# Balancing the Promises and Perils of Technological Innovation to Improve Health

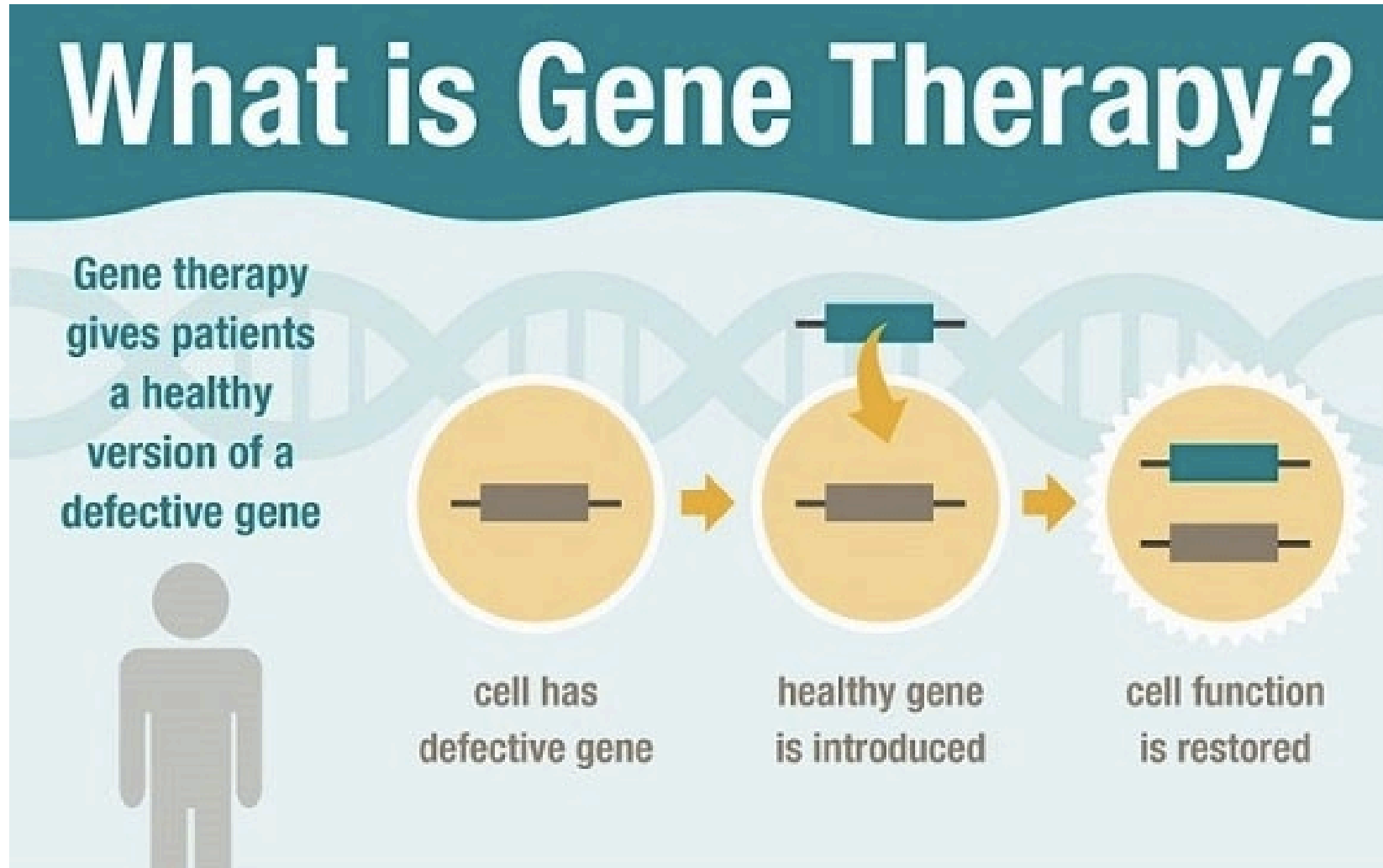Christopher F. Koller
February 19. 2019

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# About the Milbank Memorial Fund

An endowed operating foundation that works to improve the health of populations by connecting leaders and decision makers with the best available evidence and experience.
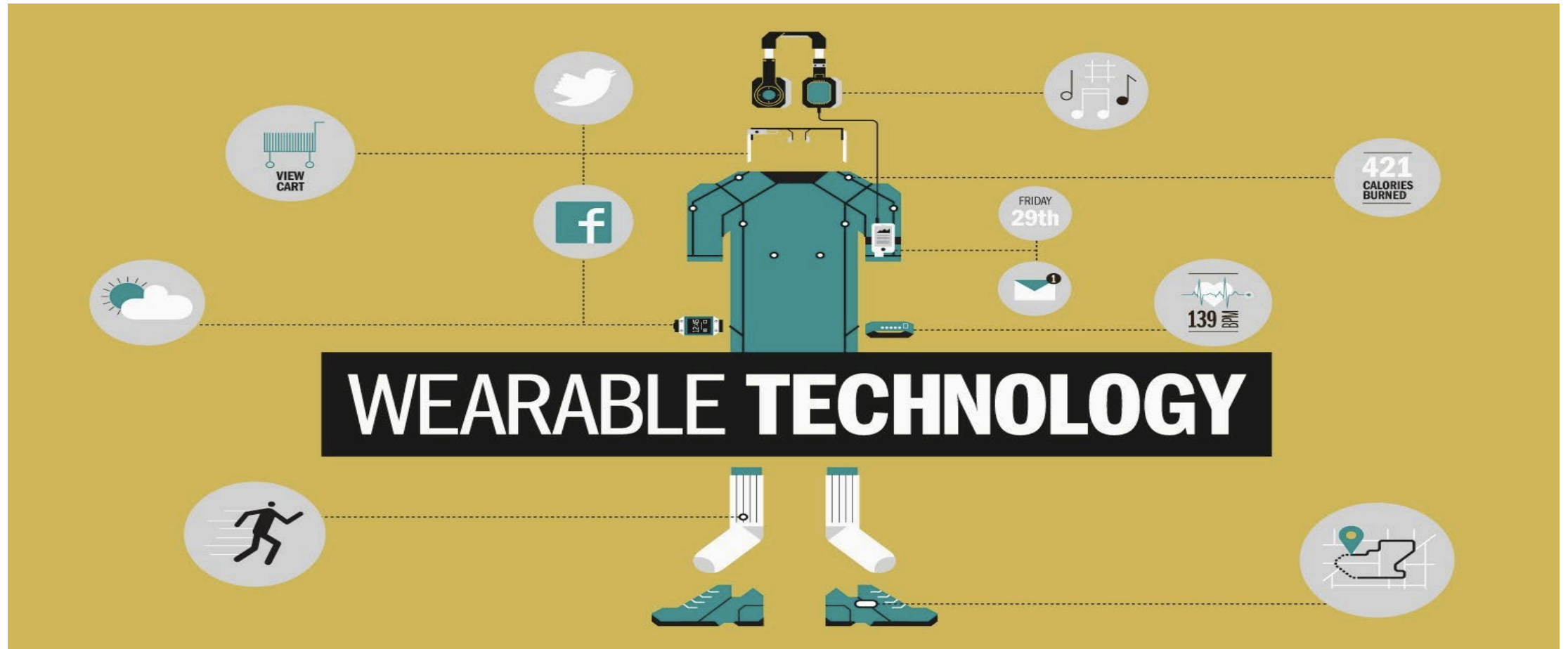
Founded in 1905, the Fund engages in nonpartisan analysis, collaboration, and communication on significant issues in health policy. It does this work by

- publishing high-quality, evidence-based reports, books, and *The Milbank Quarterly,* a peer-reviewed journal of population health and health policy;
- convening state health policy decision makers on issues they identify as important to population health;
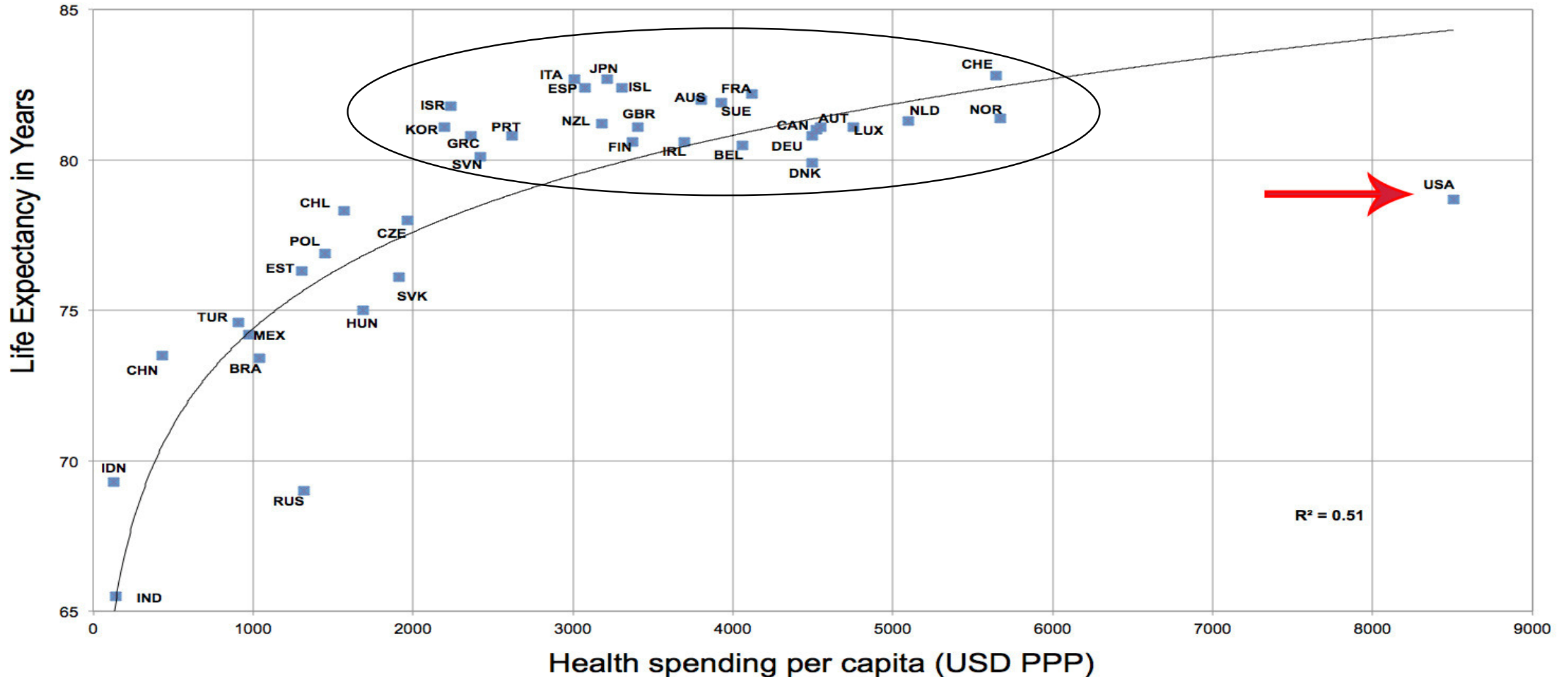- and building communities of health policymakers to enhance their effectiveness.

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# What is the Problem We are Trying to Address with Technological Innovation?.... Better Cures?

# More Convenience and Value for Individuals?

# The lack of value in our health care system?



Scatter plot of Life Expectancy in Years (y-axis, 65 to 85) versus Health spending per capita (USD PPP) (x-axis, 0 to 9000). Countries plotted include IND, IDN, RUS, CHN, BRA, MEX, TUR, HUN, SVK, EST, POL, CZE, CHL, KOR, GRC, SVN, ISR, PRT, NZL, FIN, GBR, ITA, ESP, JPN, ISL, IRL, BEL, AUS, SUE, FRA, DNK, CAN, AUT, DEU, LUX, NLD, NOR, CHE, and USA. A trend curve is shown with R² = 0.51. A red arrow points to USA, and an oval encircles a cluster of high-income countries.

# Or is it an Outcomes Equity Issue?

**Mortality Amenable to Health Care by Race, State Variation, 2009–10**



Deaths per 100,000 population

● Black   ● White

U.S. average, all races = 86 per 100,000
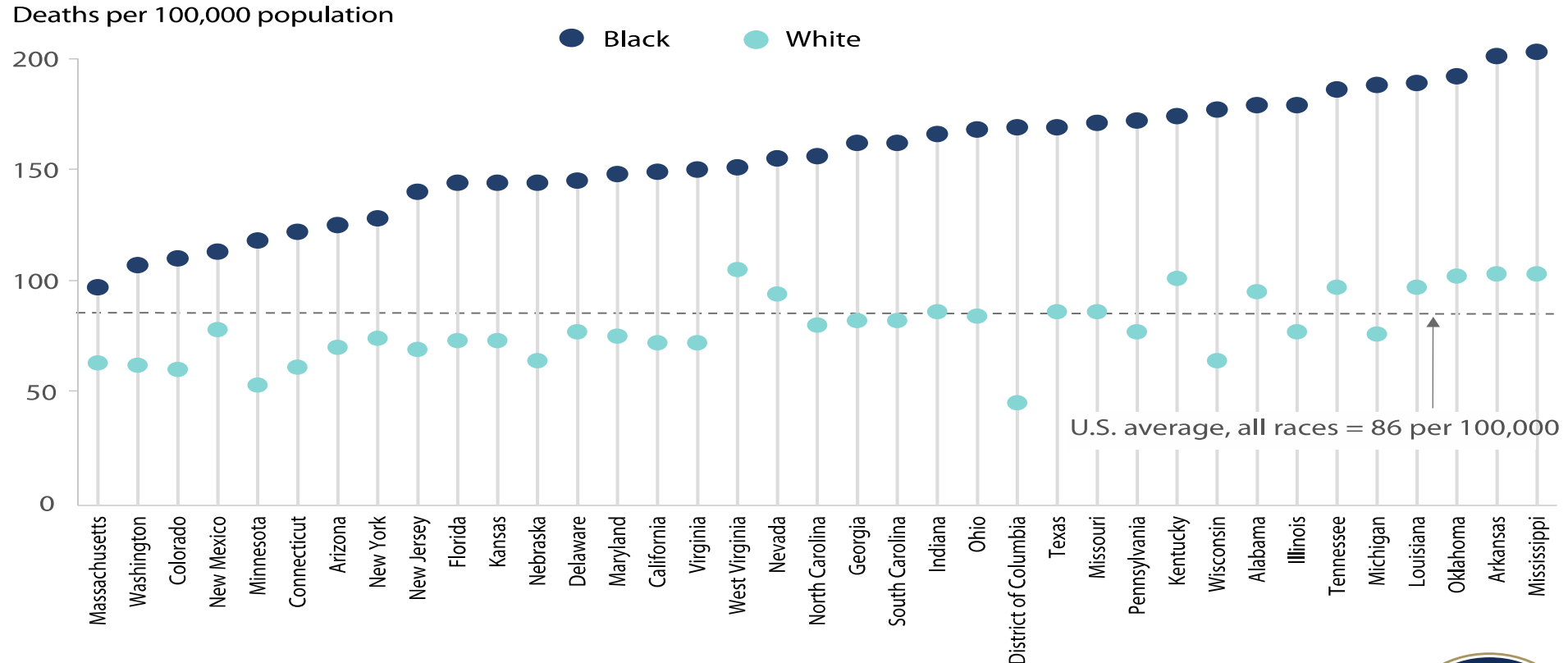
Notes: Data for Black population are not available for Alaska, Hawaii, Idaho, Iowa, Maine, Montana, New Hampshire, North Dakota, Oregon, Rhode Island, South Dakota, Utah, Vermont, or Wyoming. States are arranged in rank order based on black mortality.
Data: 2004–05 and 2009–10 National Vital Statistics System (NVSS) mortality all-county micro data files.
Source: Commonwealth Fund Scorecard on State Health System Performance, 2014.

THE COMMONWEALTH FUND

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# Innovation is not an end itself – Should be guided by public priorities

With Gov't responsible for half the health care spent in the country, there is a direct public interest here in the priorities guiding healthcare innovation

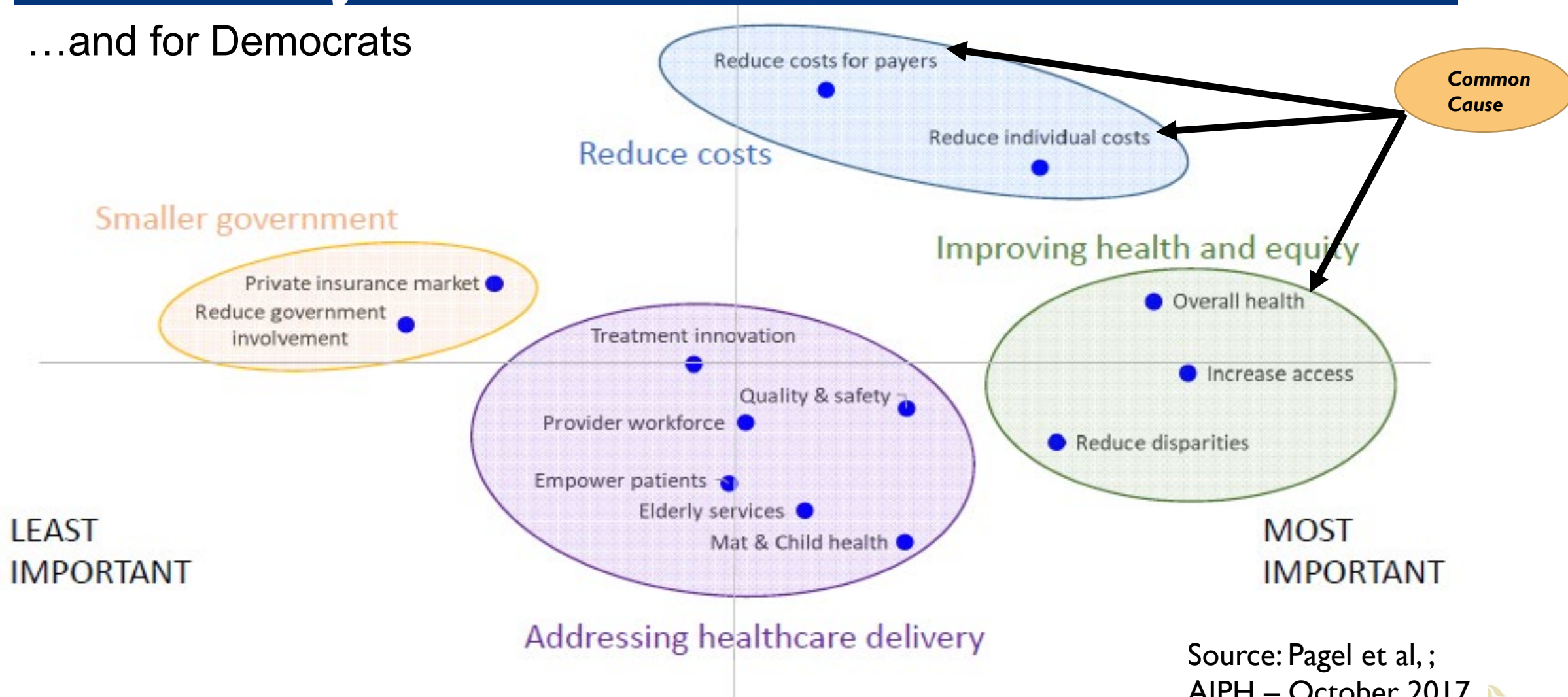Milbank Memorial Fund

# Legislator Healthcare Priorities and Goals - MMF study

Relative importance of various goals for Republicans
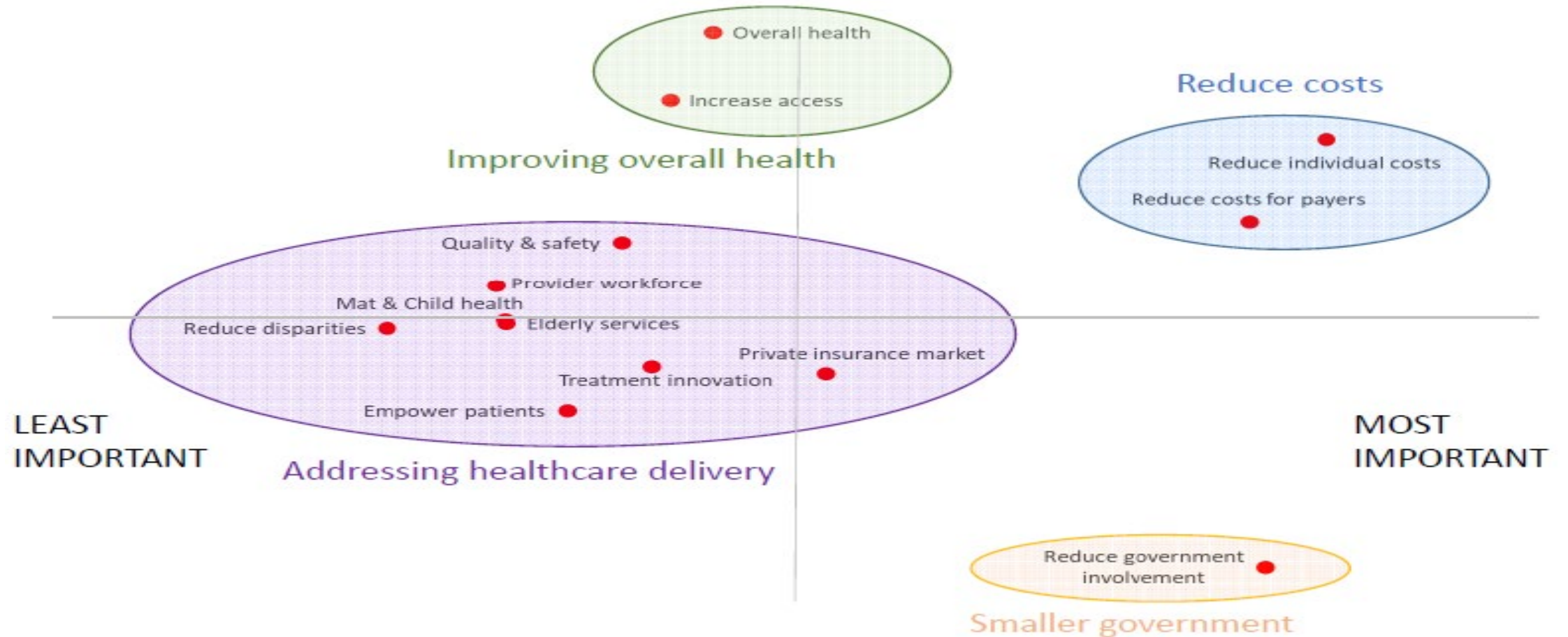
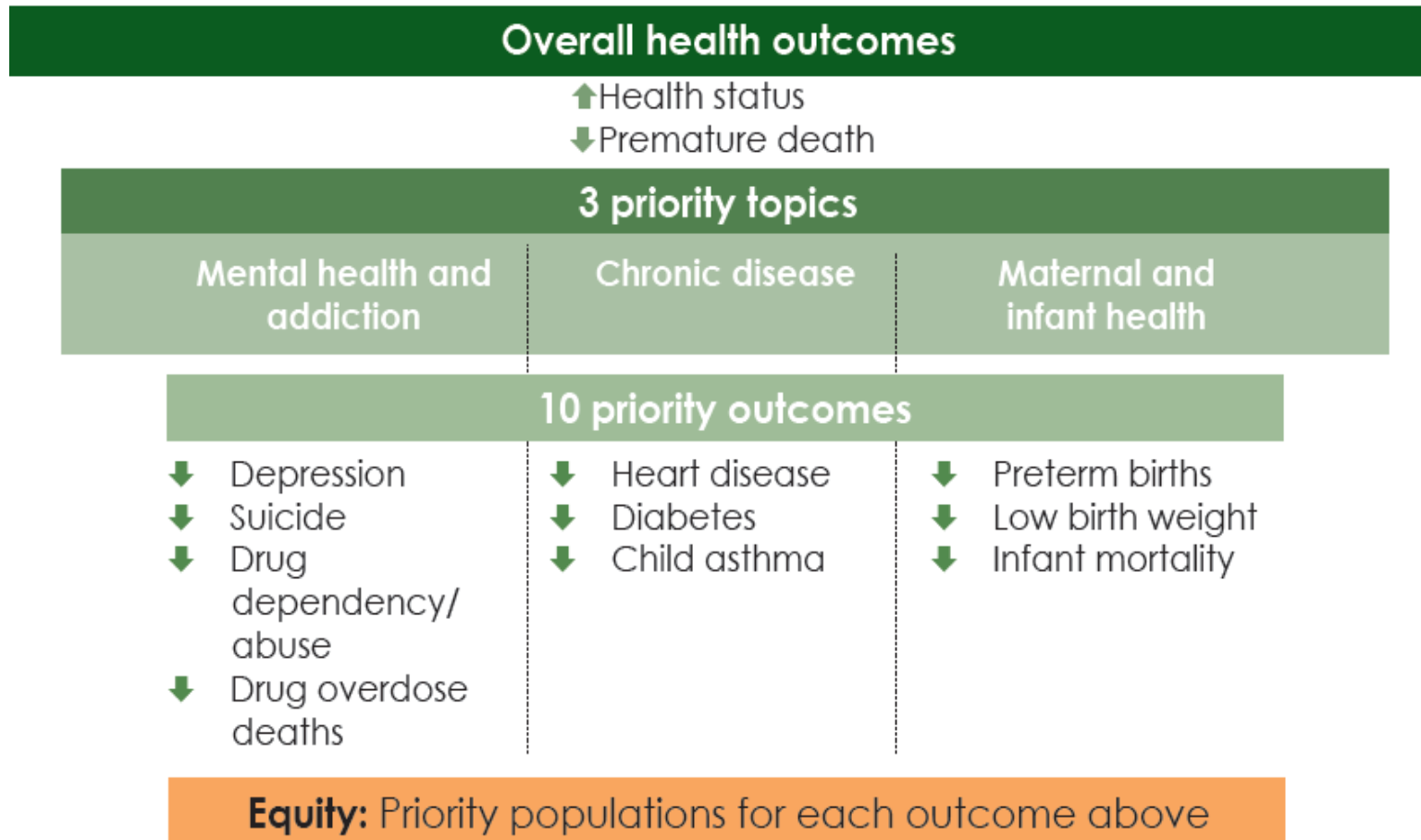# Legislator Healthcare Priorities and Goals - MMF study

…and for Democrats



Source: Pagel et al, ; AJPH – October 2017

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# If Population Health Improvement is Your Challenge for Innovation – You Have Done the Prioritization Work



Ohio 2017-2019 state health improvement plan (SHIP)

**Overall health outcomes**
- ↑ Health status
- ↓ Premature death

**3 priority topics**

| Mental health and addiction | Chronic disease | Maternal and infant health |
| --- | --- | --- |

**10 priority outcomes**

| | | |
| --- | --- | --- |
| ↓ Depression | ↓ Heart disease | ↓ Preterm births |
| ↓ Suicide | ↓ Diabetes | ↓ Low birth weight |
| ↓ Drug dependency/abuse | ↓ Child asthma | ↓ Infant mortality |
| ↓ Drug overdose deaths | | |

**Equity:** Priority populations for each outcome above

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# Think about State Policy Levers

To guide health technology innovation towards SHIP Goals

- Medicaid benefits and payment policies
  - In regulation but especially in MCO contracts
  - Learn from other states (Medicaid Evidence Decision Making Project)
- Public employee  benefits and payment policies
- Commercial insurance regulation
- Provider licensure
- Investment
  - Data analytics (with a purpose – the "business use case")

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# 1. Telehealth

Promises:

- Create patients greater access to prevention, early detection, and health literacy
- Expand access to clinical care to lower-resource and rural areas
  - Provide more access to quality care at a lower cost
  - Lower the number of ER and urgent care visits
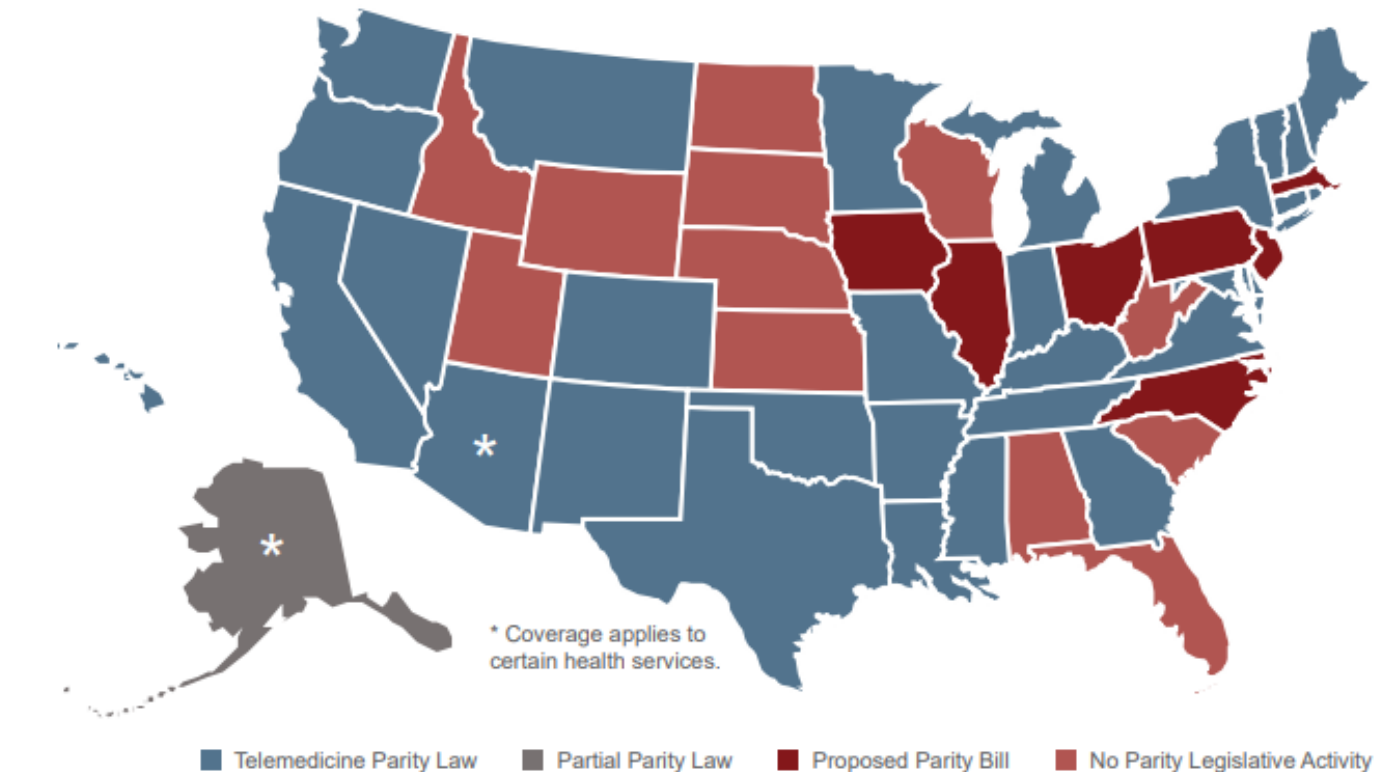- Patient convenience
- Provider Productivity

Perils:

- Those who could benefit most from telehealth are often in marginalized /poor communities, on far side of "digital divide"
- Developing the evidence base – when does it work and when is it additive?
- Matching evidence to payment and benefit policies
- Training and start up costs.

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# How Could Telehealth Work for SHIP?

- Opportunities to promote telehealth for chronic and MCH conditions identified in SHIP

- Medicare Payment Advisory Commission: states' rural providers rarely use current telehealth capabilities

- A National Association of State Alcohol and Drug Abuse Directors found that only 18% of respondents reported use of telehealth to treat substance use disorders

- Opportunities to build on Comprehensive Primary Care efforts in state (CPC+ and Medicaid)

Exhibit 2. States With Parity Laws for Private Insurance Coverage of Telemedicine (2016)[70]



* Coverage applies to certain health services.

■ Telemedicine Parity Law    ■ Partial Parity Law    ■ Proposed Parity Bill    ■ No Parity Legislative Activity

Adapted with permission from the American Telemedicine Association.

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# MMF Case Study: Chatham County, Georgia Inmates Project

This project sought to provide a continuity of care system to the inmates in Chatham County Jail to reduce homelessness and chronic health issues and improve health outcomes for lower-income populations

The jail health information exchange was integrated with the countywide system, The Georgia Regional Academic Community Regional Health Information Exchange (GRAChIE)

This allows medical staff, inside and outside the prison system, to access every detainee's/former detainee's medical history in real time

This system improves coordinated patient care, reduces duplicate treatments, and helps avoid costly mistakes

Possible next step – telehealth access facilitated through GRAChIE.

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# 2. Transportation and Technology

Promises:

- Greater mobility increases access to healthcare, jobs, and education
- Study of all cities with a population > 100,000, ride-hailing services reduced fatal drunk driving crashes by 10-11%
- Increase independence of elderly, disabled populations and those who are geographically isolated
- Lyft has partnered with Allscripts to provide rides to 7 million patients
- Uber Health has created a HIPAA compliant dashboard that allows providers to book patient rides
- These services hope to increase access to care and cut down on missed appointments

Perils:

- How will an increase in ride-sharing access impact public transit and the taxi industry?
- Ride-sharing has increased vehicle miles traveled, increasing pollution and congestion on the road. Is it possible to increase mobility while reducing vehicle miles traveled?
- Who will be billed for ride-sharing transportation to and from healthcare providers? Fraud and Abuse?
- How can we ensure patients' information is protected?
- How can we ensure patients with disabilities can use ride-share services (i.e. wheelchair accessible)

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# How Could Transportation Technology Work for SHIP?

- Nationally, 3 million people do not receive care due to transportation issues – chronic disease tx compliance issue

- Lack of transportation is a major barrier to those completing drug addiction treatment
  - An Uber/Lyft ride pilot program in Cleveland increased attendance rate for patients completing IOP for addiction from 76% to 90%

- Based on evidence or as pilot: Covered benefits with specific terms and conditions in your MCO contracts consistent with SHIP priorities

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# Data Analytics

Promises:

- 1/3 of payers are using a combination of census, socio-economic, and clinical data to create new programs that will lower healthcare spending and increase access

- Data can be used to improve health in clinical and non-clinical settings

- Public entities are building integrated data systems using them for predictive modeling

Perils:

- In order to be effective, data analytics platforms will need to be readily available to all stakeholders, continuously updated, user friendly, easily manipulated to look at different levels of granularity, and HIPPA compliant

- What changes in information governance are necessary to ensure health data is private and secure?

- Takes energy and focus (death by data use agreements)

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# How Could Data Analytics Work for SHIP?

- By using patient data, local demographics, and community-based information data analytics can pinpoint high-risk areas for suicide, drug use, diabetes, food insecurity, lead-poisoning, and more
  - This image comes from an Ohio based study that used socioeconomic data and geospatial analyses to find high-risk areas for suicide

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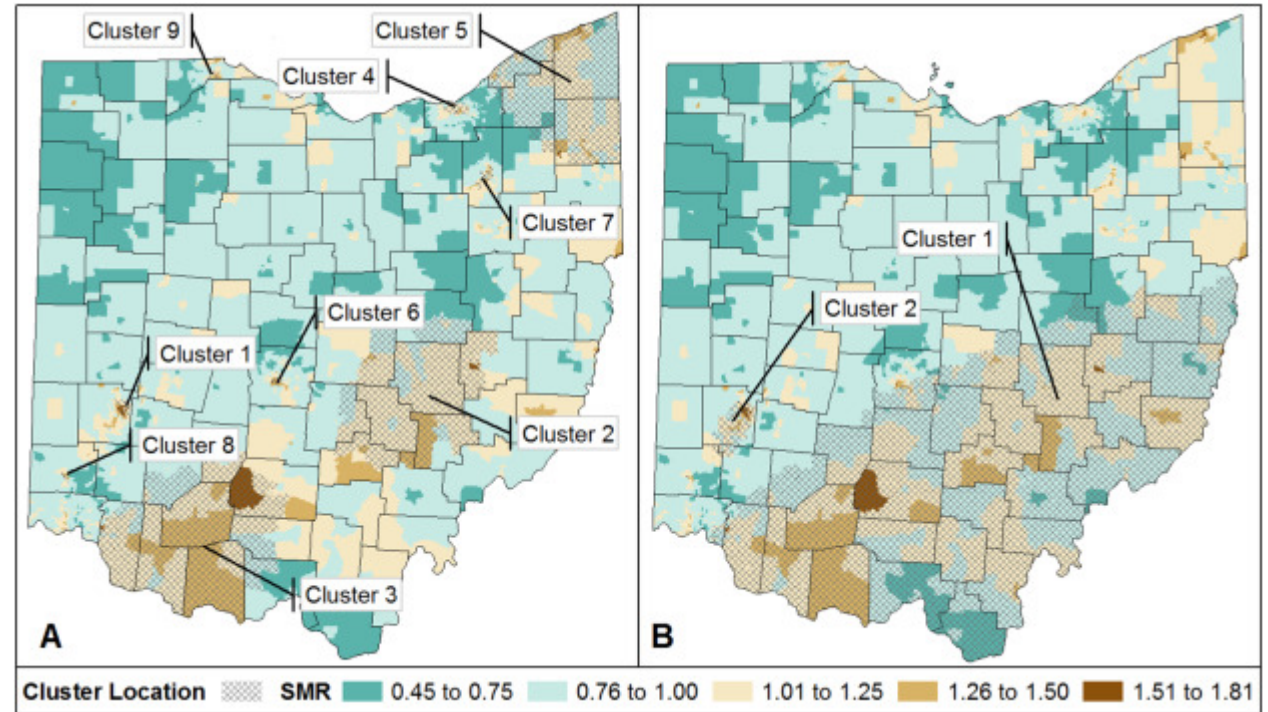
# MMF Case Study: Chicago's Childhood Lead Paint Data-Sharing Project

This project integrated health care, public health, and data science to develop a predictive model that identifies at-risk children for blood testing and at-risk homes for lead inspections

The project collected decades of lead test results from the state including:

- Addresses of kids who had previously tested positive
- City building and inspection records
- Wide range of census-derived demographic data
- Social service utilization data

Using data analytics, the project increased its capacity to determine the level of risk and limit lead exposure before kids are screened

The program is being rolled out slowly to help avoid unintended consequences, such as not being able to fulfill inspection requests

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# MMF Case Study: Washington State PRISM Project

"Without the intervention side, the technology is a toy, not a tool"

Washington added a predictive model to their Medicaid health homes model to target the top 5% of the Medicaid risk pool that account for most of the program's cost, this was known as the Predictive Risk Intelligence System (PRISM)

The model used health records from Medicaid, mental health programs, and long-term services in addition to records from Medicare claims data

This is the first time a state program combined Medicare and Medicaid data to align the financial incentives of both programs and to better provide care coordination for dual-eligible beneficiaries

This provided a system of care coordination that saved money by reducing unnecessary ER visits, increasing medication adherence, and improving overall health status

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# When Moving Forward - Be Deliberate!
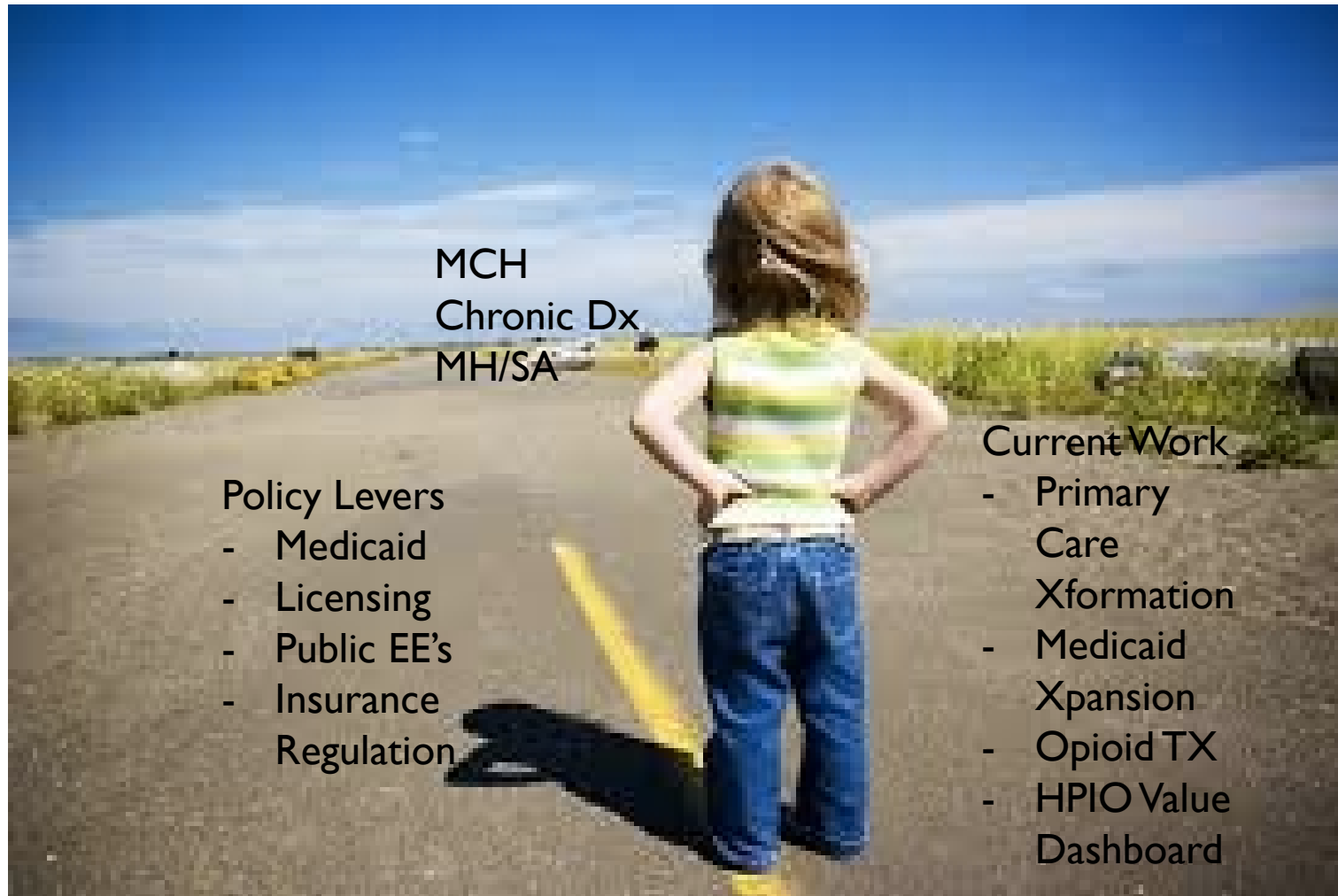


MCH
Chronic Dx
MH/SA

Policy Levers
- Medicaid
- Licensing
- Public EE's
- Insurance Regulation

Current Work
- Primary Care Xformation
- Medicaid Xpansion
- Opioid TX
- HPIO Value Dashboard

# Takeaways

1. Technology Innovation is not an end in itself, but of service to a goal.
2. If better population health is the goal, put technology to service of it through public policies
3. OHIO SHIP provides that framework
4. Think of the levers you have to guide these innovations toward your SHIP priorities
5. Opportunities in all three areas – Telehealth, Transportation and Data Analytics
6. If evidence is unclear, pilot carefully and thoughtfully.

# Contact Information

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