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nrc
HEALTH

The Business of Disease, Illness & Wellness

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PREPARED FOR

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"When 'I' is replaced by 'We' even illness becomes wellness."

~ Malcolm X



Agenda

Disease & Illness

Health & Wellness

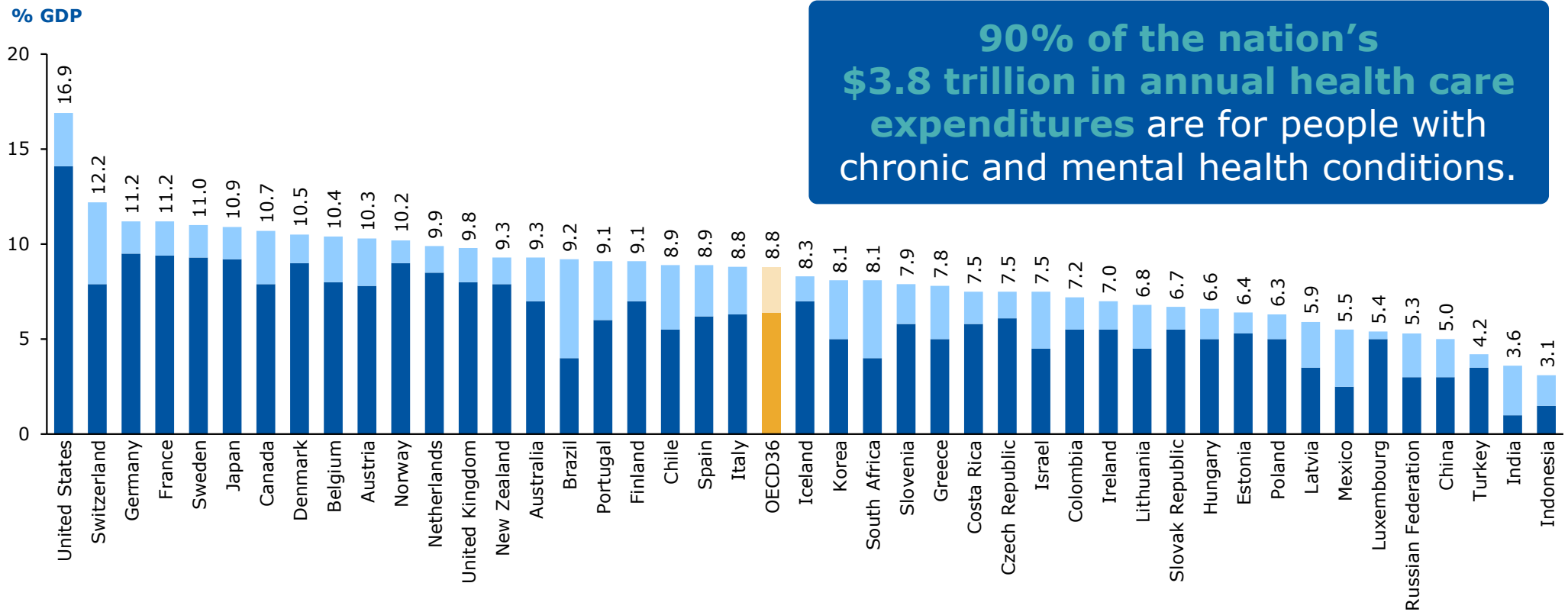
Business Models

Next Steps



Disease & Illness Is Big Business

Voluntary/Out-of-pocket Government/Compulsory



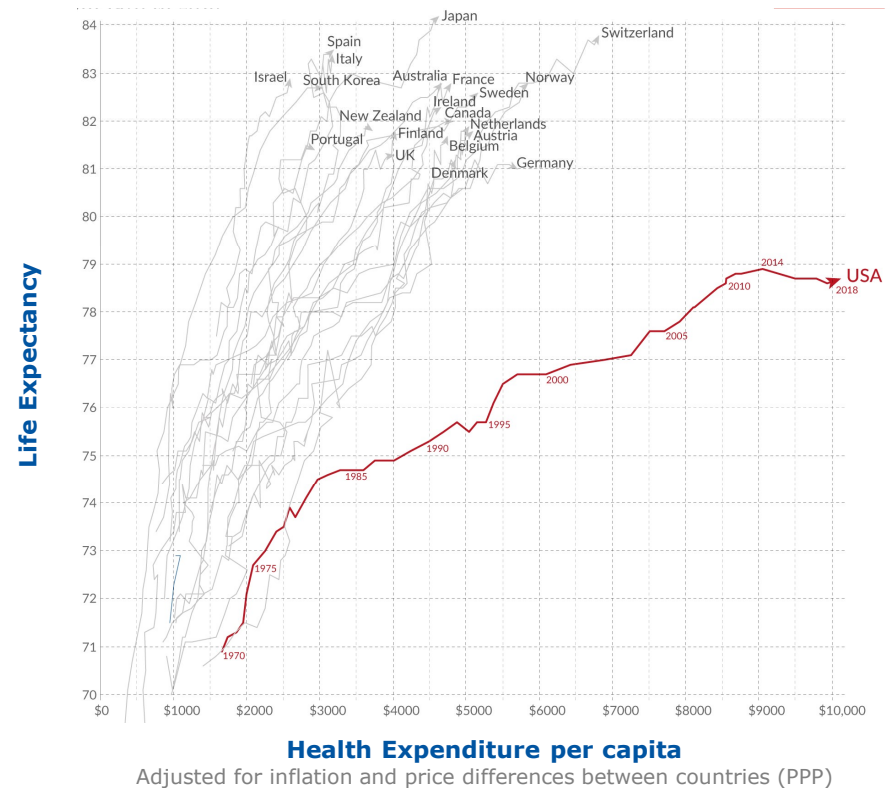
We Have A Systemic Problem

- The U.S. spends nearly twice as much as the average OECD country — yet has the lowest life expectancy
- The U.S. has the highest chronic disease burden and an obesity rate that is two times higher than the OECD average
- Americans had fewer physician visits than peers in most countries
- Americans use expensive technologies, such as MRIs, and specialized procedures
- Compared to peer nations, the U.S. has among the highest number of hospitalizations from preventable causes and the highest rate of avoidable deaths

Organization for Economic Co-operation and Development (OECD)

Life expectancy vs. health expenditure

From 1970 to 2018



COVID Has Been Devastating To Some Age Groups

2019 US 10 Leading Causes of Death by Age Group

Total number of COVID United States (through March 30, 2022):
Cases
81,742,831

Admissions
4,580,996

COVID Deaths
1,006,481

General excess deaths **1,005,000**

| Rank | AGE GROUPS | | | | | | | | | | All Ages |
|-------------------------------------|--------------------------------|----------------------------|------------------------------------|------------------------------------|-------------------------------------|-----------------------------|-----------------------------|---------------------------------------|--|---|---|
| | <1 | 1-4 | 5-9 | 10-14 | 15-24 | 25-34 | 35-44 | 45-54 | 55-64 | 65+ | |
| 1 | Congenital Anomalies 4,301 | Unintentional Injury 1,149 | Unintentional Injury 714 | Unintentional Injury 778 | Unintentional Injury 11,755 | Unintentional Injury 24,516 | Unintentional Injury 24,070 | Malignant Neoplasms 35,587 | Malignant Neoplasms 111,765 | Heart Disease 531,583 | Heart Disease 659,041 |
| 2 | Short Gestation 3,445 | Congenital Anomalies 416 | Malignant Neoplasms 371 | Suicide 534 | Suicide 5,954 | Suicide 8,059 | Malignant Neoplasms 10,695 | Heart Disease 31,138 | Heart Disease 80,837 | Malignant Neoplasms 435,462 | Malignant Neoplasms 599,601 |
| 3 | Unintentional Injury 1,149 | Malignant Neoplasms 285 | Congenital Anomalies 192 | Malignant Neoplasms 404 | Homicide 4,774 | Homicide 5,341 | Heart Disease 10,499 | Unintentional Injury 23,359 | Unintentional Injury 24,892 | Chronic Low Respiratory Disease 133,246 | Unintentional Injury 173,040 |
| 4 | SIDS 1,248 | Homicide 284 | Homicide 155 | Homicide 191 | Malignant Neoplasms 1,388 | Malignant Neoplasms 3,577 | Suicide 7,525 | Liver Disease 8,098 | Chronic Low Respiratory Disease 18,743 | Cerebro-vascular 129,193 | Chronic Low Respiratory Disease 156,979 |
| 5 | Maternal Pregnancy Comp. 1,245 | Heart Disease 133 | Heart Disease 91 | Congenital Anomalies 189 | Heart Disease 872 | Heart Disease 3,495 | Homicide 3,446 | Suicide 8,012 | Diabetes Mellitus 15,508 | Alzheimer's Disease 120,090 | Chronic Low Respiratory Disease 150,005 |
| 6 | Placenta Cord Membranes 742 | Influenza & Pneumonia 122 | Chronic Low Respiratory Disease 69 | Heart Disease 87 | Congenital Anomalies 390 | Liver Disease 1,112 | Liver Disease 3,417 | Diabetes Mellitus 6,348 | Liver Disease 14,385 | Diabetes Mellitus 62,397 | Alzheimer's Disease 121,489 |
| 7 | Bacterial Sepsis 603 | Perinatal Period 57 | Influenza & Pneumonia 52 | Chronic Low Respiratory Disease 81 | Diabetes Mellitus 248 | Diabetes Mellitus 887 | Diabetes Mellitus 2,228 | Cerebro-vascular 5,153 | Cerebro-vascular 12,931 | Unintentional Injury 60,527 | Diabetes Mellitus 87,647 |
| 8 | Respiratory Distress 424 | Septicemia 53 | Cerebro-vascular 37 | Influenza & Pneumonia 71 | Influenza & Pneumonia 175 | Cerebro-vascular 585 | Cerebro-vascular 1,741 | Chronic Low Respiratory Disease 3,592 | Suicide 8,238 | Nephritis 42,230 | Nephritis 51,565 |
| 9 | Circulatory System Disease 406 | Cerebro-vascular 52 | Septicemia 36 | Cerebro-vascular 48 | Chronic Low Respiratory Disease 168 | Complicated Pregnancy 532 | Influenza & Pneumonia 951 | Nephritis 2,269 | Nephritis 5,857 | Influenza & Pneumonia 40,399 | Influenza & Pneumonia 40,399 |
| 10 | Necrotizing Enterocolitis 354 | Benign Neoplasms 49 | Benign Neoplasms 31 | Benign Neoplasms 35 | Cerebro-vascular 158 | HIV 486 | Septicemia 812 | Septicemia 2,176 | Septicemia 5,672 | Parkinson's Disease 34,435 | Suicide 47,511 |
| COVID DEATH TOTAL (2021) | | 124 | 53 | 151 | 1,534 | 6,517 | 16,408 | 37,695 | 76,062 | 308,278 | 446,824 |
| ALL CAUSE DEATH TOTAL (2021) | | 18,379 | 3,562 | 5,618 | 36,736 | 78,827 | 119,584 | 207,570 | 460,366 | 2,420,609 | 3,351,251 |
| POPULATION (2020) | | 3,745,000 | 15,713,000 | 42,257,000 | 43,165,000 | 45,866,000 | 42,935,000 | 41,356,000 | 43,259,000 | 54,303,000 | 332,601,000 |

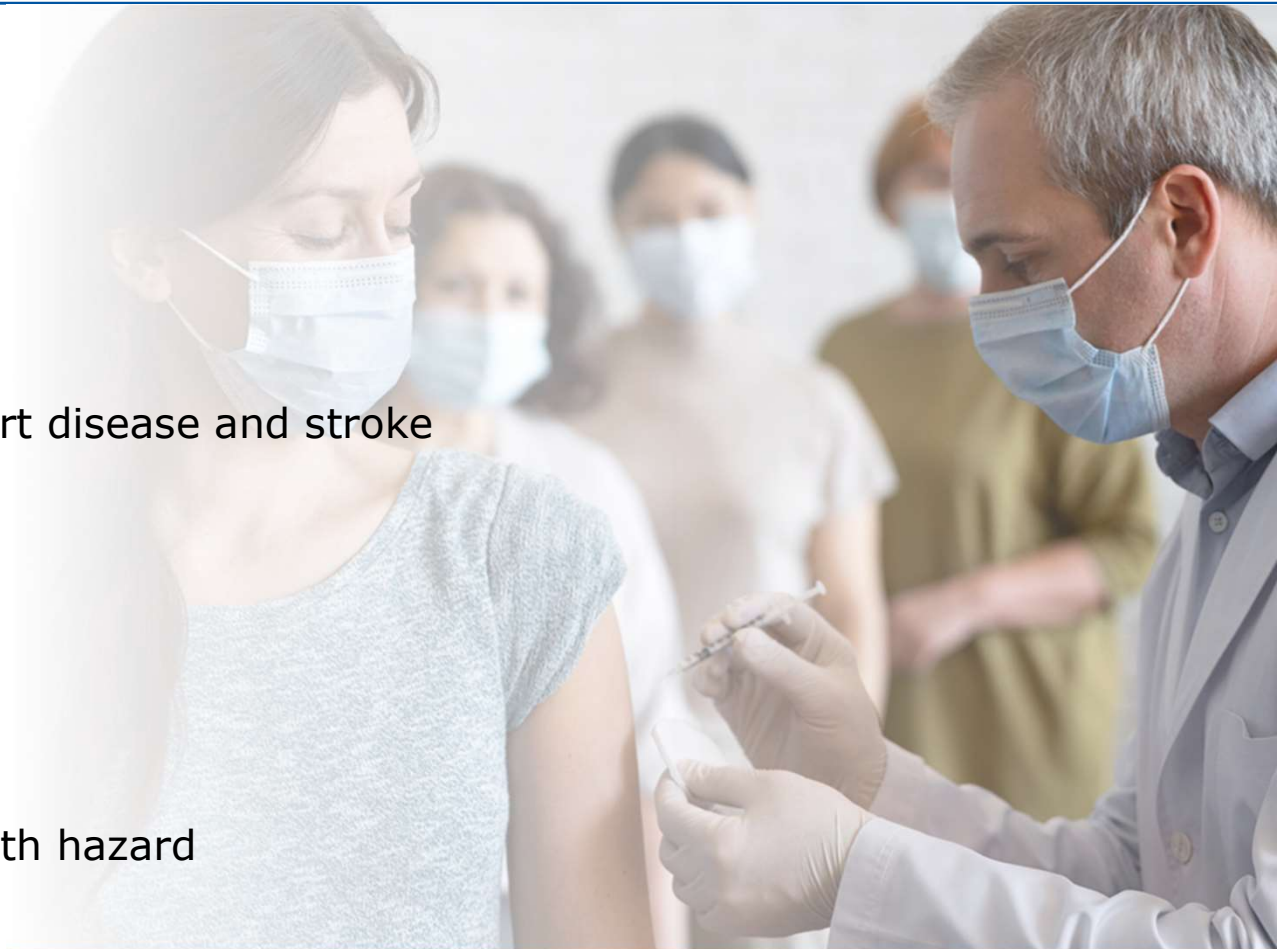
Crisis Can Bring Rapid Changes

| Pandemic | % of population | Death toll (Millions) | Population Billions | Year of Pop. Est. |
|----------------------------|-----------------|-----------------------|---------------------|-------------------------|
| BLACK DEATH | 51% | 200 | 0.39 | 1300¹ |
| PLAGUE OF JUSTINIAN | 19% | 40 | 0.21 | 500 |
| SMALL POX | 12% | 56 | 0.46 | 1500 |
| ANTONINE PLAGUE | 2.6% | 5 | 0.20 | 200 |
| SPANISH FLU | 2.5% | 45 | 1.82 | 1919 |
| THE THIRD PLAGUE | 1.0% | 12 | 1.26 | 1850 |
| HIV/AIDS | 0.7% | 30 | 4.46 | 1981 |
| COVID-19 | 0.07% | 5.5 | 7.90 | 2022 (January) |

SOURCE: CDC, WHO, BBC, Wikipedia, Historical records, Encyclopaedia Britannica, Our world in data

Improvements In Disease & Illness Have Come From Public Health

- Vaccination
- Motor-vehicle safety
- Safer workplaces
- Control of infectious diseases
- Decline in deaths from coronary heart disease and stroke
- Safer and healthier foods
- Healthier mothers and babies
- Family planning
- Fluoridation of drinking water
- Recognition of tobacco use as a health hazard



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Health & Wellness

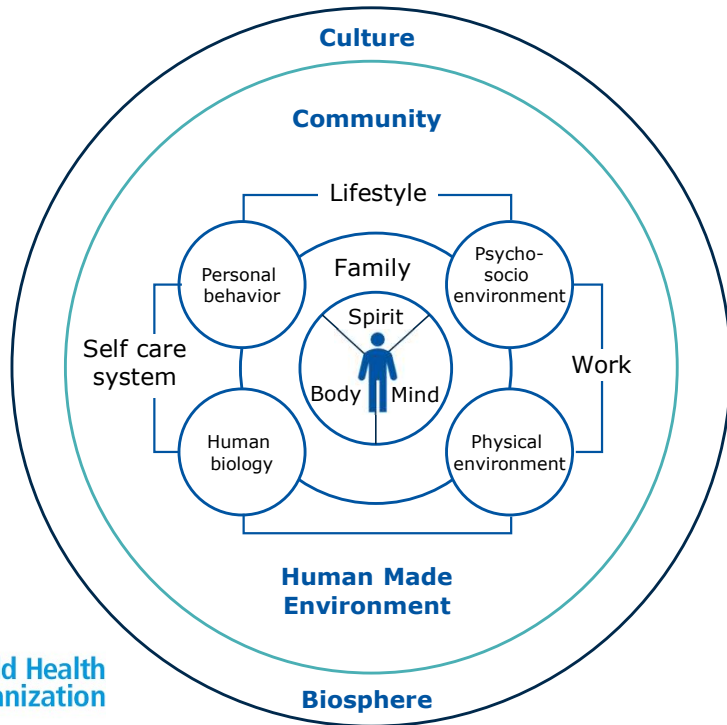
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Health is a State of Being, Whereas Wellness is Living a Healthy Lifestyle

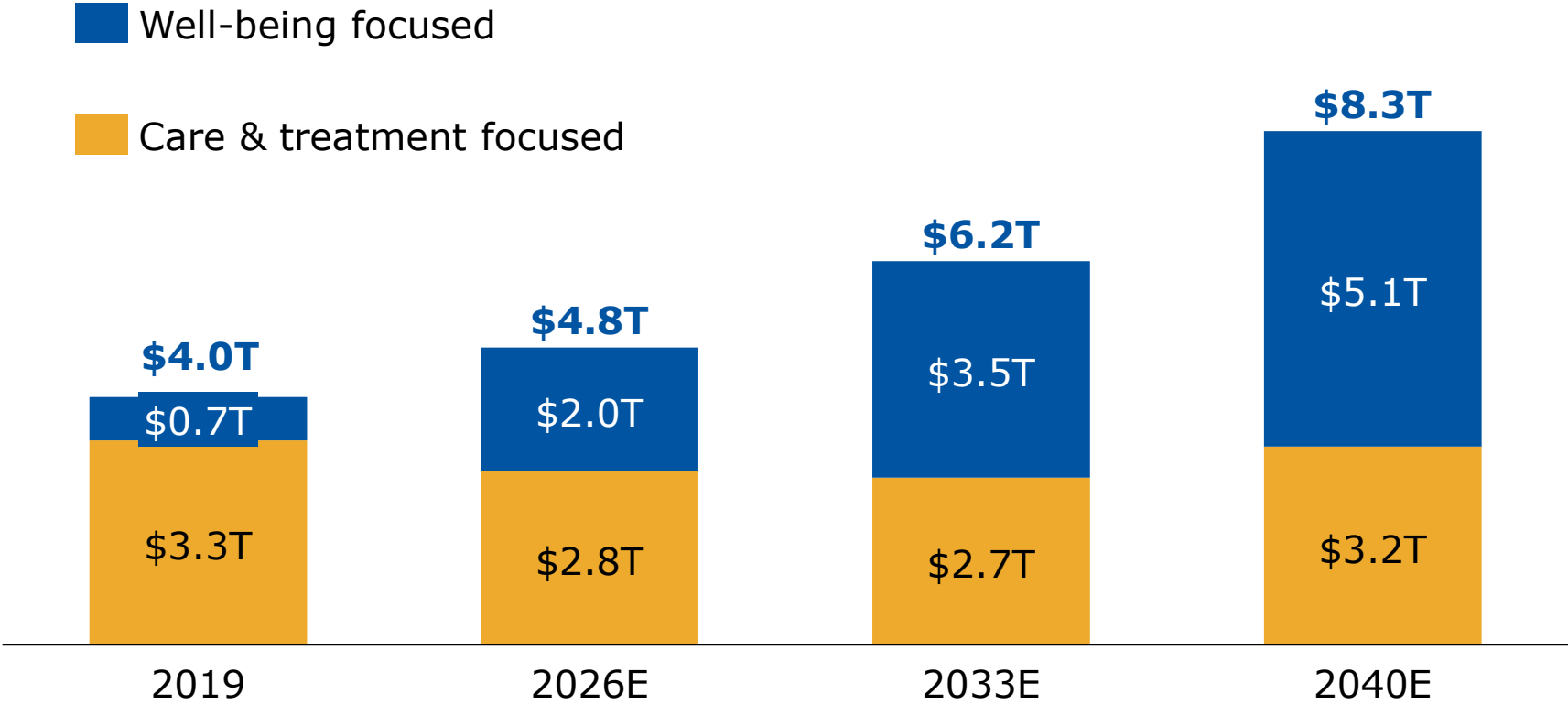
Health is a state of complete physical, mental and social well-being



Wellness is multidimensional and holistic, encompassing lifestyle, mental and spiritual well-being, and the environment

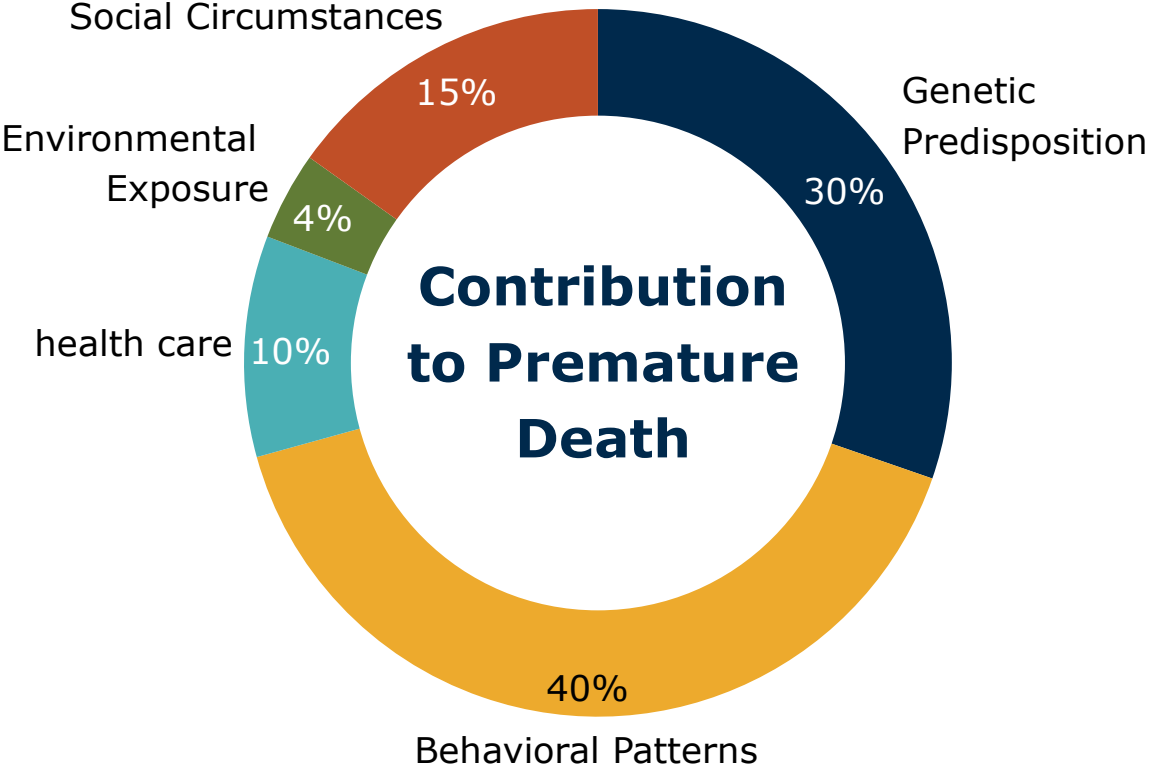


Medical Spending May Shift From Disease & Illness to Health & Wellness



Source: Deloitte Insights

The State Of US Health



Key drivers of health status



Obesity



Physical Inactivity



Smoking



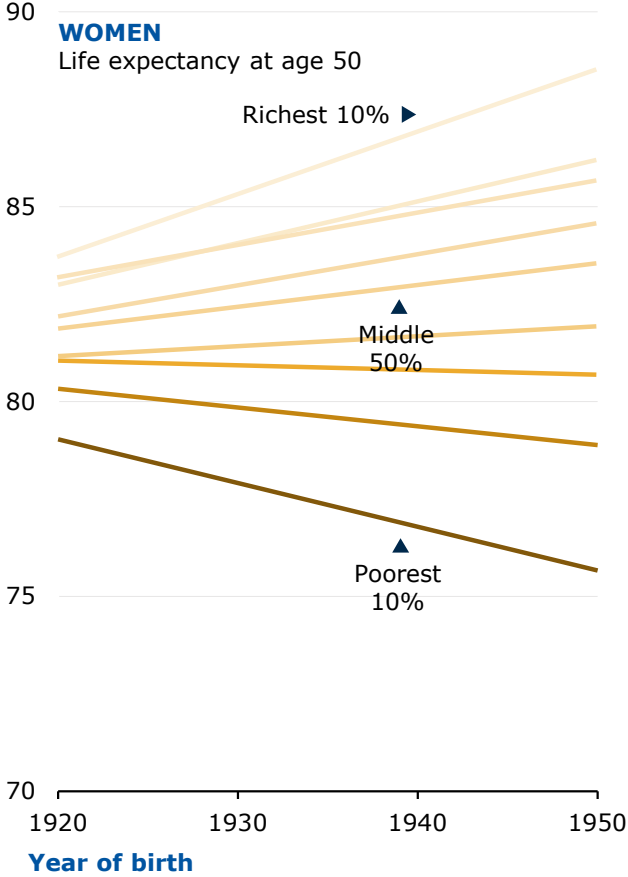
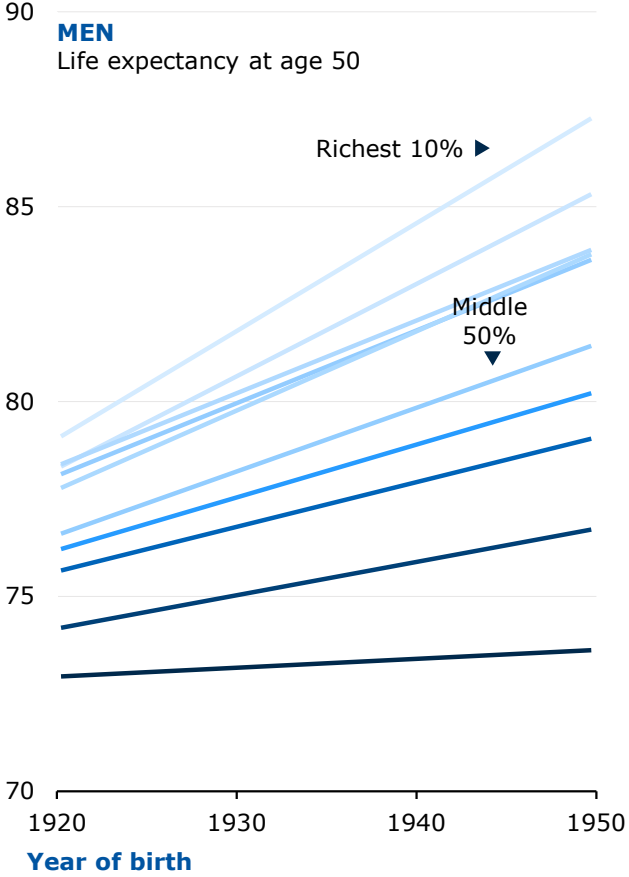
Stress













Aging

Schroeder S. N Engl J Med 2007;357:1221-1228

Health Equity Is Real



Adverse Childhood Experiences Matter

| 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% |

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Value Based Health Care Is Different

Value-Based Health Care Benefits

Patients

Lower costs & better outcomes



Providers

Higher Patient Satisfaction Rates & Better Care Efficiencies



Payers

Stronger Cost Controls & Reduced Risks



Suppliers

Alignment of Prices with Patient Outcomes



Society

Reduced Healthcare Spending & Better Overall Health



Payment Is Slowly Encouraging The Business Model To Shift

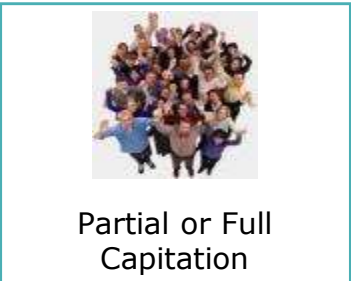
Volume of Services Provided



Fee For Service (FFS)

Value Based Payments

- ↑ Quality
 - ↑ Patient Experience
 - ↓ Cost
- Pay for Performance

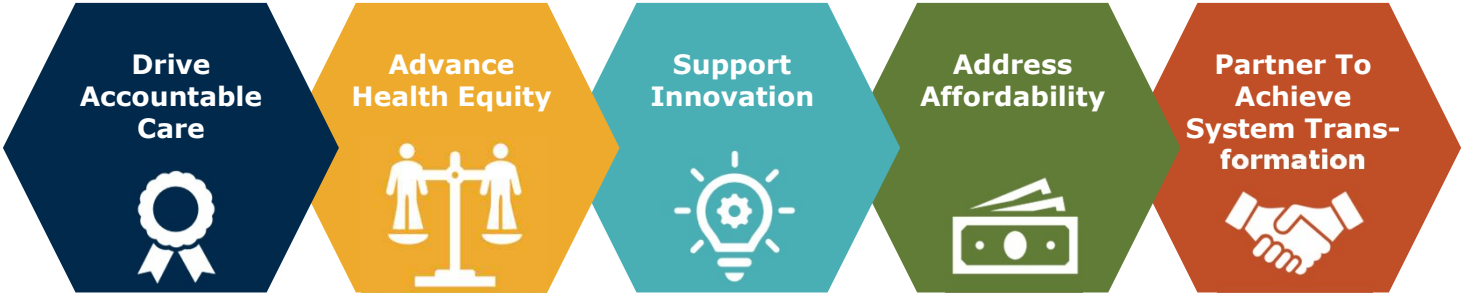


| | FFS | Link to quality & Value | APMS built on fee-for-service architecture | Population-based payment |
|------|-----|-------------------------|--|--------------------------|
| 2019 | 39% | 25% | 31% | 5% |
| 2025 | 1% | 32% | 50% | 15% |

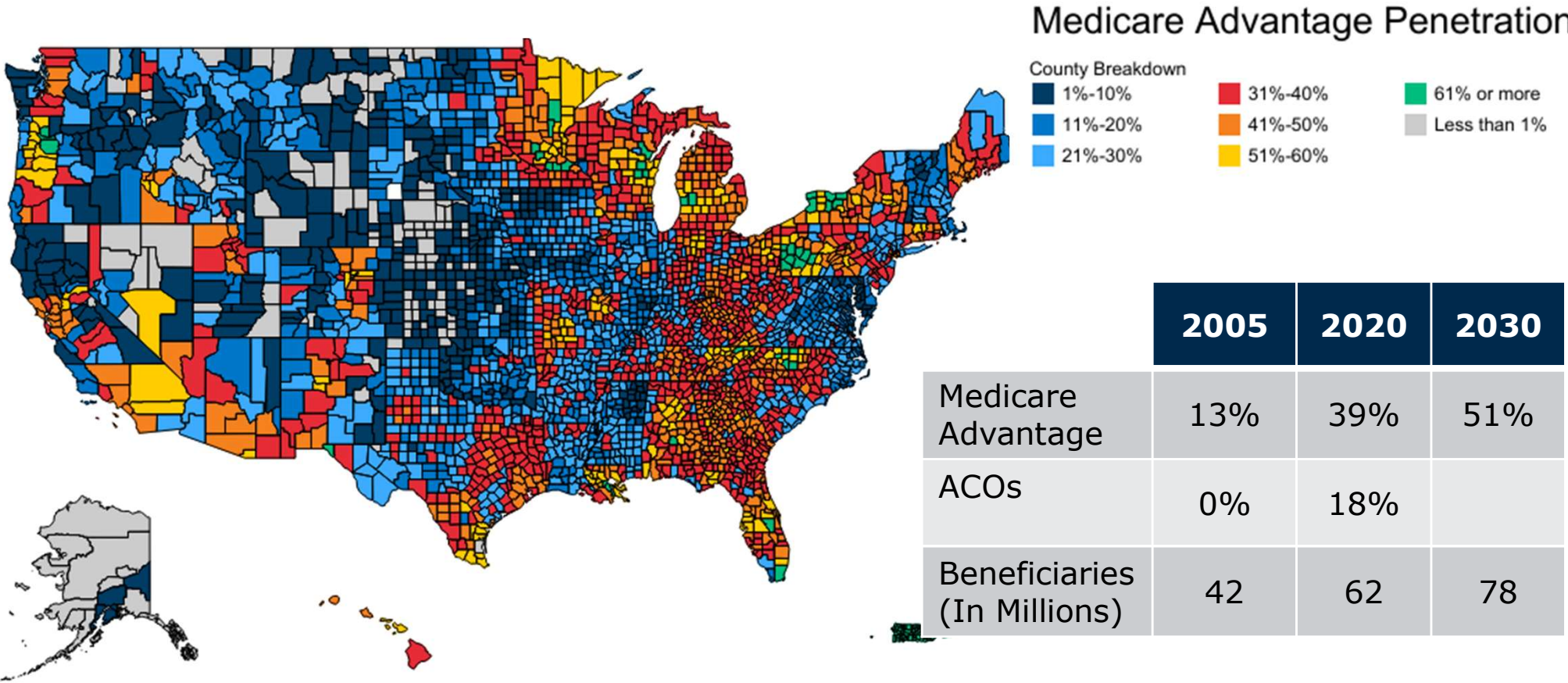
CMS & CMS Innovations Center Strategy

Lessons Learned Over the Last Decade

- 1. Ensure health equity is embedded in every model.
- 2. Streamline the model portfolio and reduce complexity and overlap to help scale what works
- 3. Tools to support transformation in care delivery can assist providers in assuming financial risk
- 4. Design of models may not consistently ensure broad provider participation.
- 5. Complexity of financial benchmarks have undermined model effectiveness.



Seniors Are Migrating to New Models



Spectrum of Primary Care Models

Traditional Primary Care



PCP Aggregators / VBC



Access Models



Adjacent

HOME DIRECT



TELEHEALTH



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A hand is shown holding a magnifying glass, with the lens focused on a circular graphic. The graphic consists of a dark teal outer ring and a smaller white inner circle. The text "the coming healthcare singularity" is written in white, lowercase letters across the center of the white inner circle. The background is a blurred, warm-toned sunset or sunrise scene.

the coming healthcare singularity

Digital Health Requires Significant Capabilities



Layer of engagement

Systems of consumer and patient engagement (e.g., search, wearables, e-commerce, behavioral health apps, 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



Supports payment and financing

- Payment structuring and financing
- Digital and automatic payments
- Savings accounts
- Benefits/insurance coverage



Leverages support services

- Transportation service
- Faith institutions
- Community
- Family
- State assistance

Advanced Analytics HEALTH plan platform



Financial data

Social structure data

Provider-generated data

Patient-generated clinical data



Connects consumers with traditional modalities of care

- Pharmacy
- Hospital
- Ambulatory clinic
- PCP/specialist
- Care team coordination
- Diagnostic tools & support
- Scheduling
- Quality

Health and wellness data



Integrates home, near-home, and virtual care services

- Self-service solutions
- Monitoring tools
- Compliance & adherence tools
- Home health
- Virtual care
- Retail clinics



Tracks daily life activities

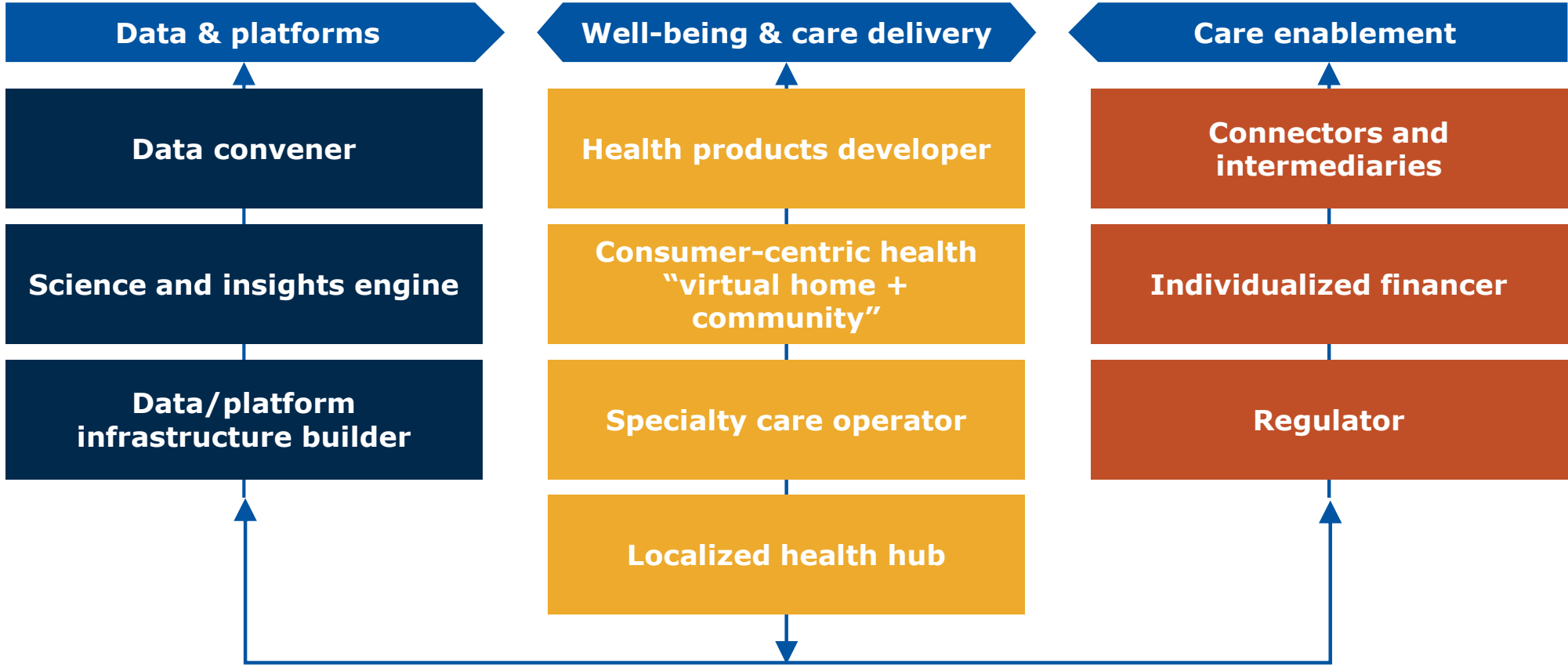
- Nutrition
- Fitness
- PT & Rehab

Forbes











The EHR Is Dead. Long Live The EHR Platform

Winning Business Archetypes



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

Valuation of Medicare Advantage Focused Firms

| Entities | | Type of entity | Est. # of patients | Valuation | \$/Person |
|---------------------------|---|-----------------|--------------------|-----------------------|-----------|
| Oak Street Medical |  OAK STREET HEALTH | PCP Group | 90,000 | \$13B | \$196,000 |
| Agilon Health |  agilon health | PCP MSO | 170,000 | \$11.4B | \$67,000 |
| Clover Health | Clover Health | MA Insurer | 57,000 | \$3.5B | \$61,000 |
| Alignment Health |  Alignment Healthcare | MA Insurer | 81,000 | \$4.2B | \$52,000 |
| Iora Health |  iorahealth | PCP Group | 38,000 | \$2.1B | \$55,000 |
| Village MD |  VillageMD | ACO PCP Company | 500,000 | \$10 Billion - Target | \$20,000 |
| Devoted Health |  DevotedHealth | MA Insurer | 17,000 | \$3B | \$176,000 |
| CANO Health |  CanoHealth | PCP Group & MSO | 103,000 | \$4.4B | \$43,000 |
| Bright Health |  Bright Health Group | Insurer | 220,000 | \$11.3B | \$51,000 |

<https://www.healthaffairs.org/doi/10.1377/hblog20210927.6239/full/>

Digital Transforms Business In Ways That Seem Impossible

Why Cambridge Analytica



Starting from Scratch

When we started on the campaign (second week of June) the Trump Campaign had no speakable data infrastructure.

- No database of record
- Many disparate data sources
- No data science program (models)
- No proper digital marketing apparatus
- Research being done by up to 5 pollsters at one point

Any most importantly: **No unifying data, digital and tech strategy.**



THANK YOU

