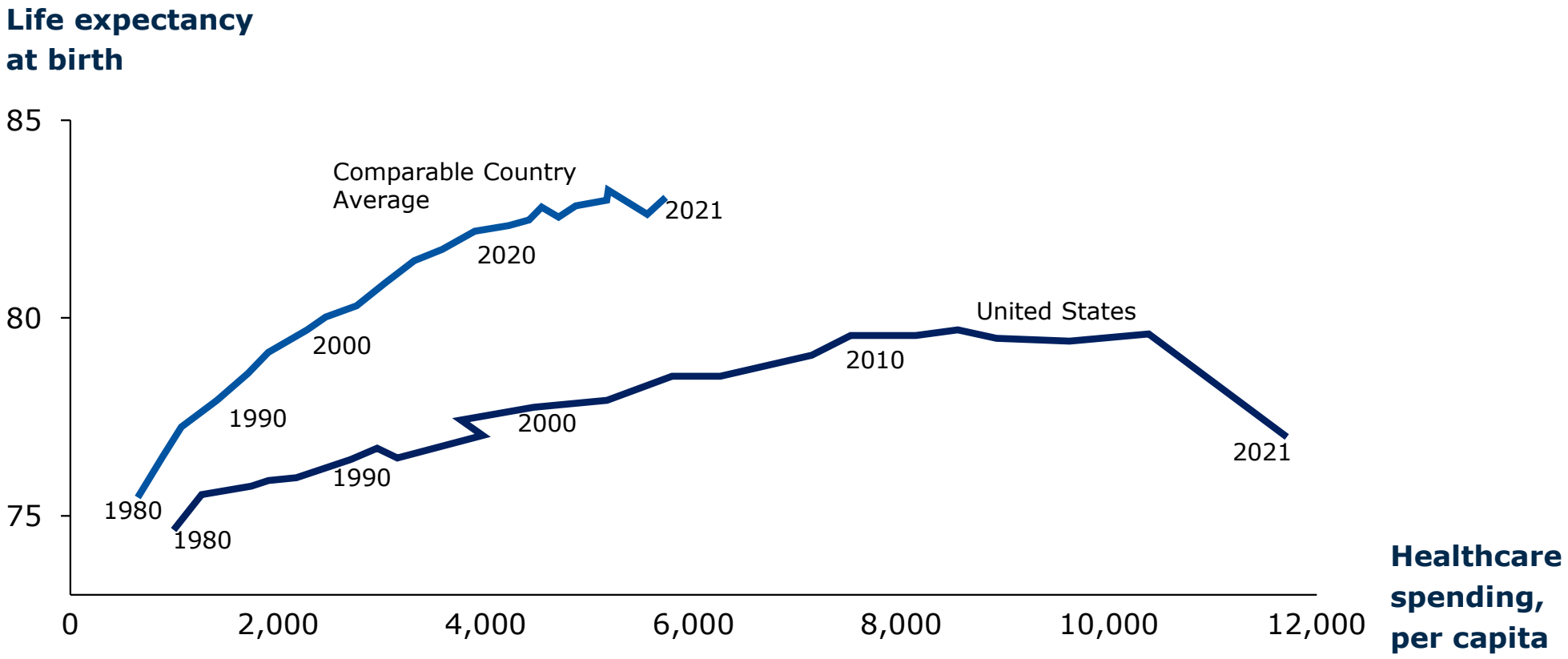
Access to Care Quality of Care

50% can be traced back to your zip code!

Only 20% include those moments in a healthcare environment

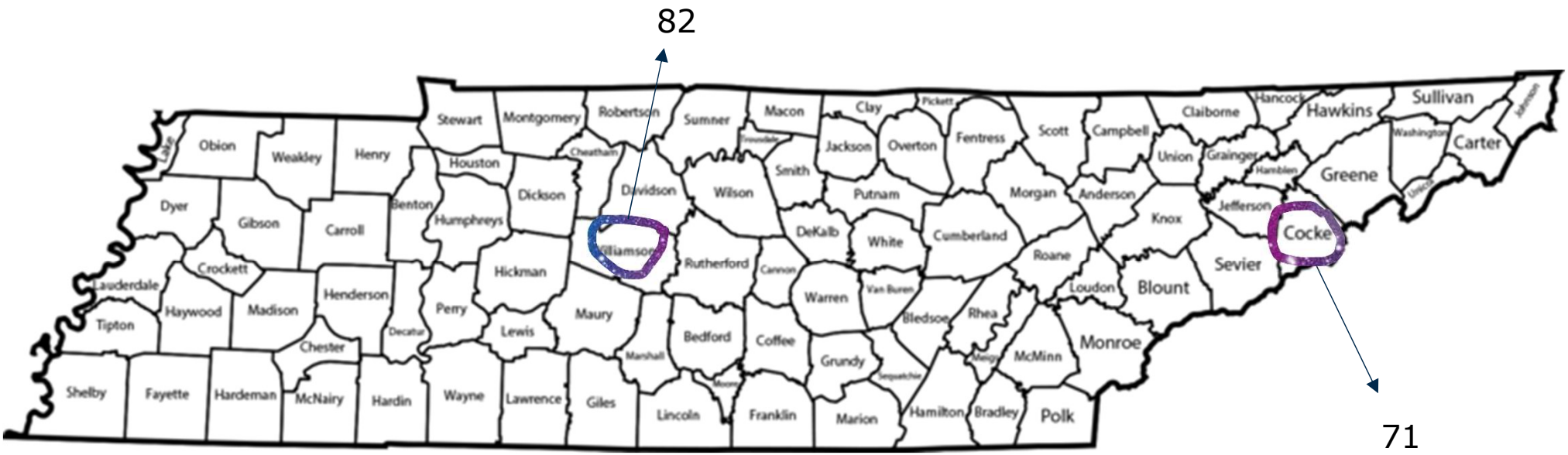
Source: Institute for Clinical Systems Improvement, Going Beyond Clinical Walls: Solving Complex Problems

Current State is Concerning…And We Are Moving In the Wrong Direction



Source: KFF analysis of CDS, OECD, Japanese Ministry of Health, Labour, and Welfare, Australian Bureau of Statistics, and UK Office for Health Improvement and Disparities data

Location Matters



https://www.rwjf.org/en/insights/our-research/interactives/whereyouliveaffectshowlongyoulive.html
https://www.countyhealthrankings.org

Adverse Childhood Experiences

Abuse	Neglect	Household Dysfunction	
 Physical	 Physical	 Mental Illness	 Incarcerated Relative
 Emotional	 Emotional	 Mother treated violently	 Substance Abuse
 Sexual		 Divorce	

ACE-related odds of having a physical health condition

Health condition	0 ACEs	1 ACEs	2 ACEs	3 ACEs	4+ ACEs
Arthritis	100%	130%	145%	155%	**236%**
Asthma	100%	115%	118%	160%	**231%**
Cancer	100%	112%	101%	111%	157%
COPD	100%	120%	161%	**220%**	**399%**
Diabetes	100%	128%	132%	115%	**201%**
Heart Attack	100%	148%	144%	**287%**	**232%**
Heart Disease	100%	123%	149%	**250%**	**285%**
Kidney Disease	100%	83%	164%	179%	**263%**
Stroke	100%	114%	117%	180%	**281%**
Vision	100%	167%	181%	199%	**354%**

https://www.cdc.gov/violenceprevention/aces/index.html

Population Health Is A Different Business

	Fee-for-Service	Population Health
Customer	People who are admitted (or use outpatient services)	Everyone who pays for coverage or is enrolled in a plan/program
Revenue	Paid per unit of service	Monthly fixed amount
Expenses	Primarily labor and facilities	Healthcare services
Data Systems	Cost accounting and billing	Predictive models and care management
Key to Success	Keep occupance high and expences low	Increase management and monitoring to reduce unnecessary care

Agenda

What Is Health

Value

Digital

Smart Governance

Payment Is SLOWLY Encouraging The Business Model To Shift

Volume of Services Provided

Fee For Service (FFS)

Value Based Payments

- Quality
- Patient Experience
- Cost

Pay for Performance

Bundled Payments

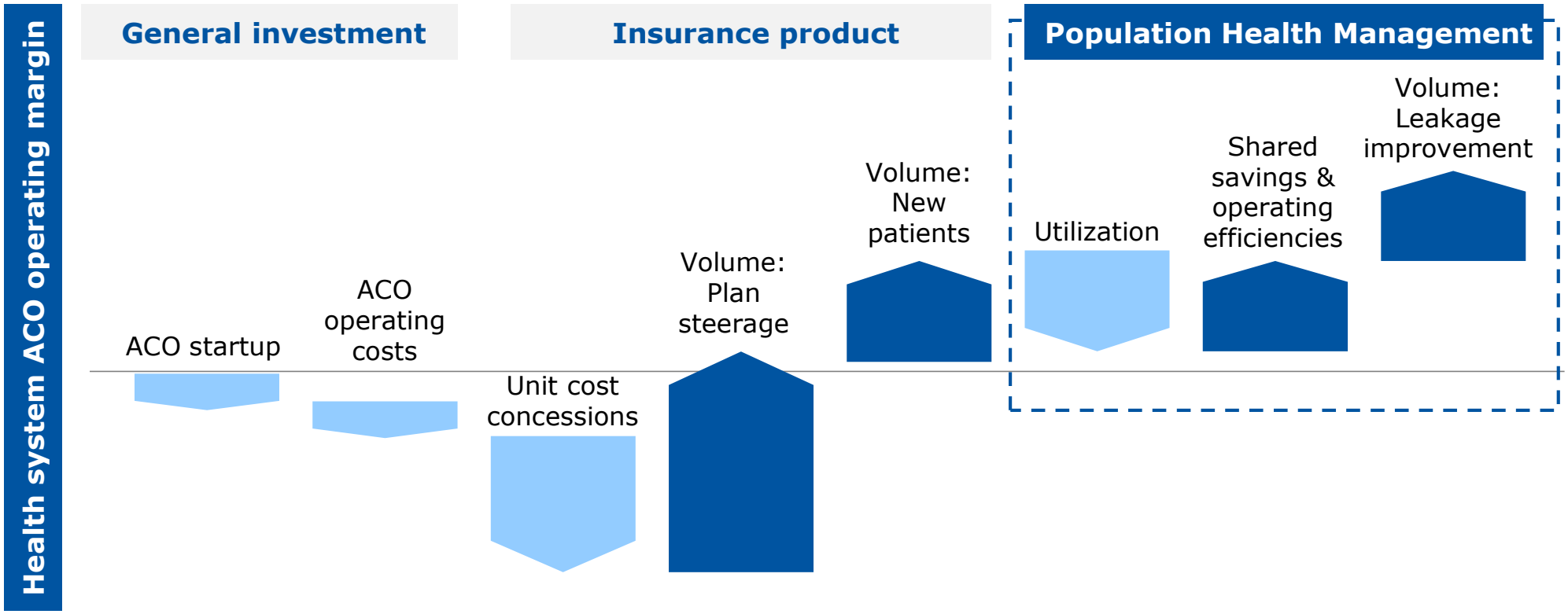
Shared Savings (ACO Model)

Partial or Full Capitation

	FFS	Link to quality & Value	APMS built on fee-for-service architecture	Population-based payment
CY 2017	41%	25%	30%	4%
CY 2021	40%	20%	33%	7%

A Theory to Support The Shift to Value

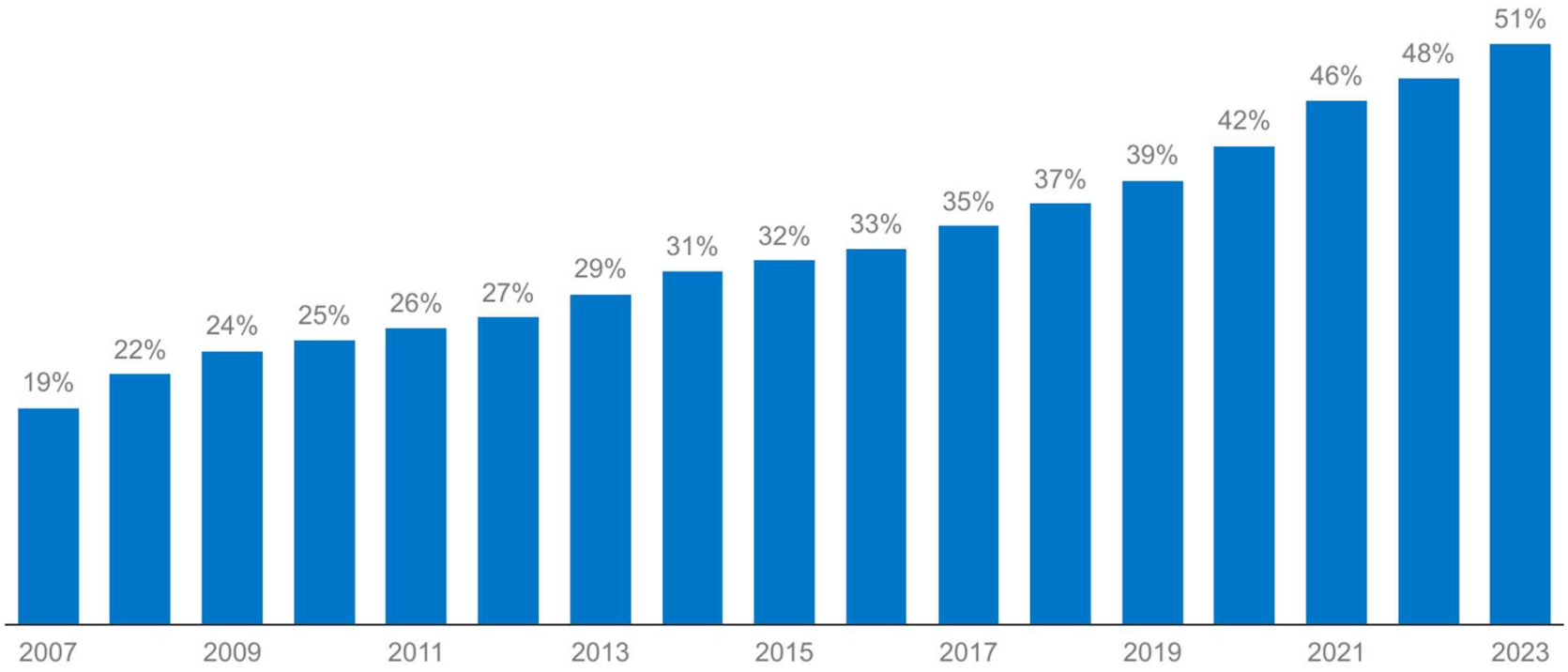
A transformative financial model that improves quality, reduces cost and ensures sustainability



How To Understand The Difference Between FFS Revenue vs. ACO Revenue

	Total	Per Capita/Use Rate	% of Medicare Beneficiaries That Use Service
Attributed Lives	20,000		
Cost of Care	$230M	$11,500	
Hospital Spend	$58M	$2,900	
Hospital Use	6,000 Admits	300/1000	19%
Post Acute	$30M	$1,500	5%
Primary Care	$10M	$500	78%

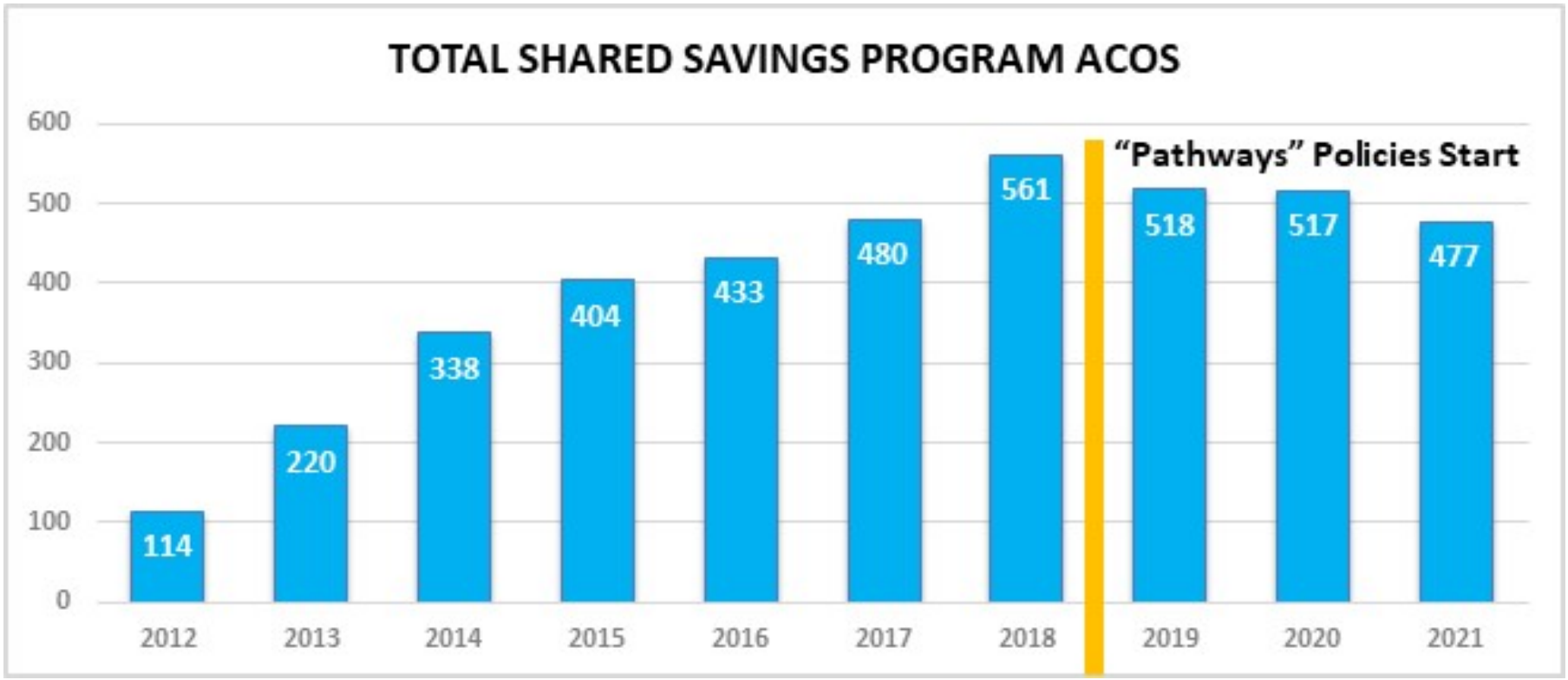
Patients Are Slowly Choosing Value
MA Enrolment Increasing



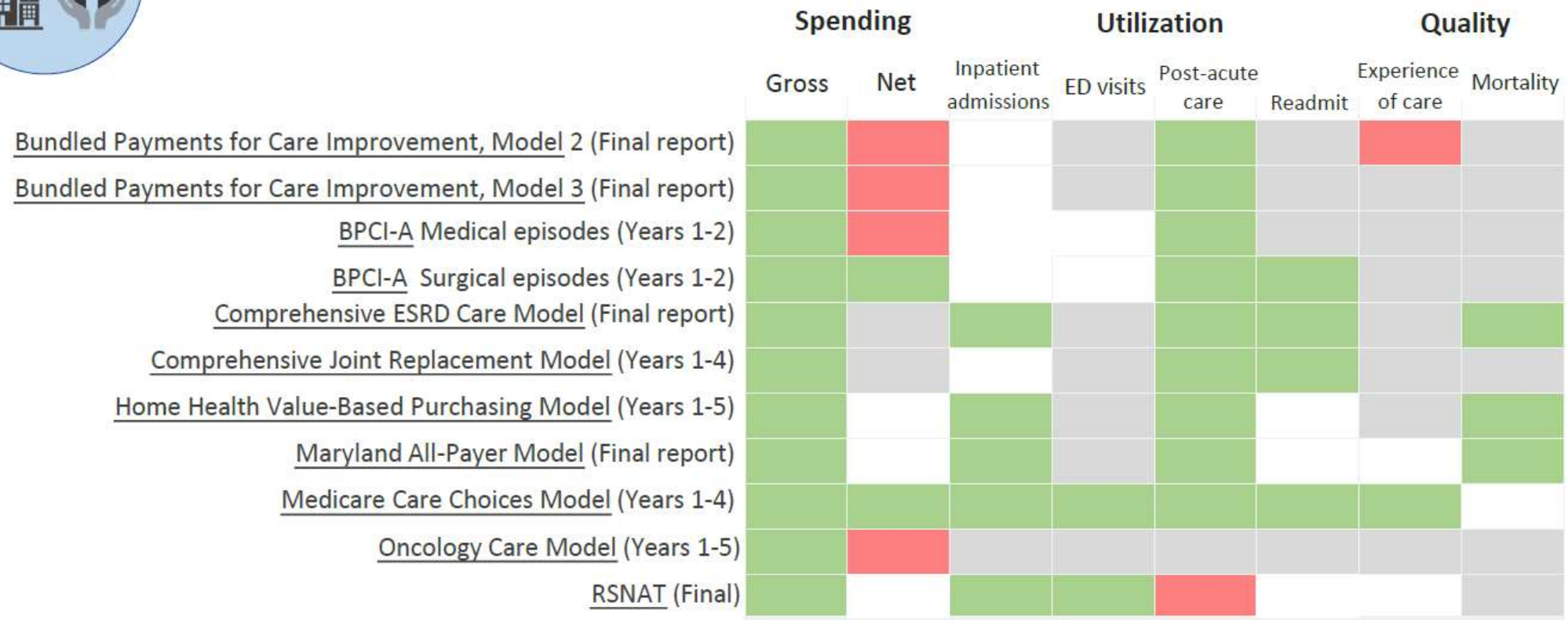
NOTE: Enrollment data are from March of each year. Includes Medicare Advantage plans: HMOs, PPOs (local and regional), PFFS, and MSAs. About 60.0 million people are enrolled in Medicare Parts A and B in 2023.
SOURCE: KFF analysis of CMS Medicare Advantage Enrollment Files, 2010-2023; Medicare Chronic Conditions (CCW) Data Warehouse from 5 percent of beneficiaries, 2010-2016; CCW data from 20 percent of beneficiaries, 2017-2020; and Medicare Enrollment Dashboard 2021-2023.

KFF

Orginzations Are Slowly Moving Into Value



Acute or Specialty Care & Targeted Population models, serving sicker, higher cost beneficiaries, reduced expenditures, admissions, and/or post-acute care with limited improvement in quality.



Primary Care & Population Management models, serving healthier, lower cost beneficiaries, improved less utilization measures in the short-term with half of models reducing gross spending.

	Spending			Utilization			Quality	
	Gross	Net	Inpatient admissions	ED visits	Post-acute care	Readmit	Experience of care	Mortality
ACO Investment Model (Final report)								
Advance Payment ACO Model (Final report)								
Comprehensive Primary Care Initiative (Final report)								
Comprehensive Primary Care Plus (Years 1-4)								
FAI, Washington (Years 1-6)								
Independence at Home Demonstration (Years 1-5)								
Medicare Advantage Value-Based Insurance Design Model (Years 1-3)								
Million Hearts: Cardiovascular Disease Risk Reduction Model (Years 1-4)								
Next Generation ACO Model (Years 1-4)								
Part D Enhanced Medication Therapy Management Model (Years 1-3)								
Pioneer ACO Model (Final)								
Vermont All-Payer ACO Model (Years 1-2)		ACO	state			ACO only	State only		

Fee For Service Strategies Can Support Transitioning to Value-Based Care

Focused on better supporting physicians

Improved patient relationships, including increasing the number of annual wellness visits

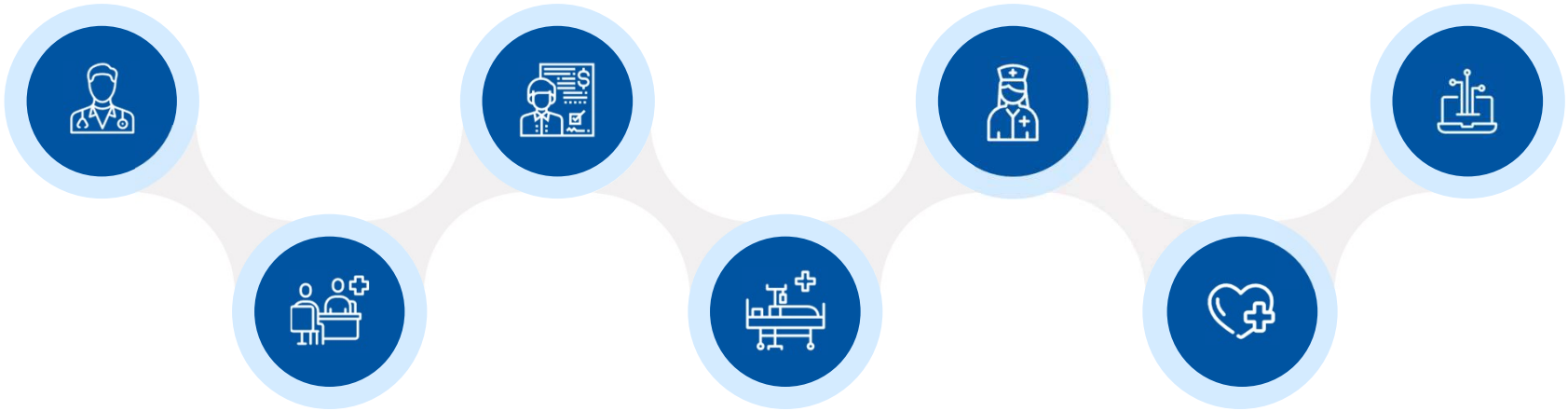
Doing a better job of managing beneficiaries with costly or complex care needs

Managing hospitalizations, working to reduce avoidable hospitalizations, and finding alternatives to the emergency department

Managing relationships with skilled nursing facilities and home health by creating lists of preferred providers and doing warm handoffs into and out of post-acute care

Working to address behavioral health needs and the social determinants of health

Using technology to improve care coordination and overcome interoperability issues.



Agenda

Health

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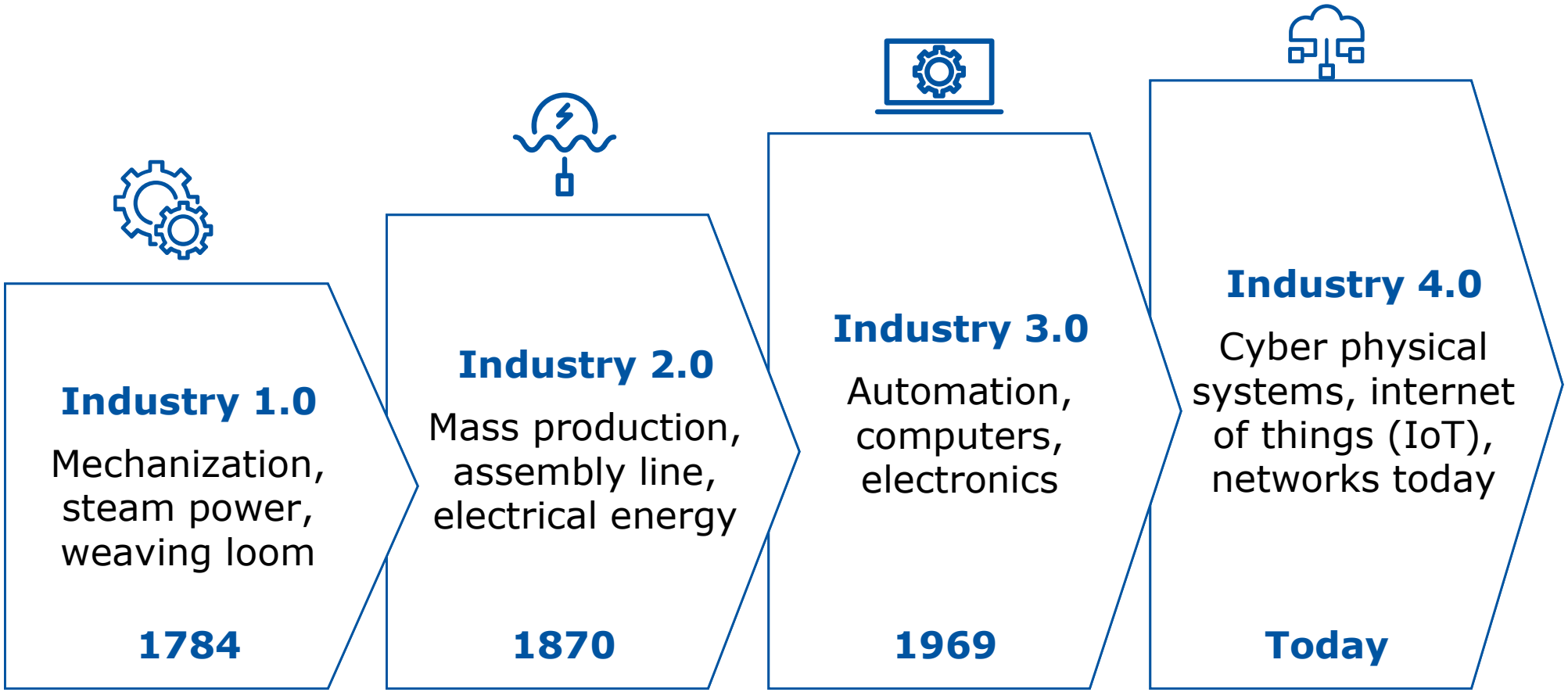
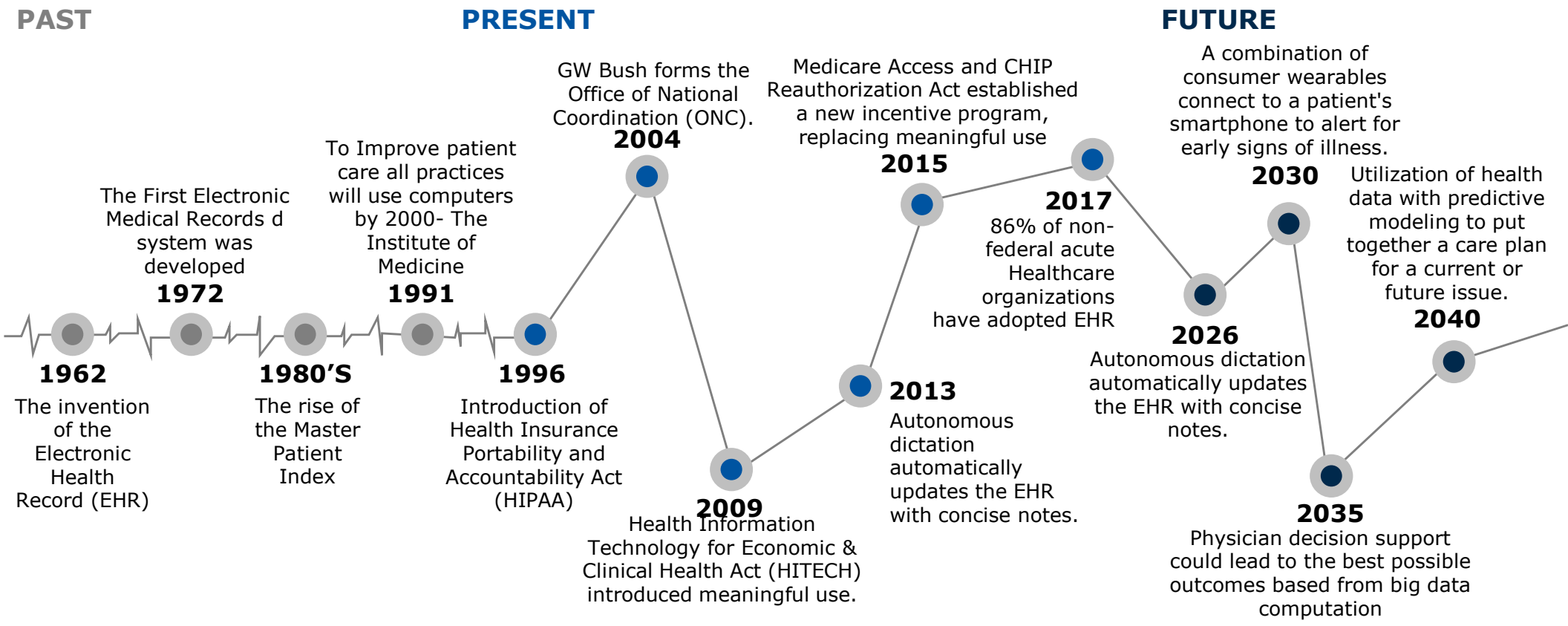
We Are In The Midst of A Digital Industrial Revolution



BSM0

Evolution of Electronic Health Records



Slide 22

BSM0 Can you please make the text larger and perhaps get rid of the background so its easier to read

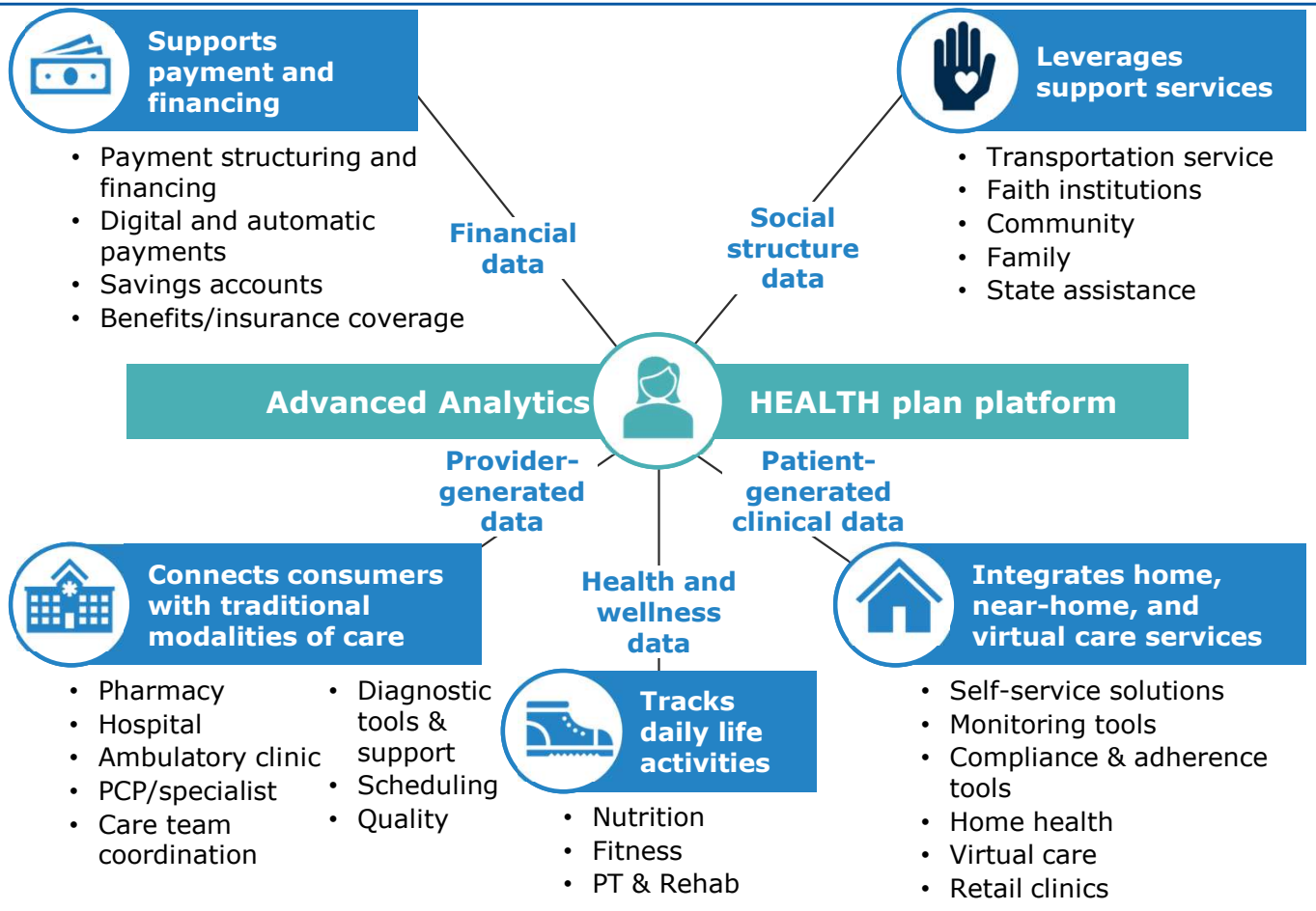
Brian Silverstein, MD, 2023-02-27T02:37:06.604

Digital Health Requires Significant Capabilites

Layer of engagement
Systems of consumer and patient engagement (e.g., search, wearables, e-commerce, behavioral health aps, IoT)

Layer of intelligence
Systems to convert data elements into insights and intelligence to inform or drive actions

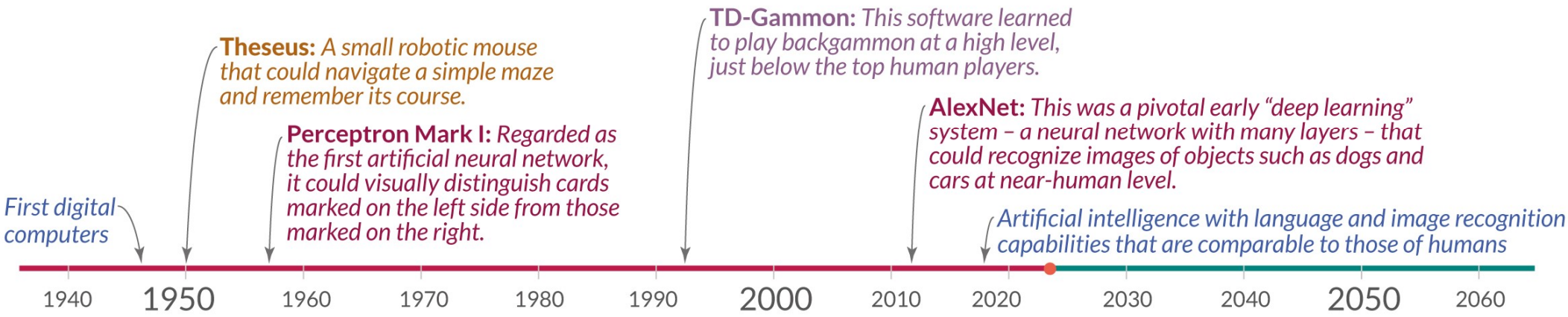
Layer of infrastructure
Systems of data capture, curation management, and interoperability



Source: McKinsey

AI Has Been In Development For Decades

A timeline of notable artificial intelligence systems



These relay switches underneath the floor of the maze serve as the "brain" for Theseus, the maze-solving mouse.

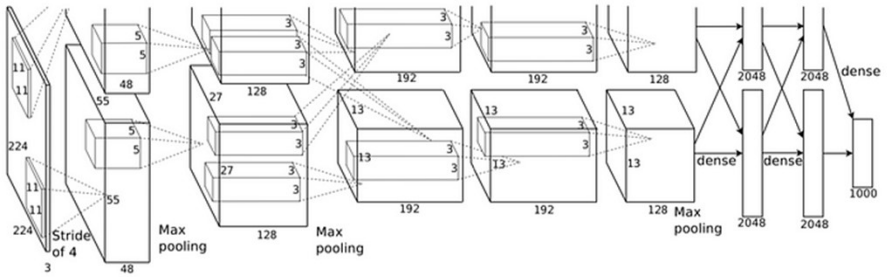
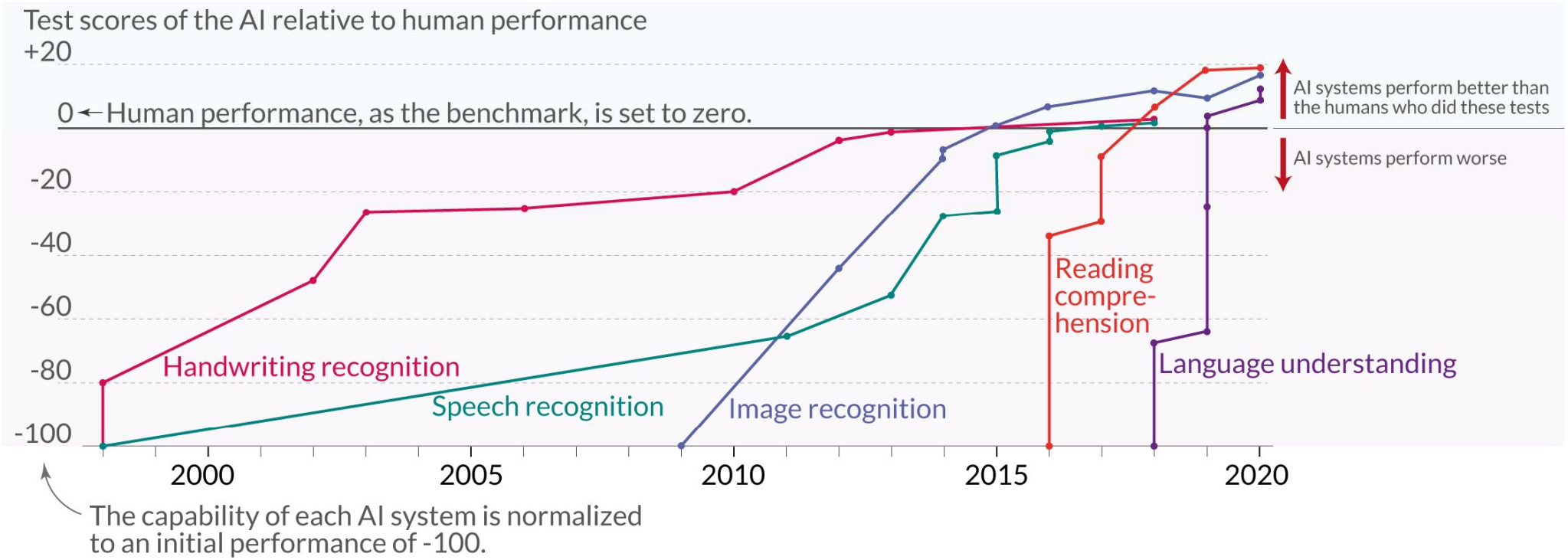


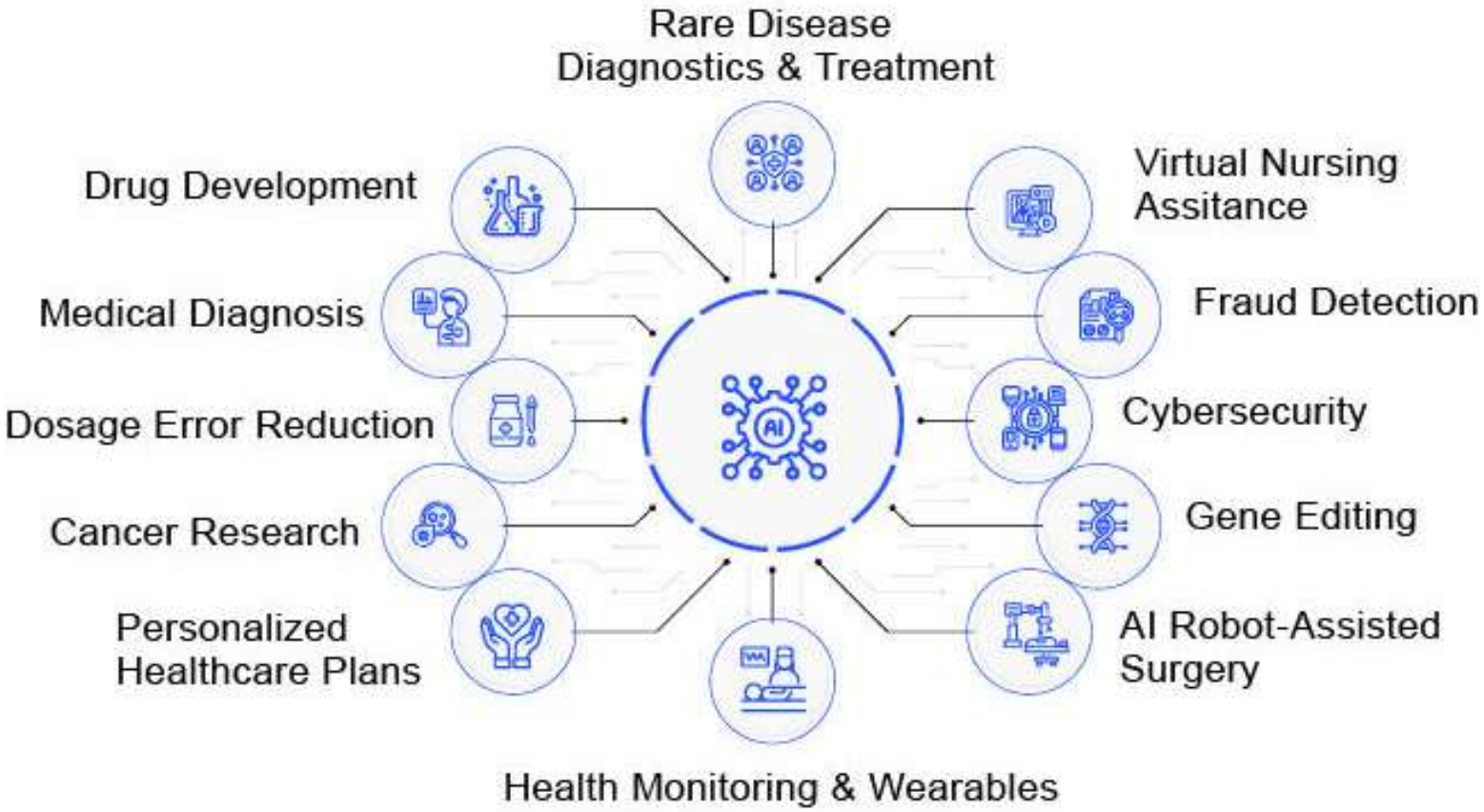
Illustration of AlexNet's architecture

AI System Capabilites Have Rapidly Increased

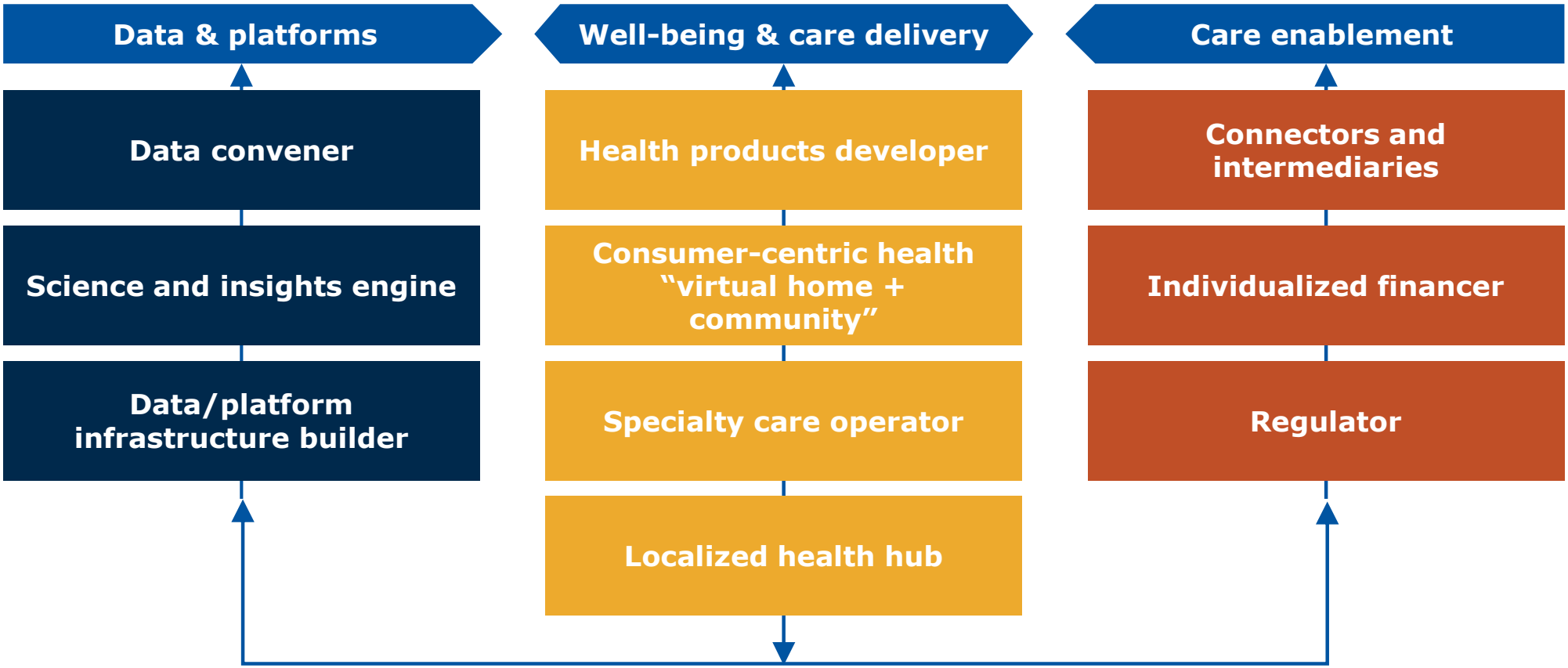


Data source: Kiela et al. (2021) – Dynabench: Rethinking Benchmarking in NLP
OurWorldinData.org – Research and data to make progress against the world's largest problems.

AI Has Great Promise For The Future



Digital Business Archetypes



Powered by radically interoperable data for a personalized and seamless consumer experience

Agenda

Health

Value

Digital

Smart Governance

Acceptance Is The First Step At Moving Forward

Denial

- Wrong data
- Better care

Anger

- EHRs
- Burnout

Bargaining

- Sicker patients
- Defensive medicine

Depression

- End-of-life care
- SDOH

Acceptance

- Practice pattern
- Prices

Population Health Uptake Varies by Market

Total Cost of Care

High

Low

"Dealer's Choice"

State Regulation: Dominant health system may choose to move market to population health or remain fee for service

"Moving to Population Health"

Employers Seeking Direct Health System Contracts: Markets with good opportunity to reduce TCOC and high competition will tend to transition quickly to population health

Physician Stance on Value-Based Contracting: Markets with little opportunity to reduce TCOC and limited competition will tend to remain fee for service

"Steady Fee for Service"

Consumers Demanding More Value and Convenience: Markets may stay fee for service or move to population driven by strategic choices of multiple health systems and payers

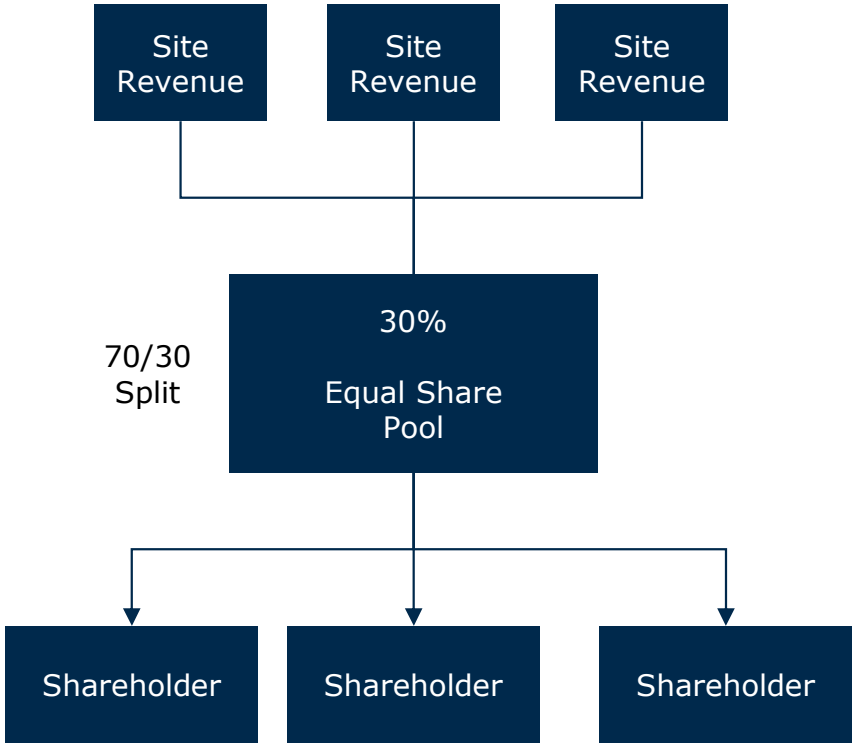
"Wild Cards"

Low — **Level Competition** — High

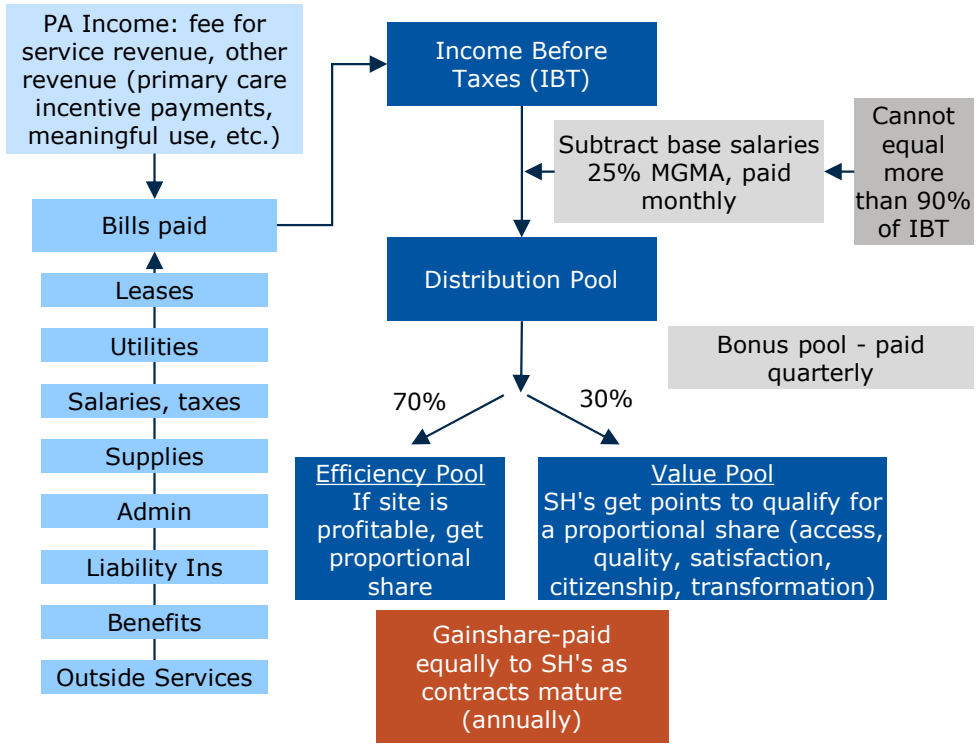
A Cautionary Tale...Cornerstone Health Care

Value-based compensation formula implemented

Old Formula



New Formula



What Happened?

Doctors sue Cornerstone for breach of contract, financial damages

By Paul B. Johnson ENTERPRISE STAFF WRITER Feb 8, 2

Wake Forest Baptist completes purchase of Cornerstone Health Care of High Point

By Richard Craver Winston-Salem Journal May 3, 2016 (0)

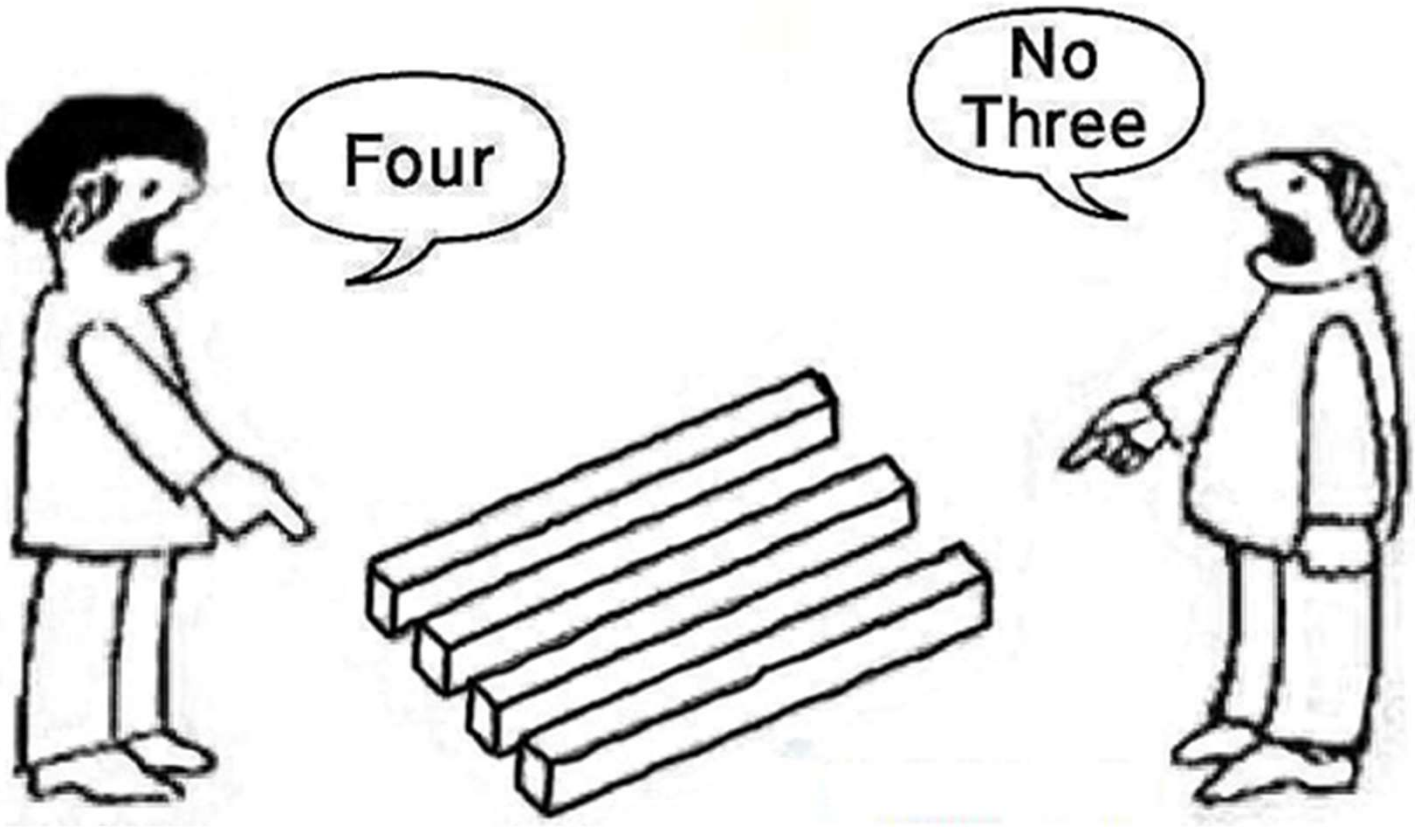
SECTIONS HOME SEARCH The New York Times

BUSINESS DAY

Cornerstone: The Rise and Fall of a Health Care Experiment

By REED ABELSON DEC. 23, 2016

Perspective Matters



Key Questions For Governance

- How can we get clarity on our goals and develop governance to monitor progress?
- Is digitial a strategy or an enablement of strategies or both?
- We are 10 years into a transition cycle that could be 20+ years. What is the rate of change in our market?
- How developed are our operations to support value care delivery?
- What is ability to managing performance risk?
- Do we have governance and management to successfully manage for both volume and value?

THANK YOU