

BUILDING THE PUBLIC HEALTH SYSTEM OF THE FUTURE

Health Care Unscrambled 2022

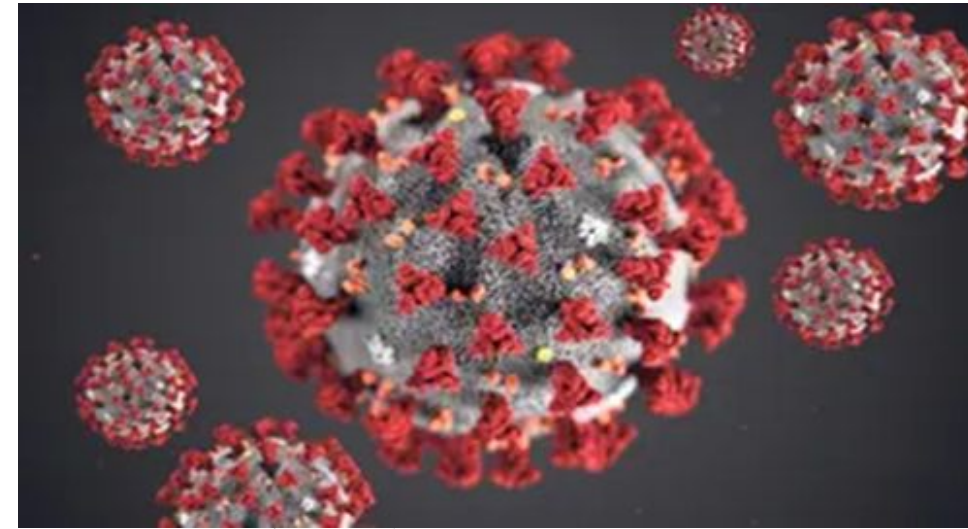
**Georgians For A Healthy Future
January 11, 2022**

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Executive Director**



The Practice Environment For Public Health Today

- A renewed focus on Infectious diseases
- Chronic diseases & injury still predominate
- Social determinants visible as an underlying health factor
- Health risks globalized
- Aging and more diverse population

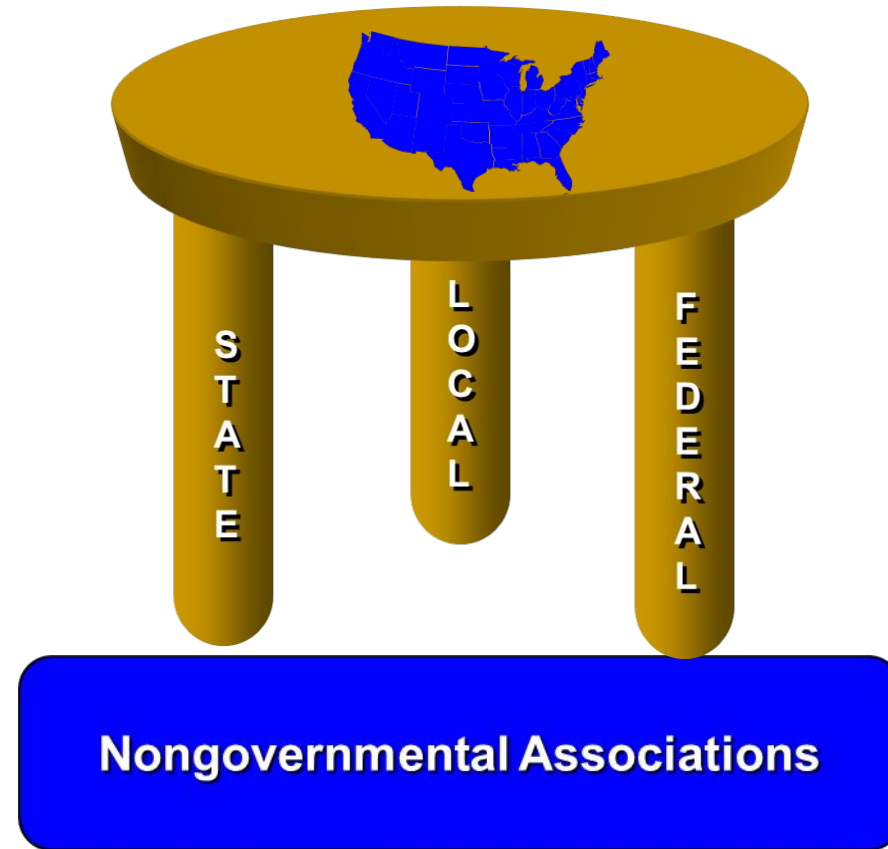


The Practice Environment For Public Health Today

- Social media & Internet now drives health behavior
- Disruptive technologies abound
- Public health is now visible
- Health policy now **OVERTLY VERY** political



Federal, State & Local Partnership

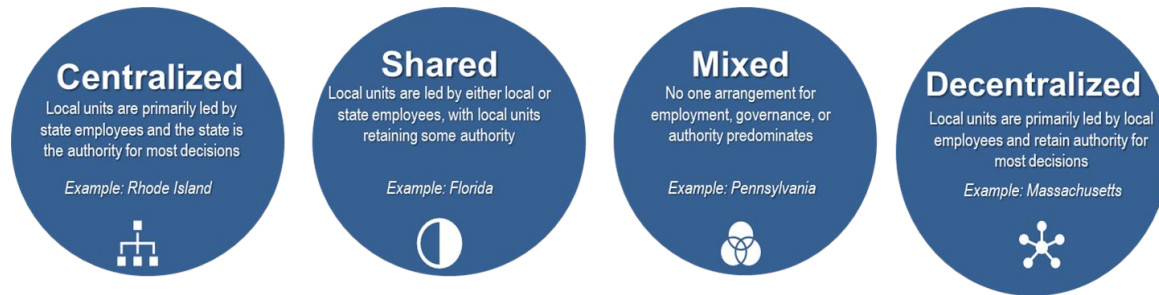


The Public Health System Developed Over Time

- The overall system is not designed or resourced to meet strategic needs of the nation
- Patchwork of programs and funding streams to address health promotion, disease prevention and health protection
- Emergency preparedness capacities also developed over time through a series of episodic funding streams
 - Federal funding reduced by 50% for hospitals & 33% for public health since 2003

Governance & Management

- Governmental public health - Has the legal responsibility for the health of the community
- Governed locally & managed as a partnership
- Relies on some nonprofit organizations to expand its operational & early warning capacities:
 - ASTHO
 - NACCHO
 - APHL
 - CSTE
 - CDC Foundation

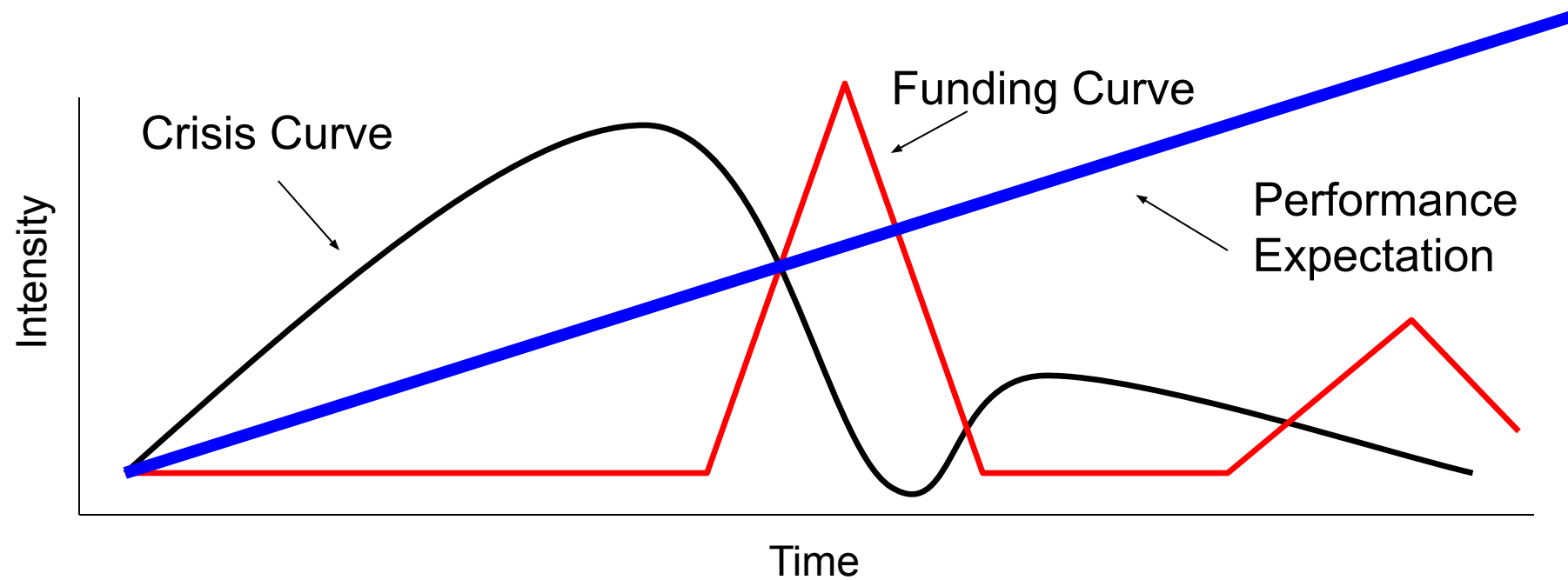


Public Health Legal Authority Now Threatened

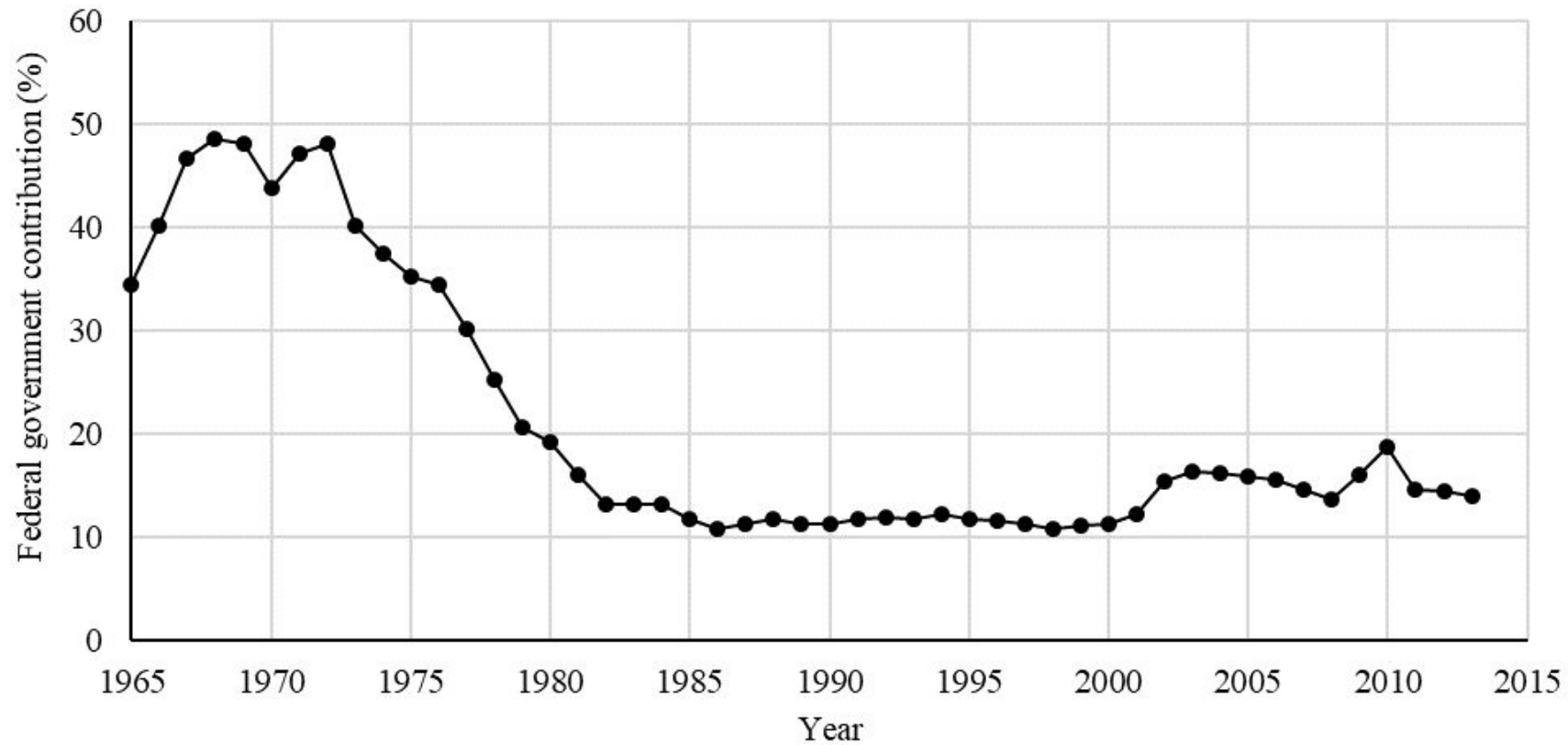
Jacobson vs Massachusetts - 1905



Public Health Still Operates In An Incongruent Fiscal Environment

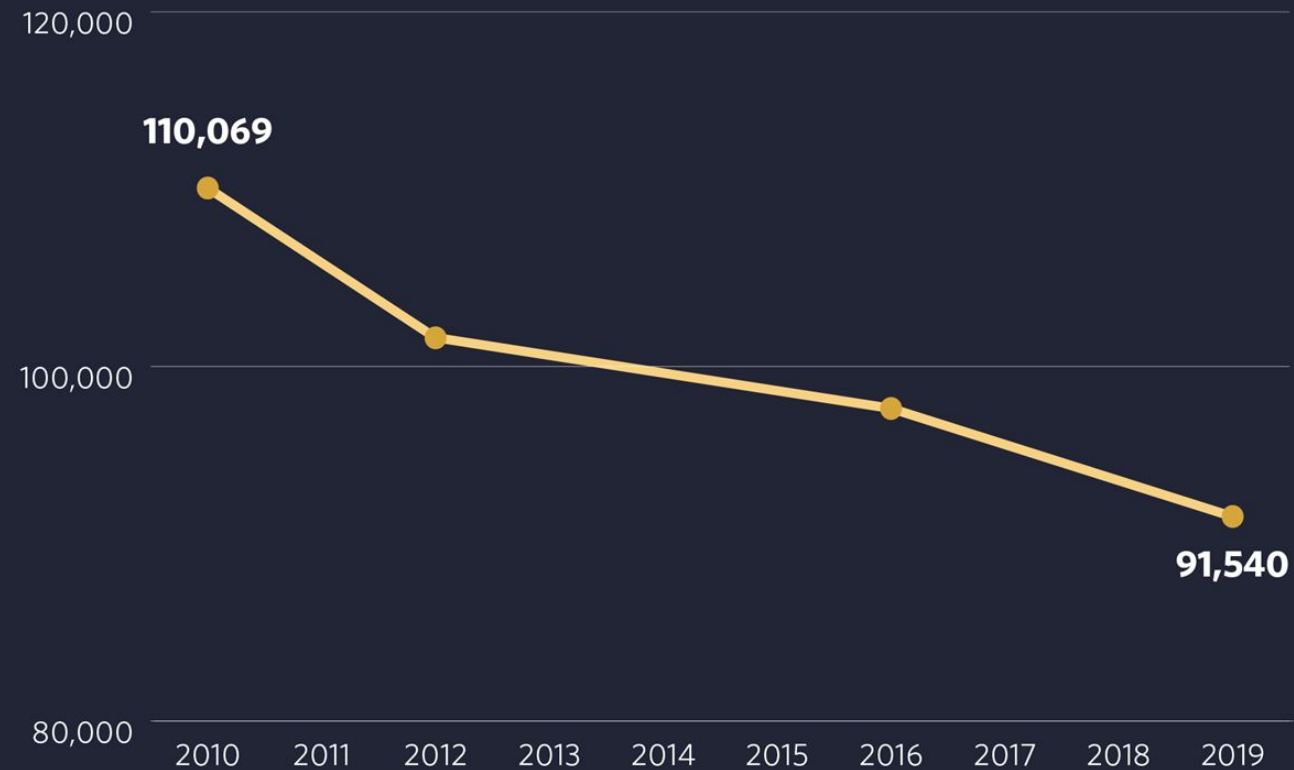


Public Health Infrastructure Inadequate Funding



State Public Health Workforce Declines

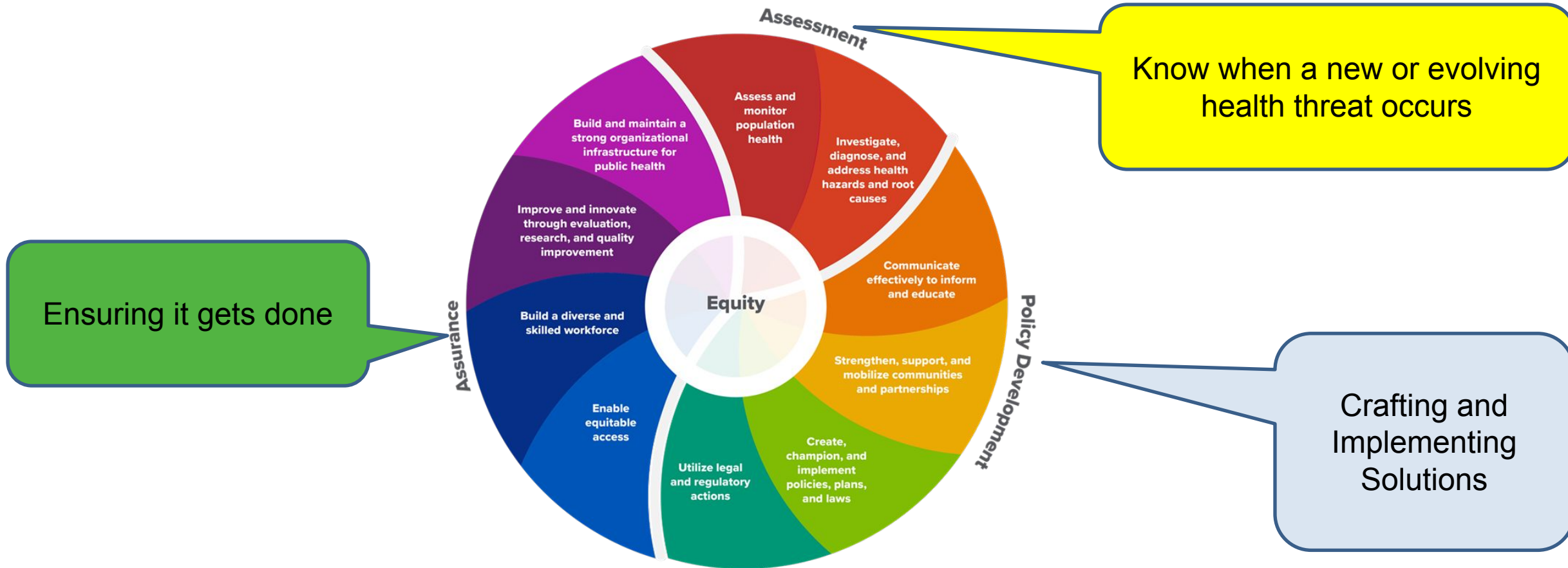
The number of full-time state public health care workers dropped by more than 16% in the decade before the COVID-19 pandemic.

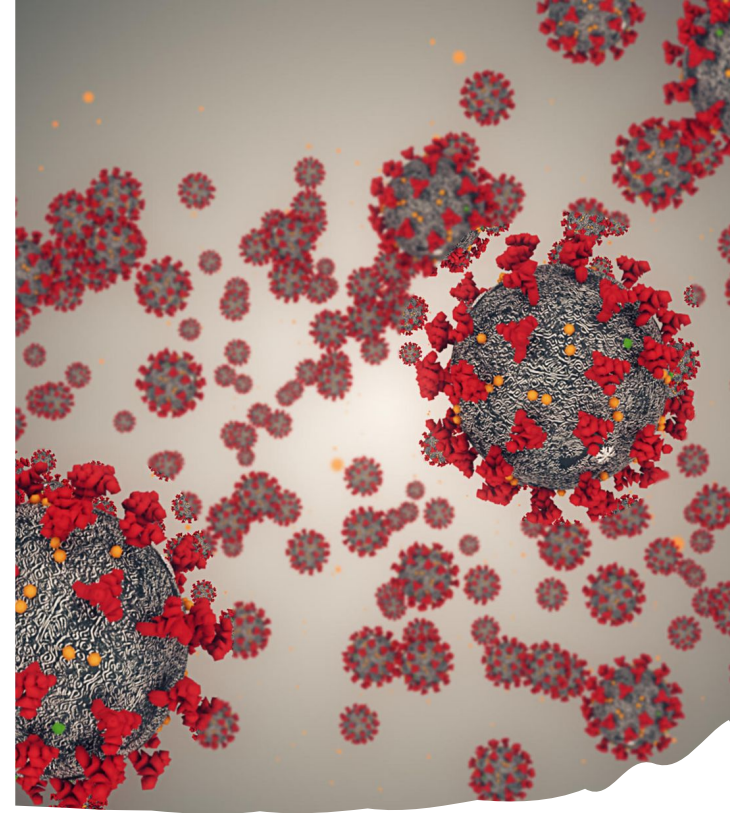


Source: The Association of State and Territorial Health Officials surveys

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Basic work has not changed





**December 2019: Cluster
of Severe Pneumonia
Wuhan China**

COVID-19 – Worse Pandemic In Over 100 Years

Johns Hopkins
1/6/21

Globally

>297,964,211 million cases

>5,467,412 million deaths

USA

>57,762,144 million cases

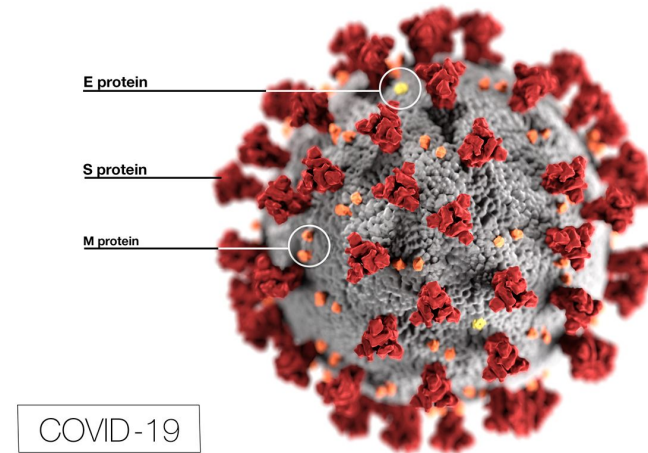
>832,148 deaths

Overall Systems Failures

- Failure of leadership & accountability
- Pandemic preparedness not based on a universal pandemic model
- Much of what happened was predictable based on history, prior emergency experience and evaluations
- Not a failure of science and technological discovery
- Major failure of resources, capacity building, deployment of science and technology & the processes of readiness for preparedness and response
- Single points of failure – Testing, supply lines

Five Examples

- Pathogenic disease surveillance & laboratory capacity
- Data & information capacity
- Science & risk communication
- Health inequities
- Vaccinations



Pathogenic Disease Surveillance Capacity Limited

- Siloed disease reporting systems
- Advance molecular detection capacity limited
- Genome sequencing capacity & variants cataloging rudimentary
- Modelling capacity limited

Disease Surveillance & Laboratory Capacity

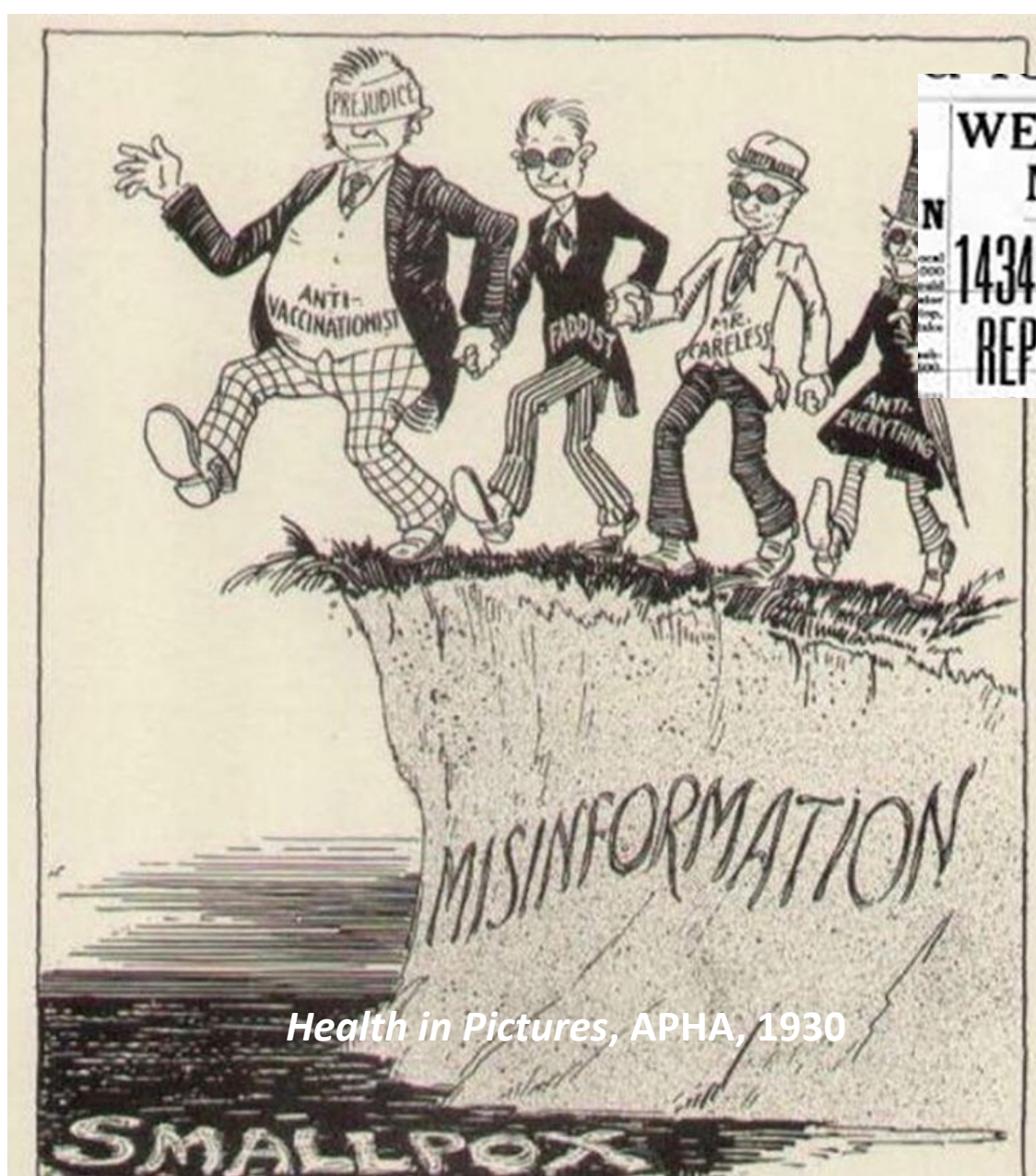


- Pre-analytic capacity - Supply chain fragile, federal stockpile inadequate, regulatory model for testing in emergencies problematic
- Analytic capacity - Had technical knowledge but inadequate access to best technology and limited capacity to scale up

Data Sharing: A Major Problem



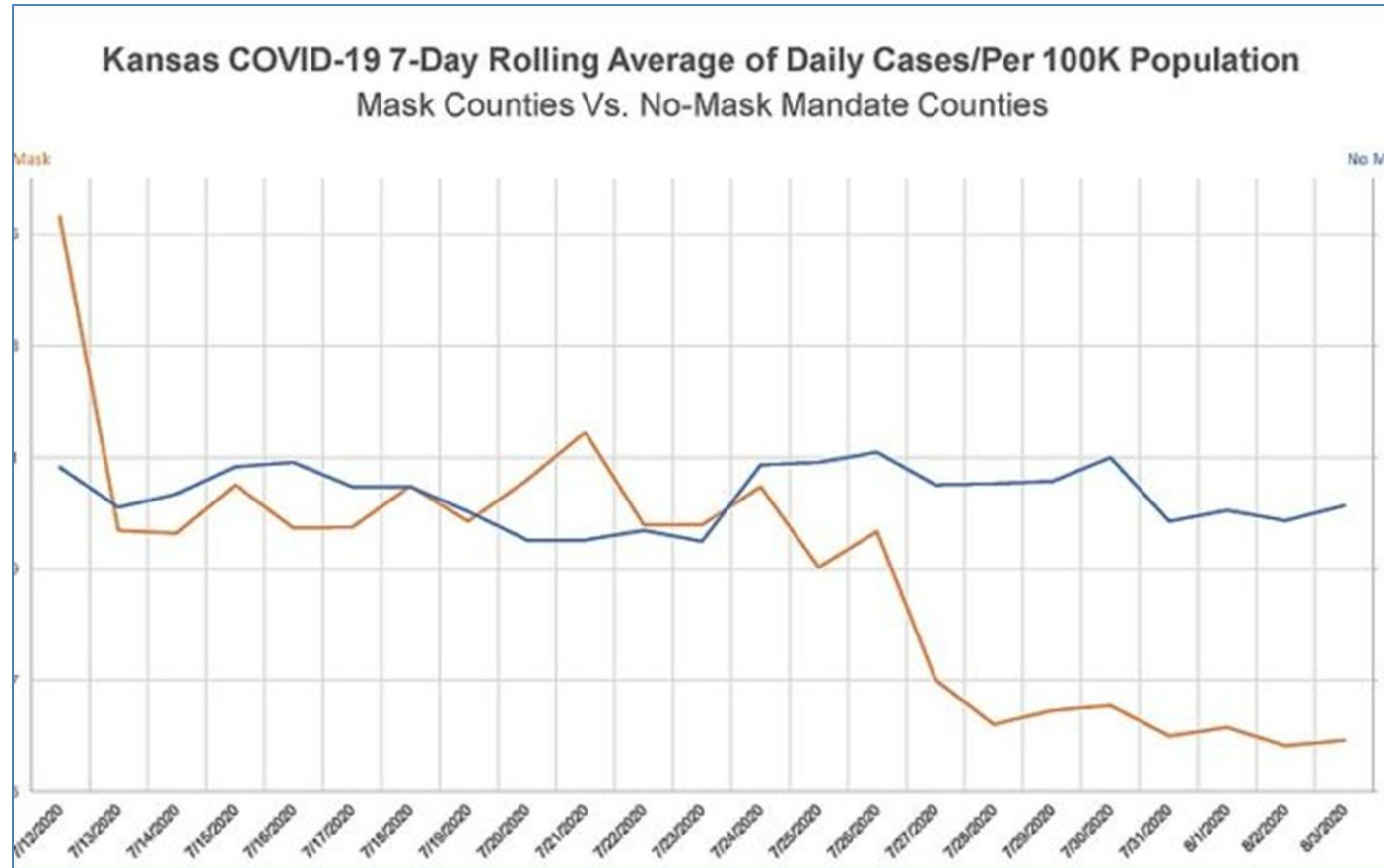
- **Old data systems**
- **Paper based systems**
- **Inadequate interoperability**
- **Demographic data (race & ethnicity) often incomplete**
- **Inadequate surveillance systems**



Health in Pictures, APHA, 1930



Communicating Evolving Knowledge: Actually, Masks Work



The Communication Challenges Continue



***For C.D.C.'s Walensky, a Steep Learning Curve
On Messaging - New York Times 1/6/21***

Societal Determinates Drove COVID-19 Inequities

- **Exposure**
 - Public facing occupations
 - Delayed sheltering in place
- **Susceptibility**
 - Prevalence of chronic disease
- **Social conditions**
 - Lack of paid sick leave
 - Poverty
 - Housing situation
 - Structural Racism



COVID-19 Cases, Hospitalizations, and Deaths by Race/Ethnicity

Rate ratios compared to White, Non-Hispanic persons	American Indian or Alaska Native, Non-Hispanic persons	Asian, Non-Hispanic persons	Black or African American, Non-Hispanic persons	Hispanic or Latino persons
Cases ¹	1.9x	0.7x	1.1x	1.3x
Hospitalization ²	3.7x	1.1x	2.9x	3.2x
Death ³	2.4x	1.0x	1.9x	2.3x

Race and ethnicity are risk markers for other underlying conditions that affect health, including socioeconomic status, access to health care, and exposure to the virus related to occupation, e.g., among frontline, essential, and critical infrastructure workers.

How to Slow the Spread of COVID-19



Wear a mask



Stay 6 feet apart



Avoid crowds and poorly ventilated spaces



Wash your hands



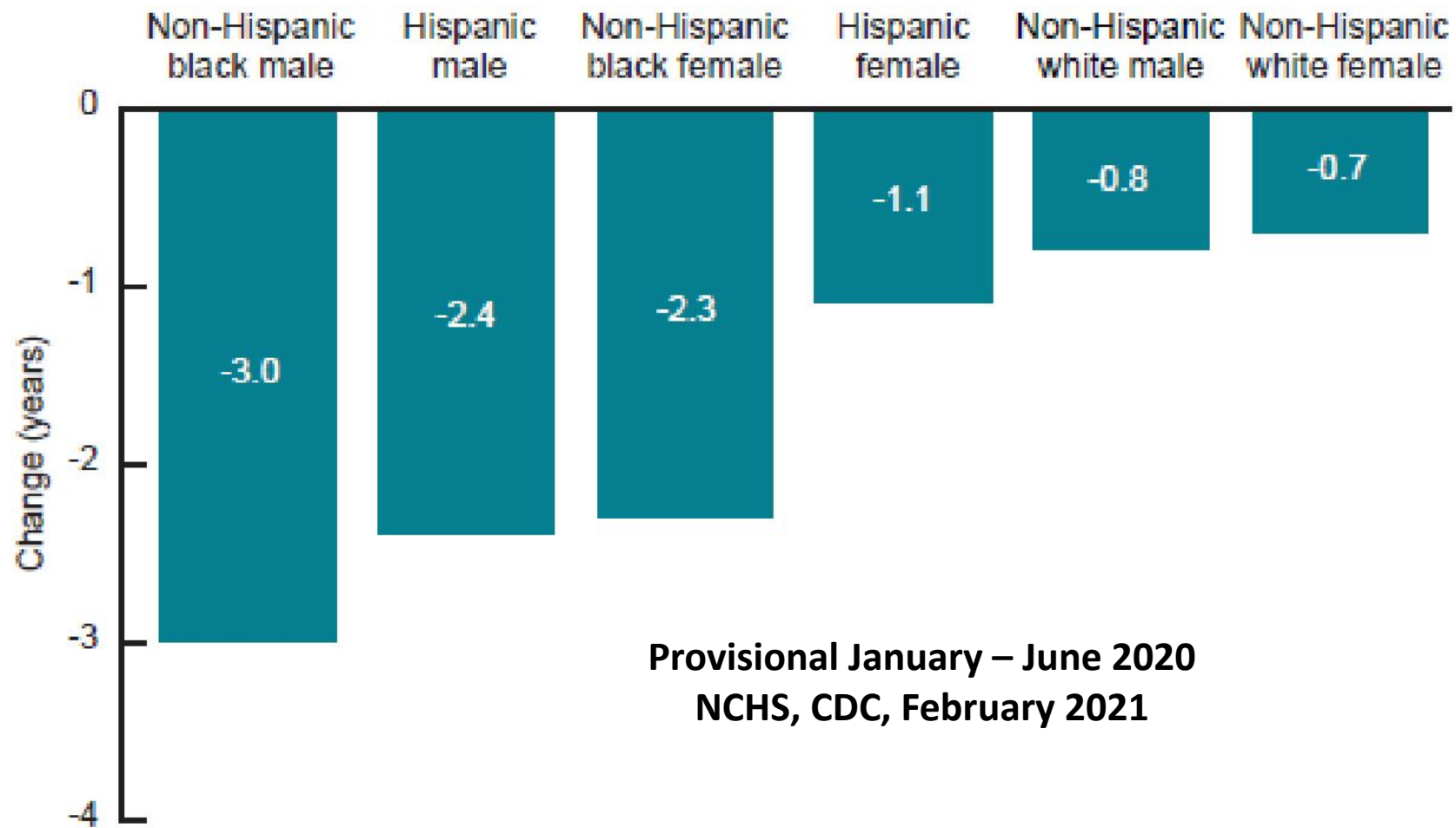
cdc.gov/coronavirus

CS319360-A 02/12/2021



APHA

Figure 4. Change in life expectancy at birth, by Hispanic origin and race and sex: United States, 2019 and 2020





Fast Science Works: Operation Warp Speed



**Sound strategic decision to
accelerate vaccine discovery & access
Built on 20 years of financial investments and
partnerships in basic and clinical research**

Research - Practice Divide

Getting Shots Into Arms Did Not Get The Same Level Of Early Focus

- Initially, inadequate planning for shot delivery
- Risk communications science untimely use
- Public health systems research knowledge not used effectively for immunizations

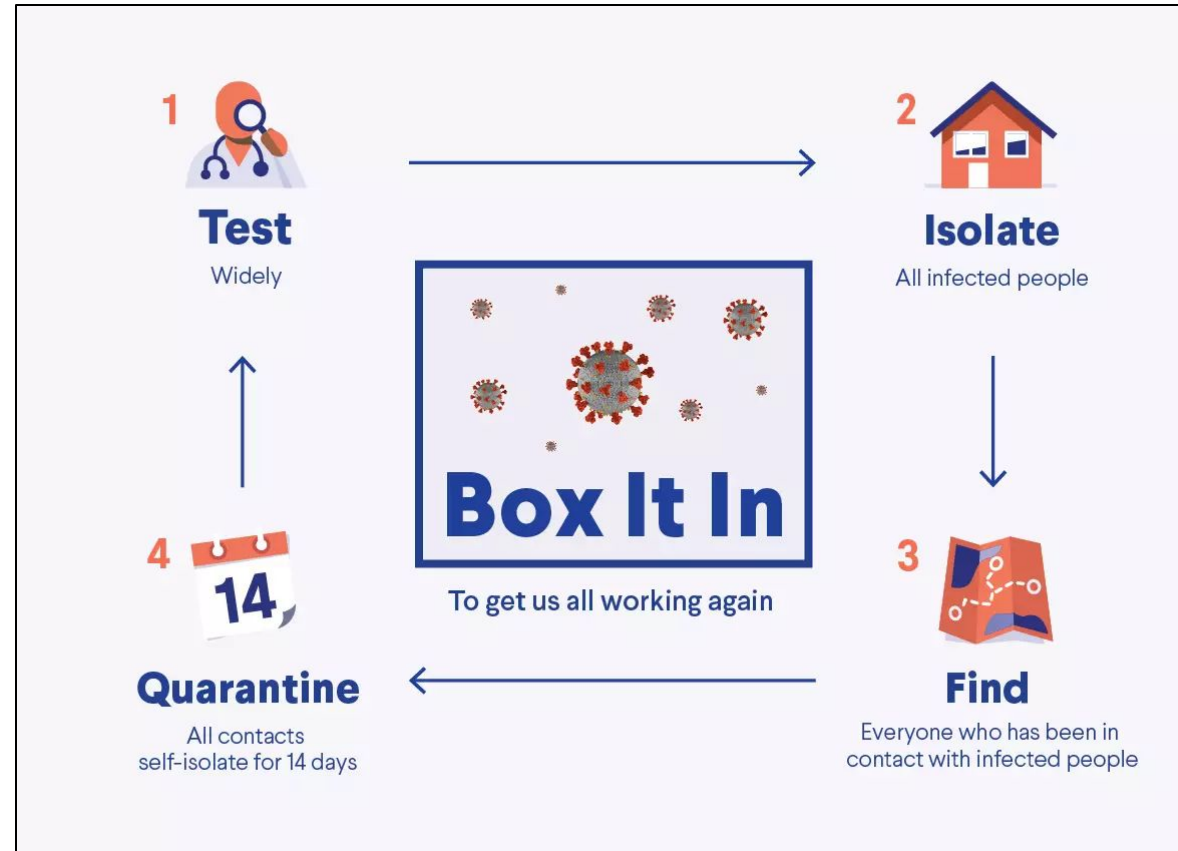


Handwashing Works

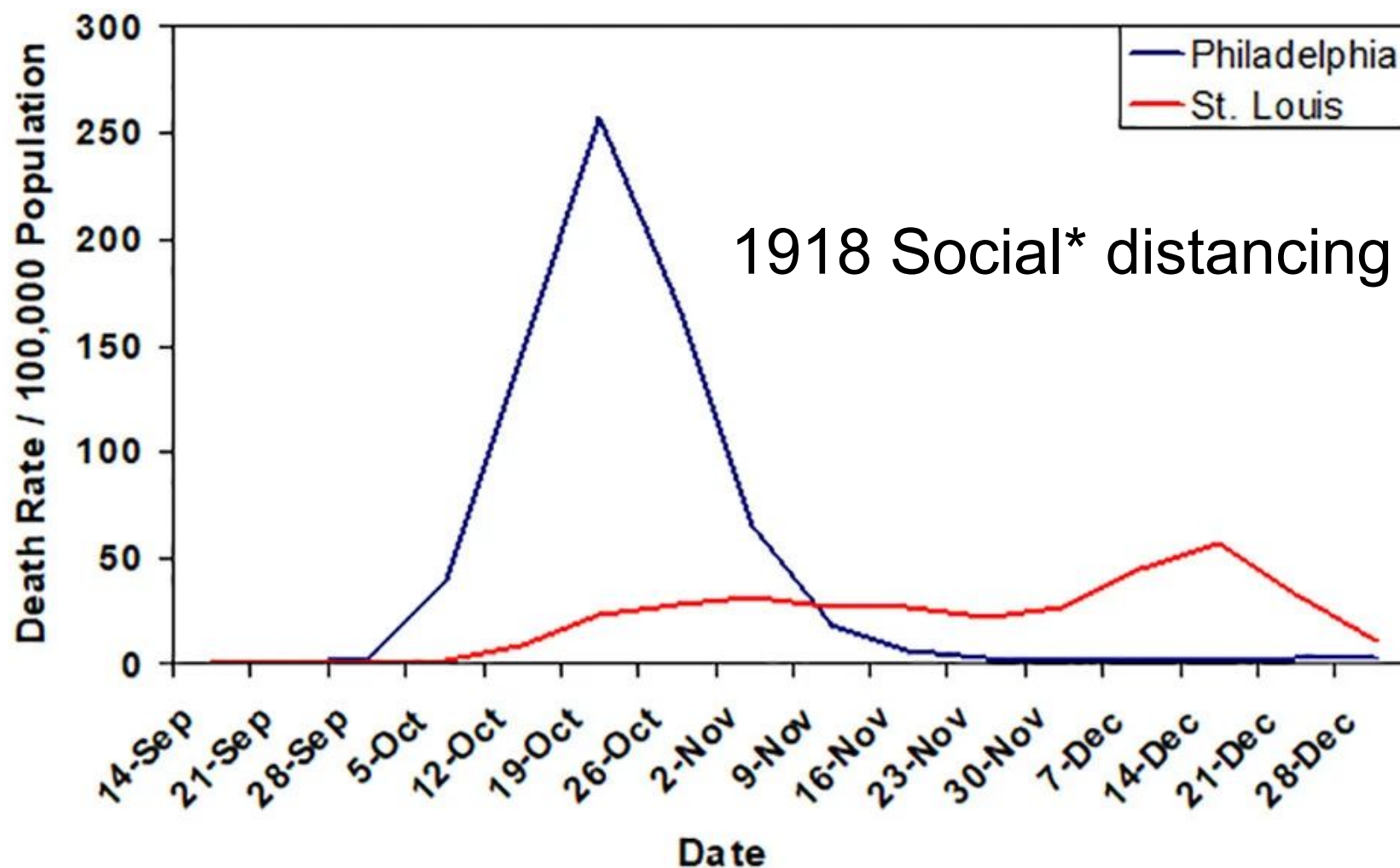


- We frequently touch our eyes, nose, and mouth without knowing it
- Viruses & other germs from unwashed hands can get onto objects – Doorknobs, handrails, surfaces tops, or toys

Containment Strategies Work

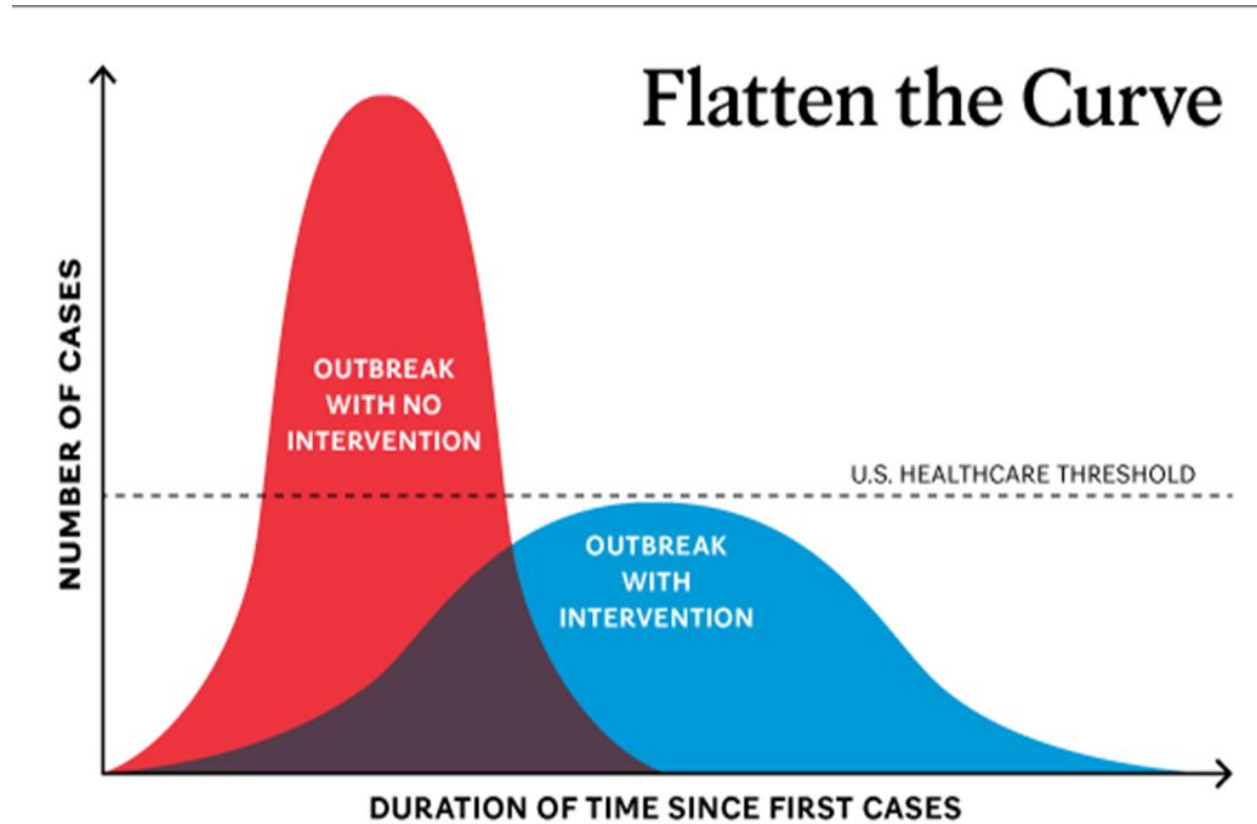


Social Distancing Works



* Now physical

Reduce Health System Burden



Adapted from CDC

Therapeutic Interventions Better Over Time

- General supportive care
- Pulmonary management
- Antiviral agents
- Steroids
- Antibody-rich plasma
- Monoclonal antibodies



Operation Warp Speed Worked



**Sound strategic decision to
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Vaccines Safe & Effective

National Vaccination Status Eligible Population

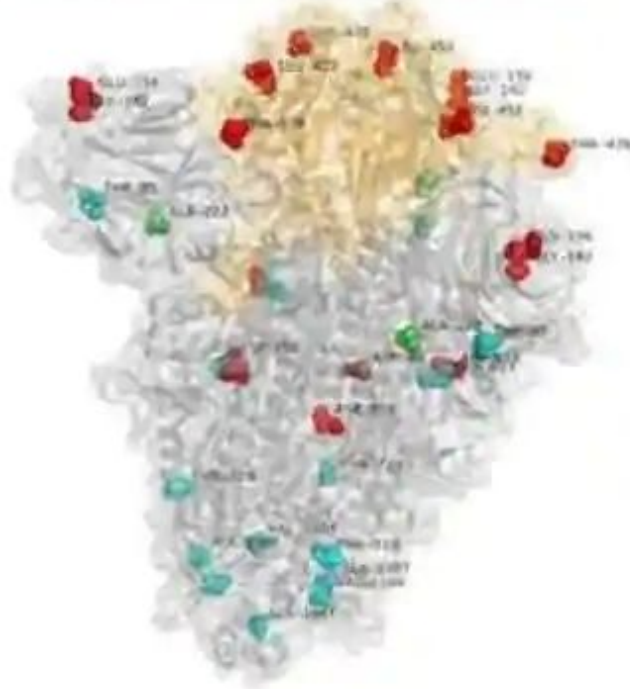


Harvey Zigler – 100 y/o
Community Activist

206 Million fully vaccinated
-78% 1 dose
-66% Fully
-Boosted 38%

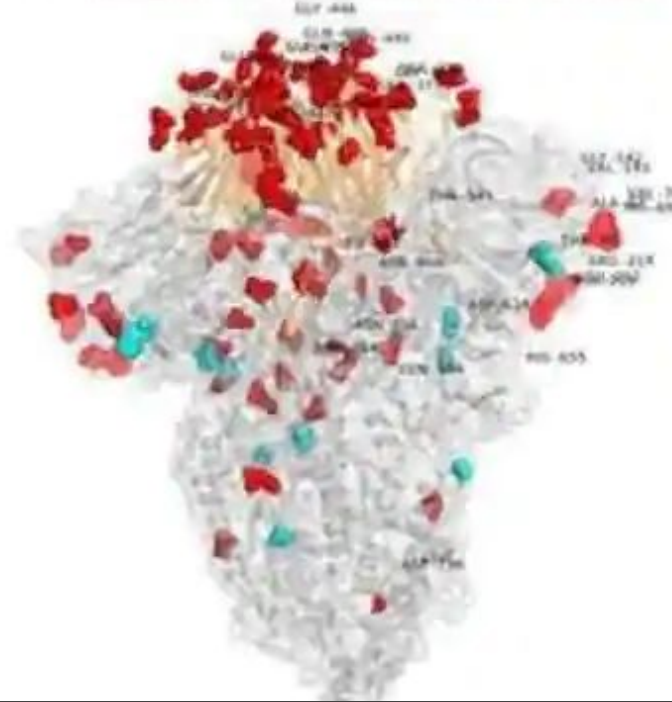
Delta

18 aa mutated residues in the Spike protein
8 residues in >60% of available sequences



Omicron

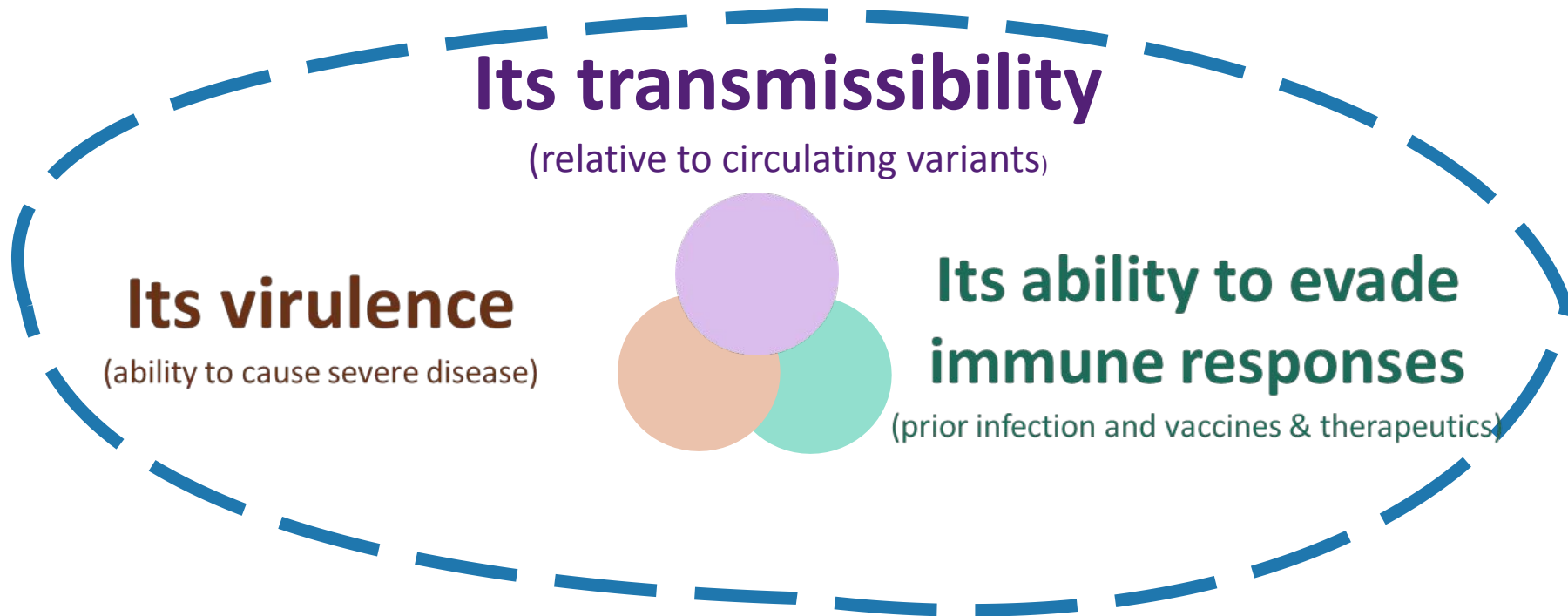
43 aa mutated residues in the Spike protein
34 residues in >60% of available sequences



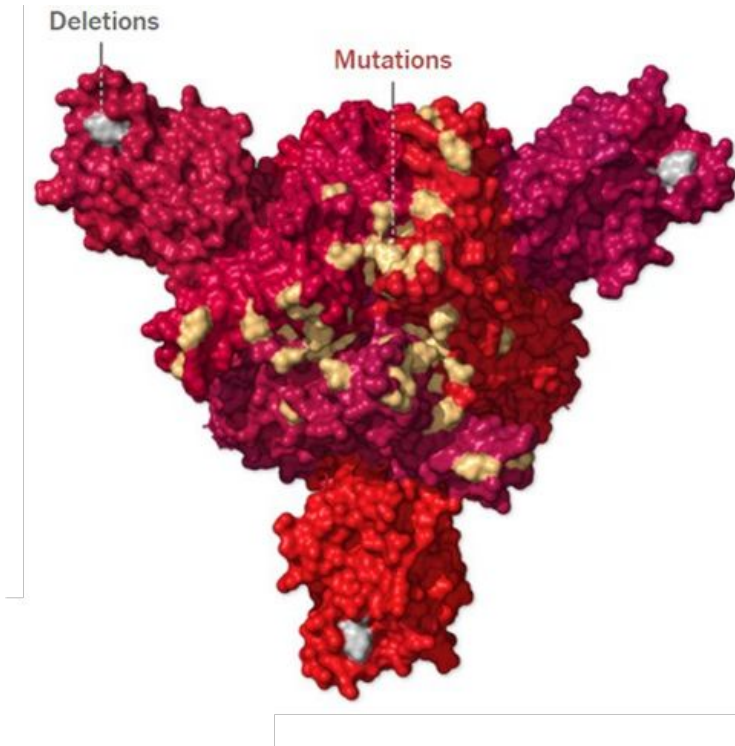
**Pandemic
to
Endemic????**

- Omicron - More infectious & less pathogenic
- Mutagenic potential not linear

Key Properties That Influence The Pathogenicity Of Infectious Viruses



All Viruses Evolve Over Time



- The more the virus circulates, the more the virus evolves
- Most changes have little to no impact on the virus's properties or behavior
- However, some changes to SARS-CoV-2 lead to the emergence of variants that may affect:
 - Transmissibility
 - Disease severity and presentation
 - Effectiveness of vaccines, therapeutics, diagnostic tools or public health and social measures
- Several SARS-CoV-2 variants have been identified and some have been characterized by WHO as variants of interest (VOI) or variants of concern (VOC)

Prevention Strategies to Slow U.S. Spread of Omicron Variant

- Vaccination
 - Recommended for everyone aged ≥ 5 years
 - Boosters recommended for all persons aged ≥ 12 years
 - ≥ 2 months after initial Janssen vaccine, or
 - ≥ 5 months after completing primary series of Pfizer-BioNTech or Moderna
- Increased use of masking (N95 / KN95 preferred and cloth multiple layers)
- Improved ventilation
- Wider and more frequent testing, including self-testing
- Adherence to guidance on quarantine and isolation

The Future of Public Health



A System That Is Robust and Sustainable

- Public health leader serves as **Chief Health Strategist**
- Agency structured to deliver 10 essential services
- Timely actionable data systems
- Harmonize statutory authorities across jurisdictions
- Adequate & sustainable funding
- Vibrant, cross-sector partnerships
- Accountable accredited systems



Such A System Would Be Able To Address Health Threats

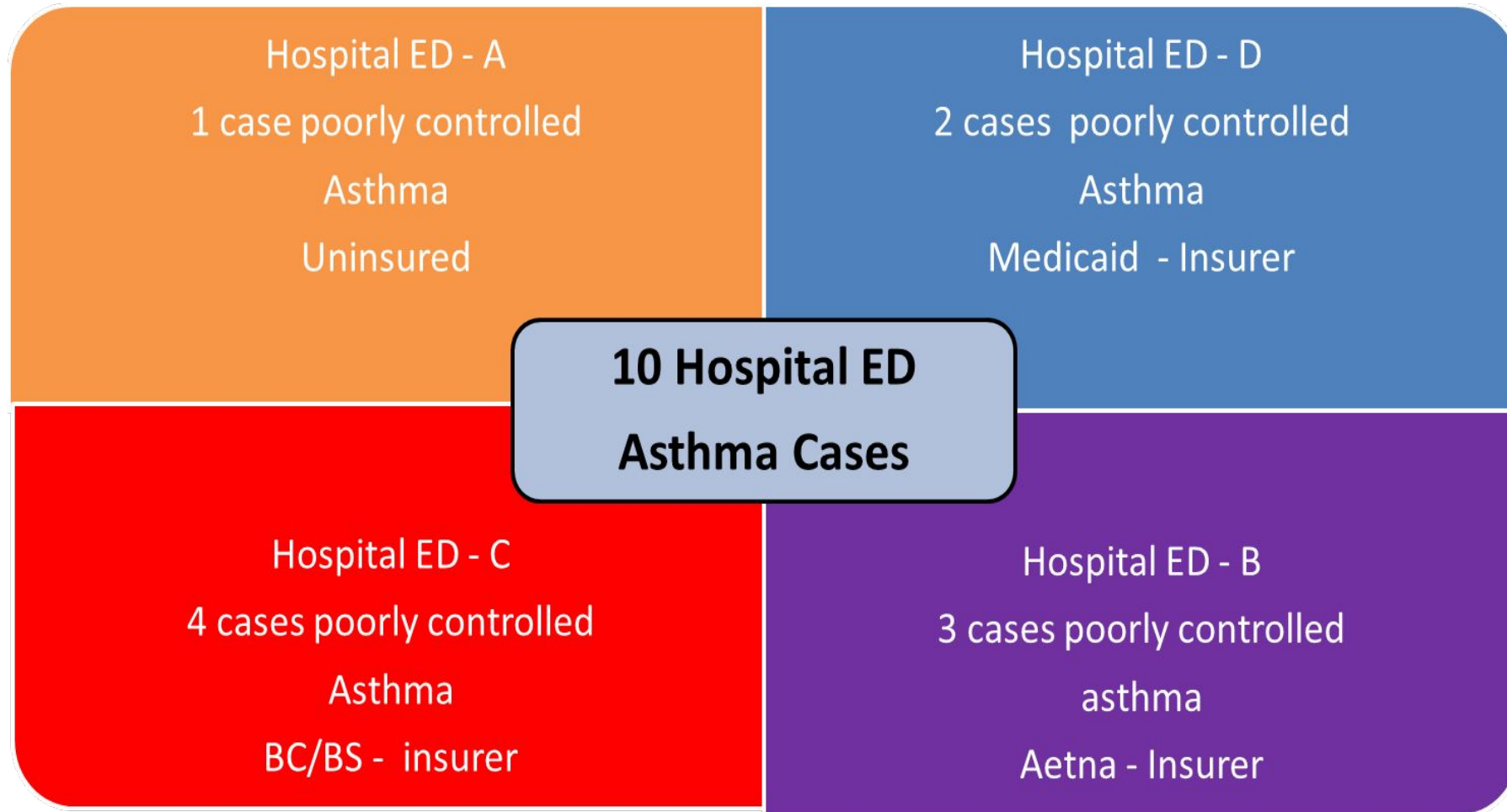


Asthma: A Common Clinical Condition

- Asthma is a common environmental sensitive condition
- Minorities disproportionately impacted
- Asthma attacks a significant barrier to school attendance
- Must know root cause of poor control by clinical & social determinates
- Allows one to craft broad solutions that address both



An Unrecognized Outbreak



Enter Public Health

- Health department notified
- Epidemiological investigation done
 - All cases occurred in kids going to the same school
 - Variance in where they lived
 - All resulted in school absence on similar days
- No single hospital or insurer would pick this up because of small sample size in each ED



All Kids Ride On Same Bus



Coordinated Community Resources Using Hero's Beyond Health Care



Bus mechanic

- School system
 - Private hospital
 - Public health
 - Transportation
-
- ✓ Reduced ED visits
 - ✓ Dollars saved
 - ✓ Health Improved & less disparity
 - ✓ Less school absenteeism
 - ✓ Transportation safer

Such An Integrated System Can Address Any Health Threat

- Emerging or reemerging infectious diseases
- Chronic diseases
- Severe weather from climate change
- Product contamination
- Injury epidemics - Intentional & unintentional
- Terrorism
- Toxic exposures



Central Challenge For The Nation

Structure and resource the nation's health and public health system to meet the strategic needs of the nation to perform its health security mission and build:

A Next Generation Public Health System

Why Invest In Public Health?

The Wall Street Journal: Fed Says U.S. Public Health Among Biggest Near-Term Risks To Financial System

“

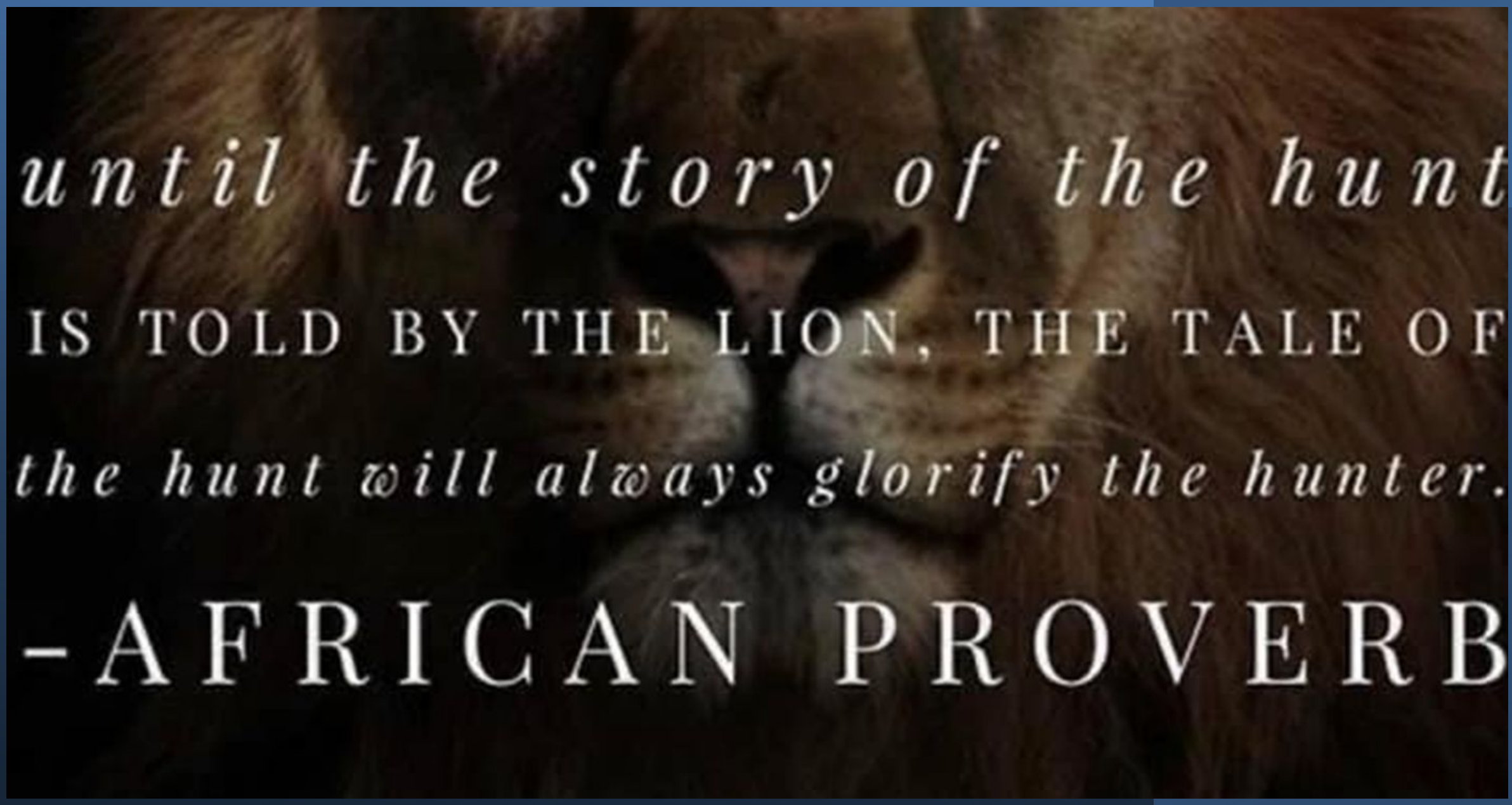
The potential for U.S. public health to worsen as the Covid-19 pandemic continues is one of the greatest near-term risks to the financial system, the Federal Reserve said, while noting that asset prices are susceptible to large declines should investor sentiment shift. Any deterioration in the public-health situation could slow the recent economic recovery, particularly if widespread business closures returned and supply chains were further disrupted, the Fed said. The number of new Covid-19 cases has fallen in recent months, but a resurgence this summer, tied to the Delta variant, coincided with a slowdown in hiring and economic growth.” (Ackerman, 11/8)

The Next Generation Public Health System

1. Radically transform and fully integrate U.S. public health & health care system data infrastructures
2. Have the comprehensive capacity to **rapidly** track & evaluate pathogenic organisms using **next generation** genetic tools
3. Have a **robust system to forecast disease** as a tool for prevention and early intervention
4. Strong & capable all hazards, **emergency preparedness leadership**
5. Enable public trust in science and government with improved public science literacy
6. Operationalize health equity throughout the public health & healthcare enterprise

Adopted from NAM letter to OSTP Director 5/21





*until the story of the hunt
is told by the lion, the tale of
the hunt will always glorify the hunter.*

-AFRICAN PROVERB



Questions



About APHA

The American Public Health Association champions the health of all people and all communities. We strengthen the public health profession, promote best practices and share the latest public health research and information. We are the only organization that combines a nearly 150-year perspective, a broad-based member community and the ability to influence policy to improve the public's health. Learn more at www.apha.org.



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