

# Towards Resilience in Health Systems

1. Lived Experience of “ED crowding”
2. Lessons learned(?) from the pandemic
3. Towards Readiness / Resilience



**Springing Forward –  
Using lived experiences  
to build a more resilient  
future**

COMMENTARY

# Emergency Department Crowding: The Canary in the Health Care System



# ED Crowding

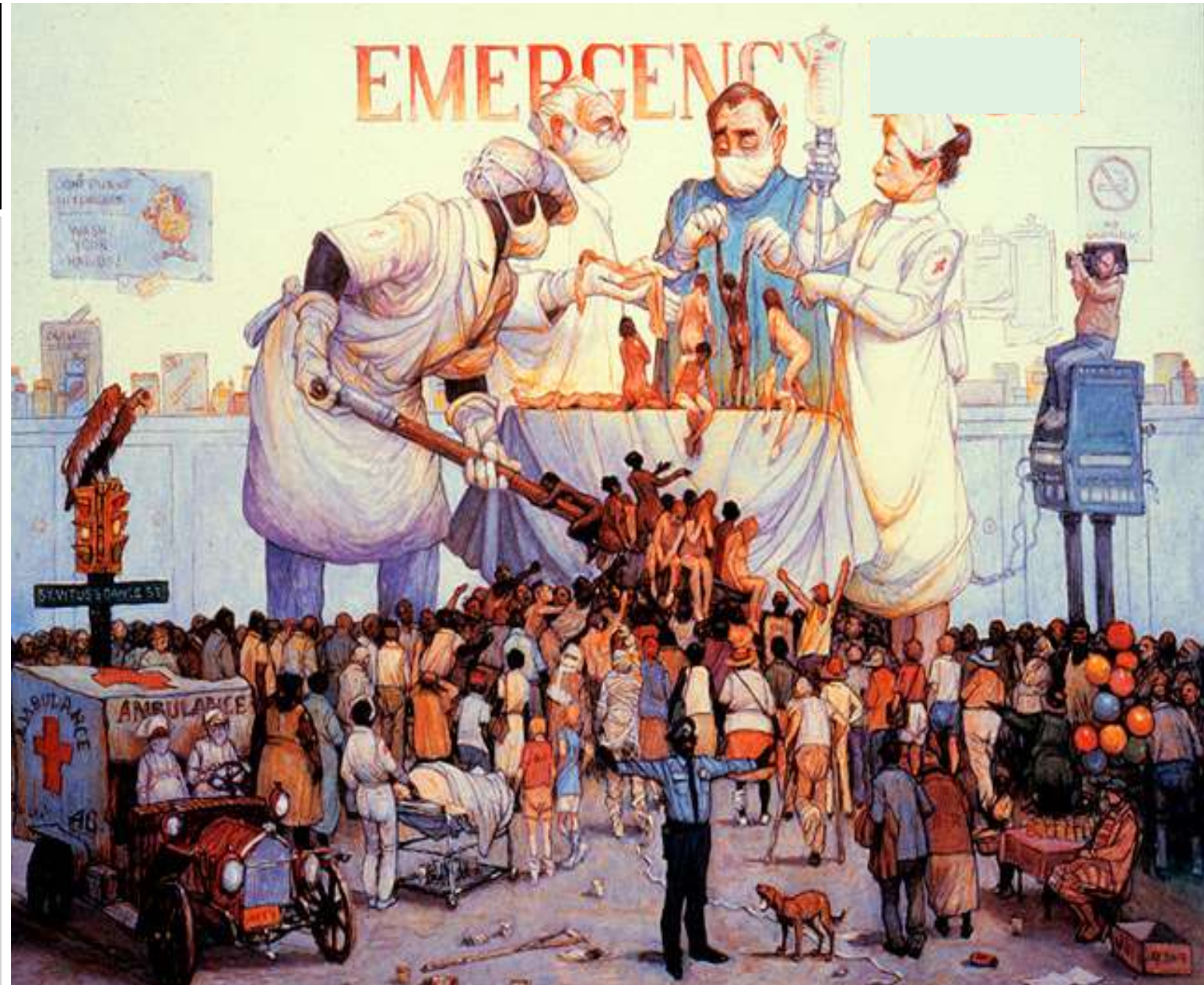
Towards Readiness/Resilience in Health Systems?

Every System is  
Perfectly  
Designed to  
Achieve the  
Results that it  
Consistently  
Achieves

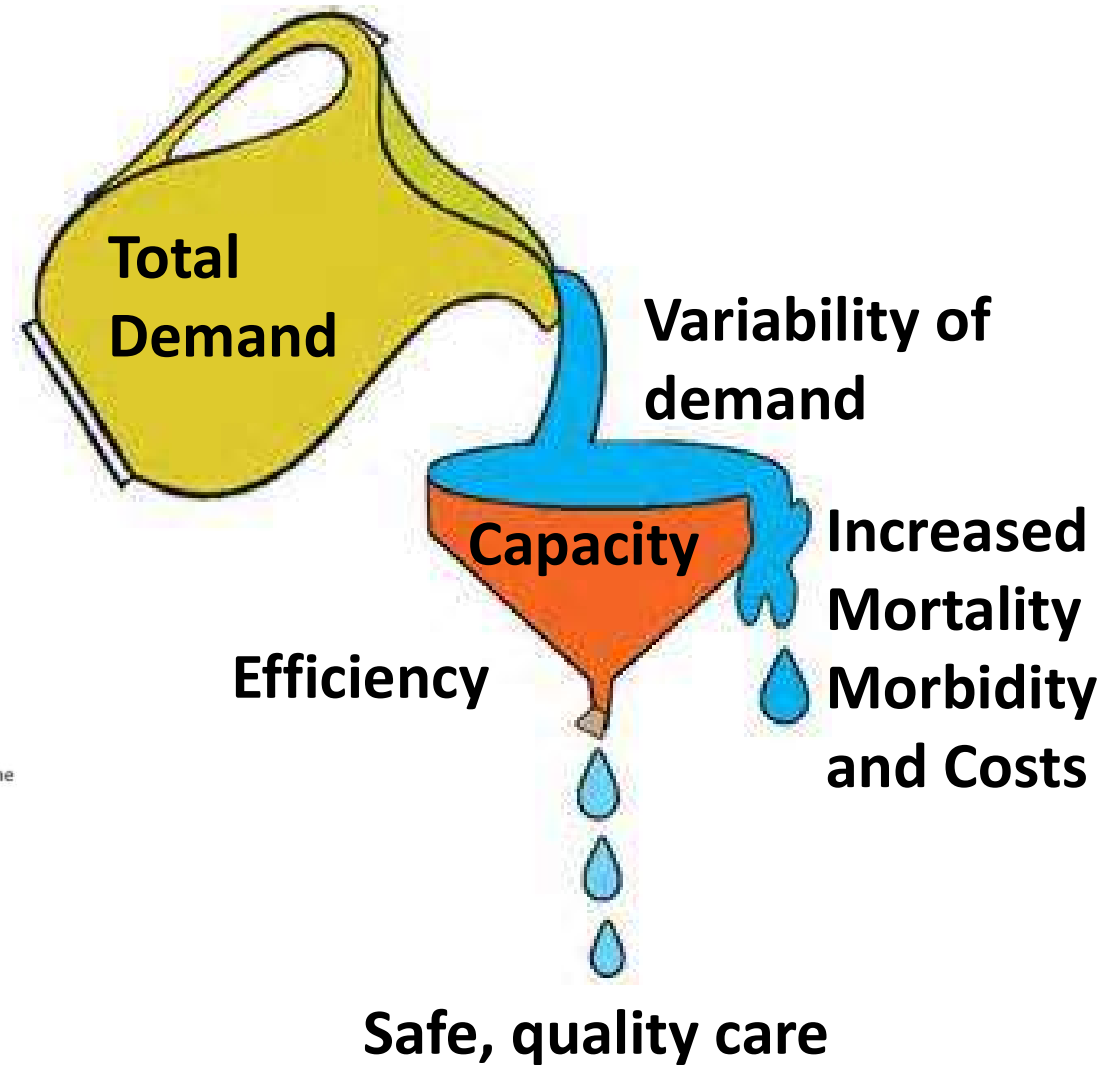
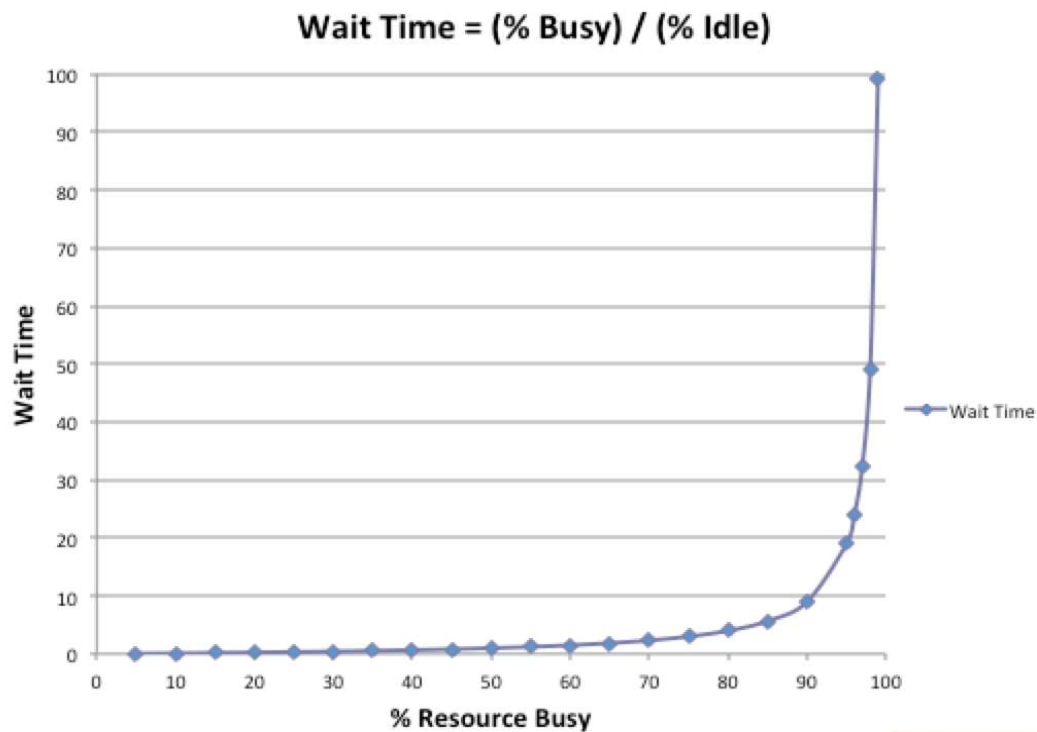


## Myths, Models, and Metaphors...

1. "ED crowding is an ED problem"
2. "Waiting in the ED is merely an inconvenience"
3. "Access block in the ED is caused by low acuity patients"



# The Physics of Patient Flow:



# ED Crowding

IMPACT  
2020, VOL. 2020, NO. 2, 28-32  
<https://doi.org/10.1080/2058802X.2020.1768684>

 Taylor & Francis  
Taylor & Francis Group

Healthy O.R. in Wales

Operational Research Group

Paul Harper

IMPACT © 2020 THE AUTHOR

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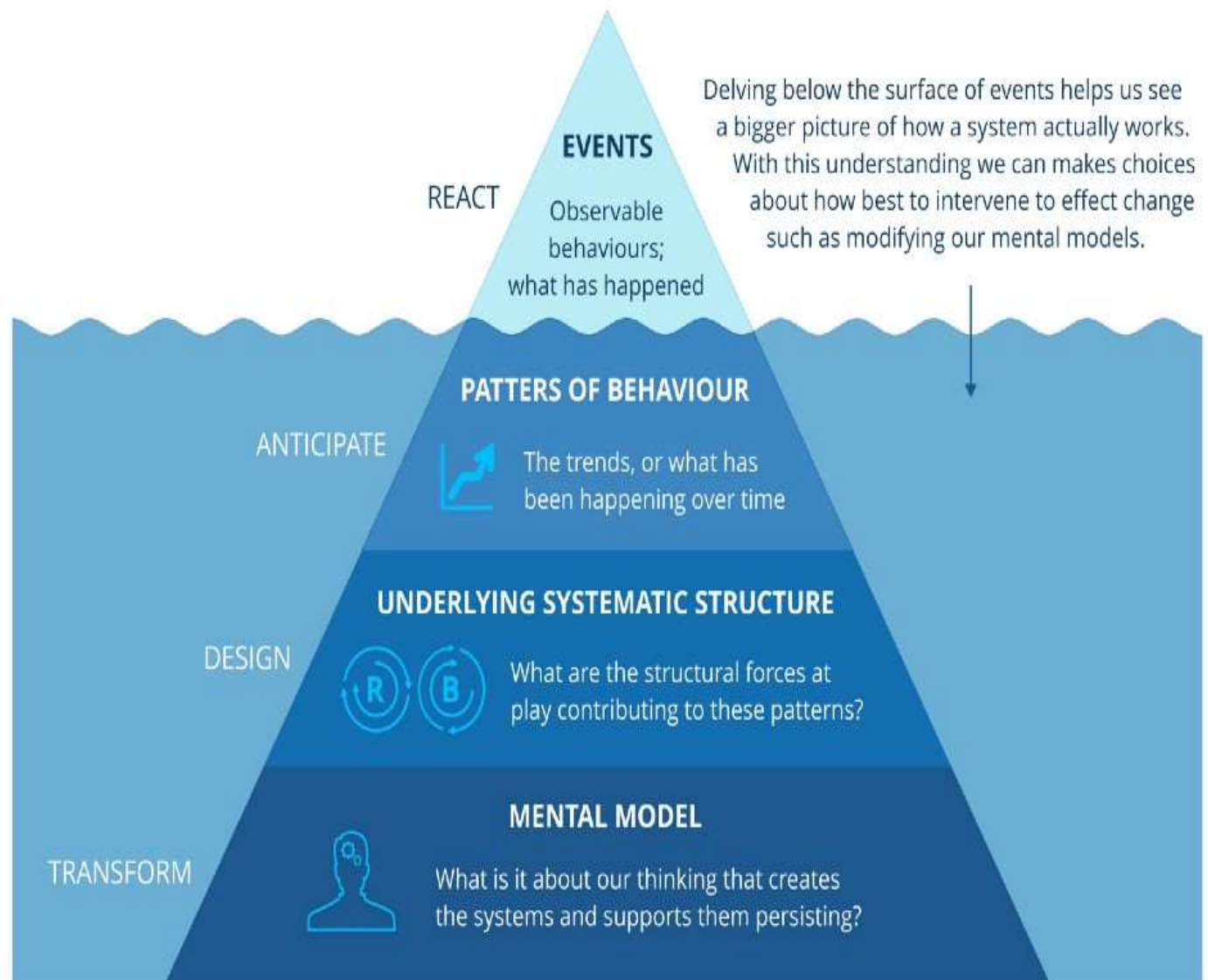
THE DEMAND FOR HEALTHCARE SERVICES in the UK continues to increase and the deficit between supply and demand proves to be economically costly and typically has a detrimental impact on factors such as waiting times, quality of care, NHS staff morale and patient satisfaction. From an O.R.



# Iceberg Model of Systems Change

“If you want to understand the deepest malfunctions of systems, pay attention to the rules, and to who has power over them.”

- Donella Meadows





# Mental Model: Health System Readiness/Resilience

THE LANCET

Log in Register


VIEWPOINT | VOLUME 385, ISSUE 9980, P1910-1912, MAY 09, 2015



PDF [59 KB]

## What is a resilient health system? Lessons from Covid 19?

Dr Margaret E Kruk, MD   • Michael Myers, MA • S Tornorlah Varpilah, MA • Bernice T Dahn, MD

Published: May 09, 2015 • DOI: [https://doi.org/10.1016/S0140-6736\(15\)60755-3](https://doi.org/10.1016/S0140-6736(15)60755-3) •  Check for updates

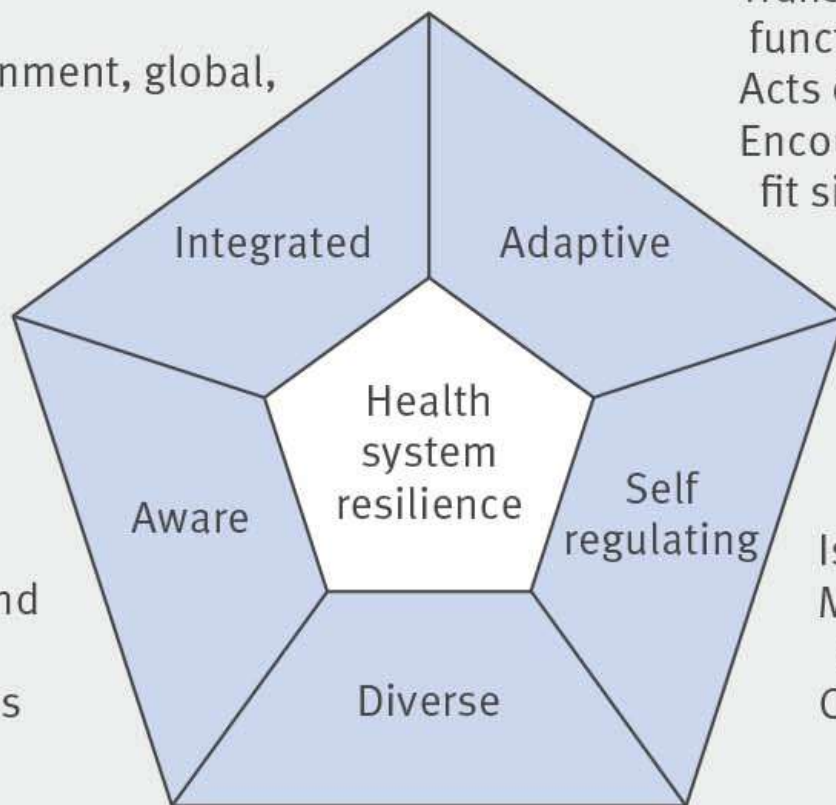
References

Article Info

The fragility of health systems has never been of greater interest—or importance—than at this moment, in the aftermath of the worst Ebola virus disease epidemic to date. The loss of life, massive social disruption, and collapse of even the most basic health-care services shows what happens when a crisis hits and health systems are not prepared.<sup>1</sup> This did not happen only in west Africa—we

Coordinates between government, global,  
and private actors  
Works across sectors  
Involves communities

Transforms operations to improve  
function  
Acts on evidence and feedback  
Encourages flexible response to  
fit situation



Tracks population health  
threats  
Maps system strengths and  
weaknesses  
Knows available resources

Isolates health threats  
Minimises disruption to  
essential services  
Can access reserve capacity

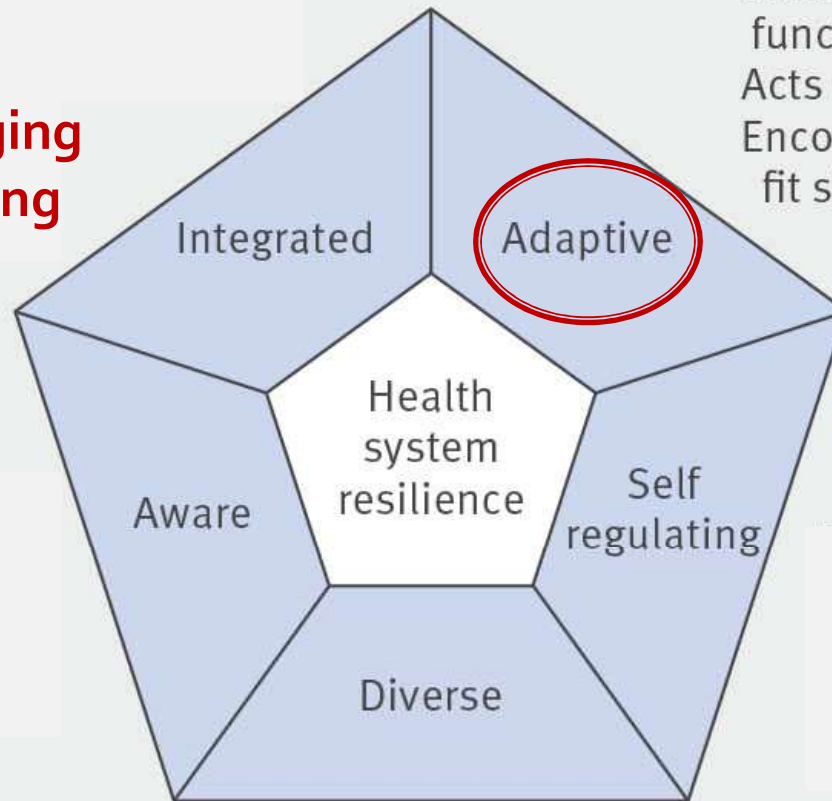
Addresses range of health problems  
Provides quality services that meet population needs

National leadership and policy • Public health and health system infrastructure  
Committed workforce • Global coordination and support



**Cross trained staff**  
**Inter-hospital privileging**  
**Trans-national licensing**

Transforms operations to improve function  
Acts on evidence and feedback  
Encourages flexible response to fit situation



**Emergence(y) staff**  
**are the stem cells of**  
**health system**

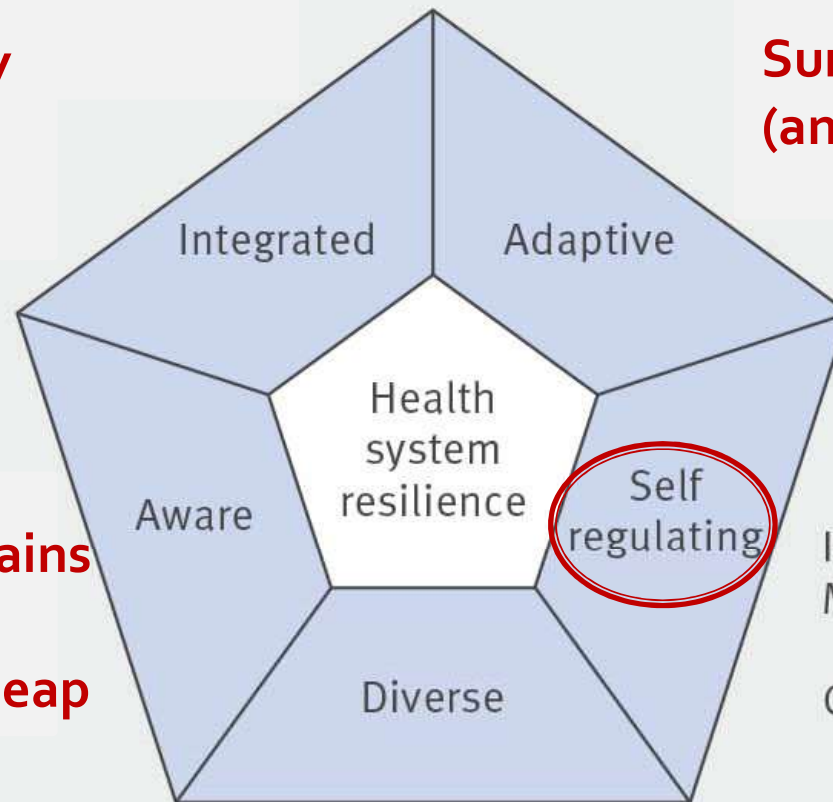
**Rapid PDSA cycles**  
**Action research**  
**Creative destruction**

***"flexible response" ... in service of the  
common good (Triple Aim Health Care)***

National leadership and policy • Public health and health system infrastructure  
Committed workforce • Global coordination and support

**Pop-up test capacity  
Smoothing wards  
Bottle-neck bypass**

**Surge Capacity is NOT fat  
(and it is NOT expensive)**



**Single source supply chains  
(meds, PPE) are not  
resilient, and are not cheap**

Isolates health threats  
Minimises disruption to  
essential services  
Can access reserve capacity

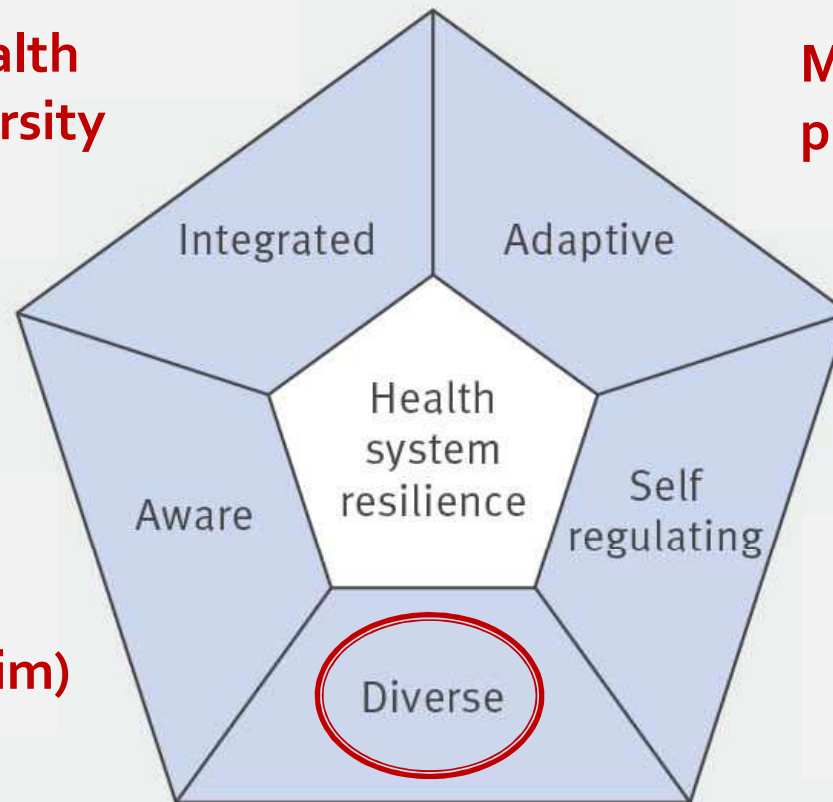
**Safe Redundancy is NOT fat  
(and it is NOT expensive)**

National leadership and policy • Public health and health system infrastructure  
Committed workforce • Global coordination and support

**Idea diversity is to Health Systems what biodiversity is to Ecosystems**

**Multi-option primary care access**

**Perspective seeking, and balancing (in service of the Triple Aim)**



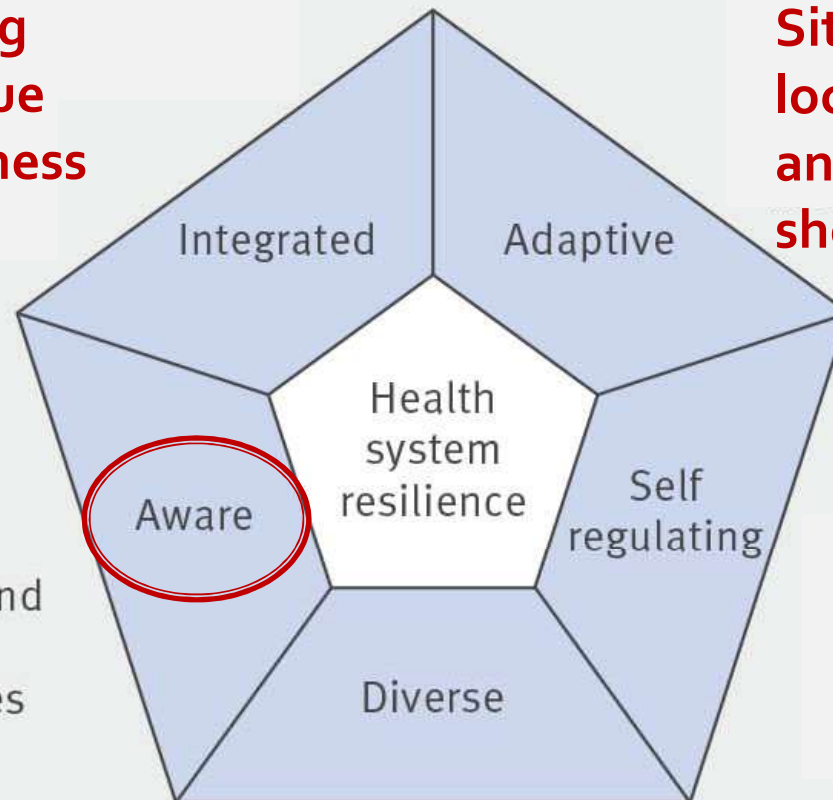
**Multi-option EMS services**

Addresses range of health problems  
Provides quality services that meet population needs

National leadership and policy • Public health and health system infrastructure  
Committed workforce • Global coordination and support

**Dynamically changing availability of staff due to quarantine and illness**

**Situationally aware at local, zone, provincial, and national levels (and short / long term)**



Tracks population health threats  
Maps system strengths and weaknesses  
Knows available resources

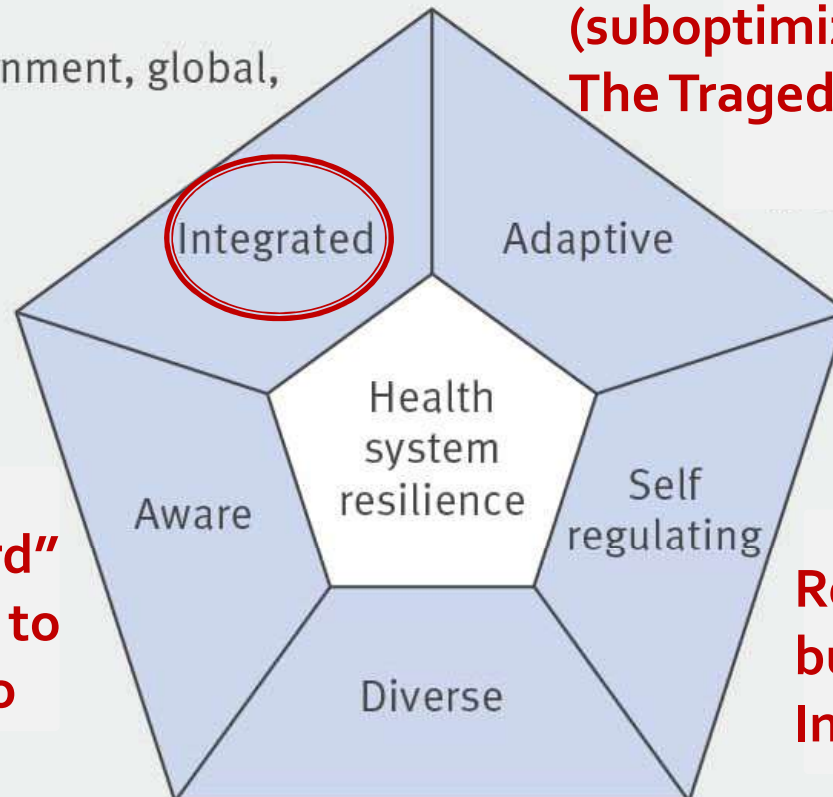
**Mapping # and distribution (and capabilities) of EDs and ICUs in Nova Scotia**

**Ambulance System Status Plan dependent on readiness on Emergency Departments**

National leadership and policy • Public health and health system infrastructure  
Committed workforce • Global coordination and support

**System Goals > sub-system goals  
(suboptimization killed the cod stocks)  
The Tragedy of the Commons**

Coordinates between government, global,  
and private actors  
Works across sectors  
Involves communities



**“One patient One record”  
Virtual care as a means to  
an end (not an end unto  
itself)**

**Relationship and Coalition  
building (Silo-busting and  
Interdisciplinarity)**

**Generalism is not Integration per se  
(Specialization is not Dys-integration)**

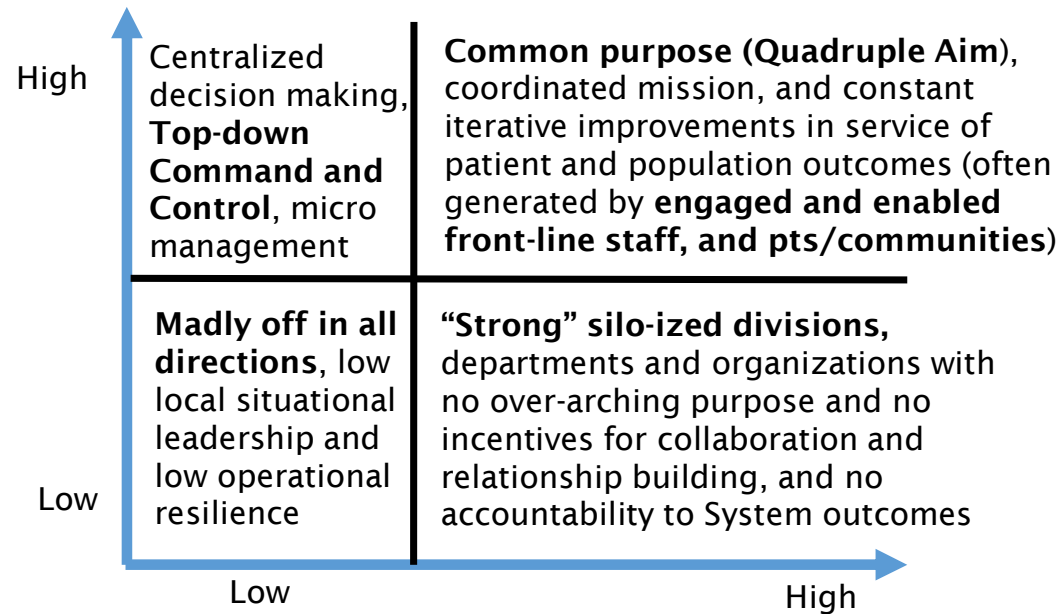
National leadership and policy • Public health and health system infrastructure  
Committed workforce • Global coordination and support



# Governance as Leadership:

## Common Purpose AND Subsidiarity

**Common Purpose  
Coordinated Mission  
Coherent approach**



**Subsidiarity of operational decision making**

# Healthcare System Readiness Measurement Framework

FINAL REPORT  
JUNE 13, 2019

Managing complexity  
(and chaos)  
in times of crisis

A field guide for decision makers inspired by the Cynefin framework



NATIONAL  
QUALITY FORUM

Domain	Subdomain
<b>Staff*</b>	Staff Safety Staff Capability Staff Sufficiency Staff Training Staff Support
<b>Stuff</b>	Pharmaceutical Products Durable Medical Equipment Consumable Medical Equipment and Supplies Nonmedical Supplies
<b>Structure</b>	Existing Facility Infrastructure Temporary Facility Infrastructure Hazard-Specific Structures
<b>Systems</b>	Emergency Management Program Incident Management Communications Healthcare System Coordination Surge Capacity Business Continuity Population Health Management

# IHI Triple Aim +

# Readiness / Resilience



**“A lasting implication of the pandemic is that resilient *and* efficient health-care systems will become part of the competitive advantage of nations.”**

– Kevin Lynch, vice-chair, BMO Financial Group, and former Clerk of the Privy Council; and Paul Deegan, CEO, Deegan Public Strategies and former deputy executive director, National Economic Council, the White House

# EM:POWER

**Springing Forward – Using lived experiences to build a more resilient future**

- 1. System (Re)design and Integration**
- 2. System Readiness and Resilience**
- 3. System Improvement and Innovation**



**CAEP** | Canadian Association of Emergency Physicians

**ACMU** | Association canadienne des médecins d'urgence

# Health systems resilience during COVID-19

## Lessons for building back better

56  
Health Policy  
Series

THE LANCET Regional Health  
Europe



Edited by  
Anna Sagan

Erin Webb

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The Lancet Regional Health - Europe

journal homepage: [www.elsevier.com/lanere](http://www.elsevier.com/lanere)



ELSEVIER



Analysis

BMJ Global Health

## A health systems resilience research agenda: moving from concept to practice

Dell D Saulnier<sup>1</sup>, Karl Blanchet<sup>2</sup>, Carmelita Canila<sup>3</sup>, Daniel Cobos Muñoz<sup>4,5</sup>

Series Health Policy

Antifragility of healthcare systems in Croatia and Bosnia and Herzegovina: Learning from man-made and natural crises

Ružica Tokalić<sup>a,1</sup>, Marin Vidak<sup>a,1</sup>, Mersiha Mahmić Kaknjo<sup>b,1</sup>, Ana Marušić<sup>a,\*</sup>

<sup>a</sup> Department of Research in Biomedicine and Health, University of Split School of Medicine, Split, Croatia

<sup>b</sup> Department of Clinical Pharmacology, Cantonal Hospital Zenica, Zenica, Bosnia and Herzegovina

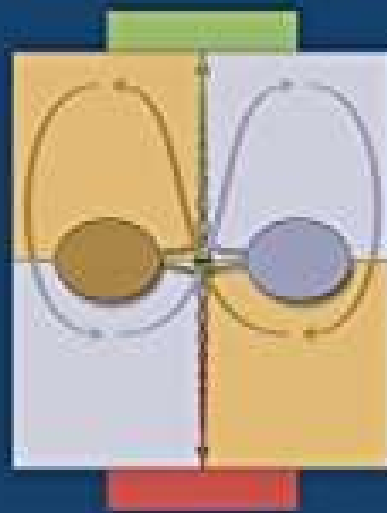
## Either/or...

Good and bad, I defined these terms, quite clear no-doubt somehow / but I was so much older then, I'm younger than that now

- Bob Dylan

# Polarity Thinking in Healthcare

The Missing Logic to Achieve Transformation



Bonnie Wesorick

## Both/and...

Centralization vs  
Decentralization

Efficiency vs  
Effectiveness

MD autonomy vs  
Accountability

Patient Rights vs  
Responsibilities

Collective safety  
and Individual  
freedoms

## Sorry—we're full! Access block and accountability failure in the health care system

Grant Innes, MD

### The Accountability Crisis:

In the face of demand capacity mismatch a program / queue can:

- 1. Improve efficiency and appropriateness, and lobby for more resources (difficult) or...**
2. Block inflow and leave pts in the queue (default response)
3. Solution for one program is a problem for another program
4. Shifts care to downstream programs less capable of providing it
5. Displaces consequences of access failure to remote parts of system
6. Leaders capable of assessing/addressing root causes are protected from having to do so
7. And leaders in impacted areas are incapable of doing (because they have no authority)



# Hospital Strategies for Reducing Emergency Department Crowding: A Mixed-Methods Study



Anna Marie Chang, MD, MSCE\*; Deborah J. Cohen, PhD; Amber Lin, MS; James Augustine, MD; Daniel A. Handel, MD, MPH; Eric Howell, MD; Hyunjee Kim, PhD; Jesse M. Pines, MD; Jeremiah D. Schuur, MD, MHS; K. John McConnell, PhD; Benjamin C. Sun, MD, MPP

*\*Corresponding Author. E-mail: [annamarie.chang@jefferson.edu](mailto:annamarie.chang@jefferson.edu).*

1. It matters less **WHAT** you are doing, and more **HOW** you do it....
2. Four Domains associated with High Performing Hospitals:
  1. EXECUTIVE LEADERSHIP INVOLVEMENT
  2. HOSPITAL-WIDE COORDINATED STRATEGIES
  3. DATA-DRIVEN MANAGEMENT
  4. PERFORMANCE ACCOUNTABILITY



# COVID-19 Pandemic Exposes the Importance of Resilience in Health System Redesign | EM Cases | Waiting to Be Seen blog (emergencymedicinecases.com)

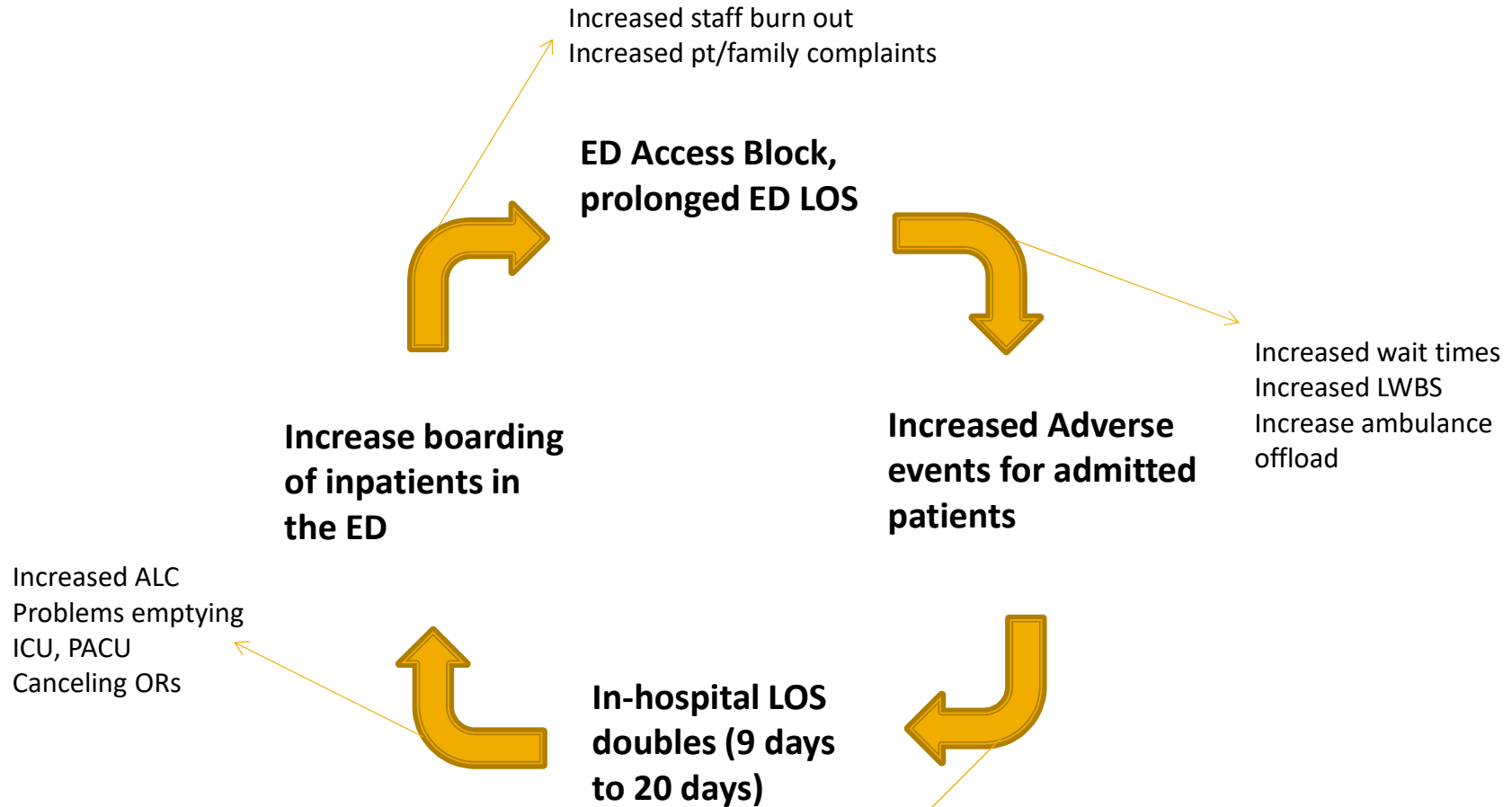
Investing in resilience can bring a **triple dividend**:

1. Better disaster response  
Decreased morbidity and mortality  
Less fear and polarization

2. Less disruption of services  
Less provider burn out  
More surge capacity for day-to-day ops  
Better pt experience and outcomes

3. Sustainable and resilient Health System  
Improved recruitment and retention  
"competitive advantage of nations / provinces"

**wellbeing.**



**Adverse events in older patients admitted to acute care: a preliminary cost description.**

Ackroyd-Stolarz S, Guernsey JR, MacKinnon NJ, Kovacs G.  
 Department of Emergency Medicine at Dalhousie University, Halifax, Nova Scotia.

Conclusion: **Patients with an AE had twice the hospital length of stay (20.2 versus 9.8 days,  $p < 0.00001$ ), resulting in 1,400 extra days at a cost of approximately \$7,500/patient.**

**The association between a prolonged stay in the emergency department and adverse events in older patients admitted to hospital: a retrospective cohort study.**

Ackroyd-Stolarz S, Read Guernsey J, Mackinnon NJ, Kovacs G.  
 Department of Emergency Medicine, Dalhousie University, Queen Elizabeth II Health Sciences Centre, Halifax, Nova Scotia, Canada.



The Commonwealth Fund

AREA OF FOCUS  
Improving Health Care Quality →

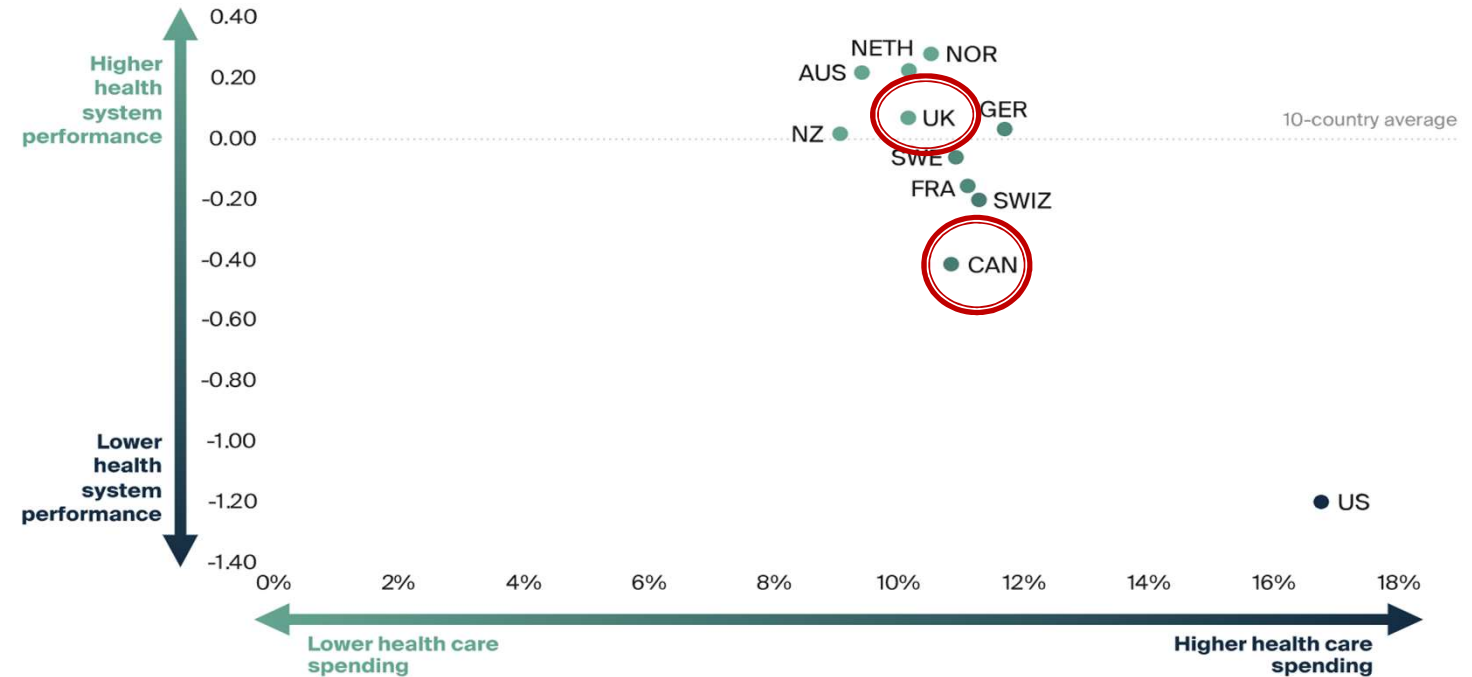
Fund Reports  
August 4, 2021

# Mirror, Mirror 2021:

[Mirror, Mirror 2021: Reflecting Poorly | Commonwealth Fund](#)

## EXHIBIT 4

### Health Care System Performance Compared to Spending



Note: Health care spending as a percent of GDP. Performance scores are based on standard deviation calculated from the 10-country average that excludes the US. See [How We Conducted This Study](#) for more detail.

Data: Spending data are from OECD for the year 2019 (updated in July 2021).