Health Care in Crisis: How Health Systems Science Can Help

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Objectives

- Describe the burning platform for Health Systems Science
- Understand what Health Systems Science is and how it applies to your job as a clinician
- Articulate the call to Health System Change

- 41-year-old man
- Multiple ED visits (pain crisis from sickle cell)
- Comes intermittently to clinic follow ups due to underinsured
- Questions about narcotics seeking behaviors in the chart



^{*}Not his picture, name, age, and identifiers changed.

ED:

- 1L IVF
- 0.5mg Dilaudid
- Admit to medicine
- CTA of the chest

Hospitalist initial exam:

- Agitated & defensive
- Writhing on the bed

Hospital stay

- 4 days
- DC back home

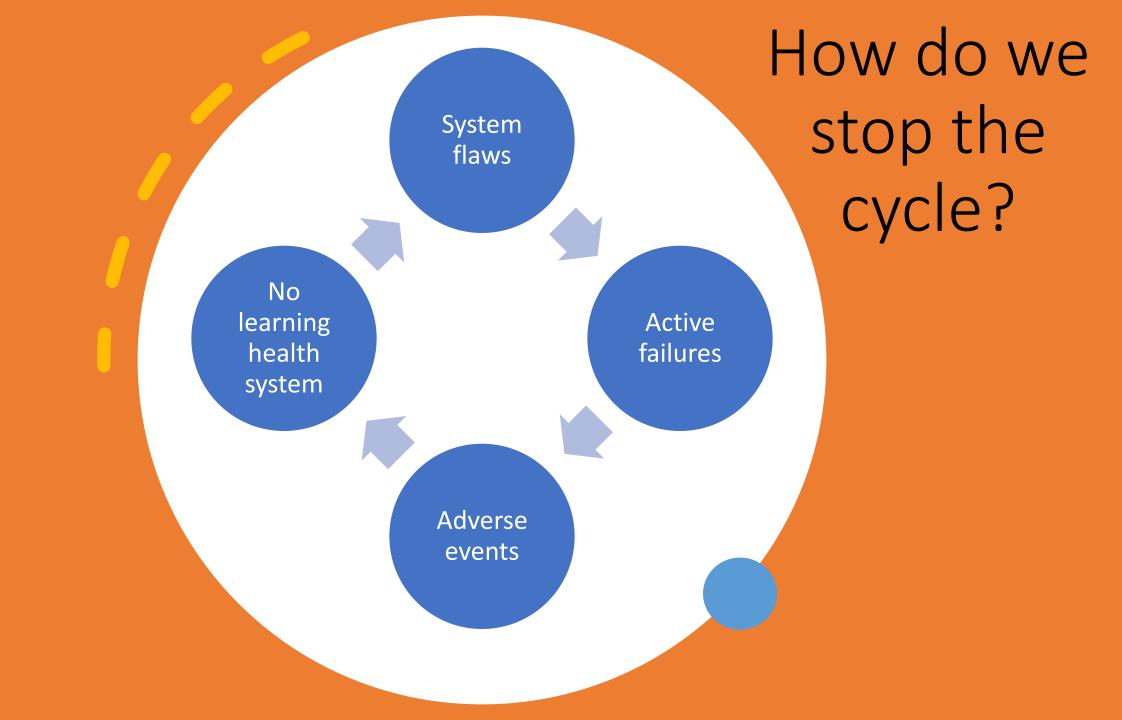


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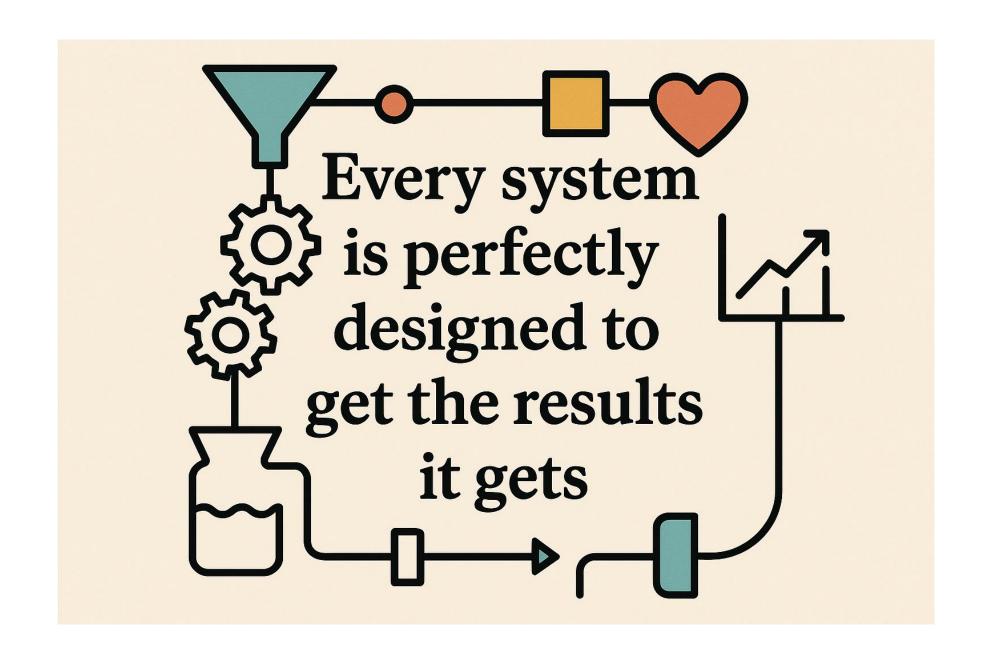
Readmitted 3 weeks later with same presentation.



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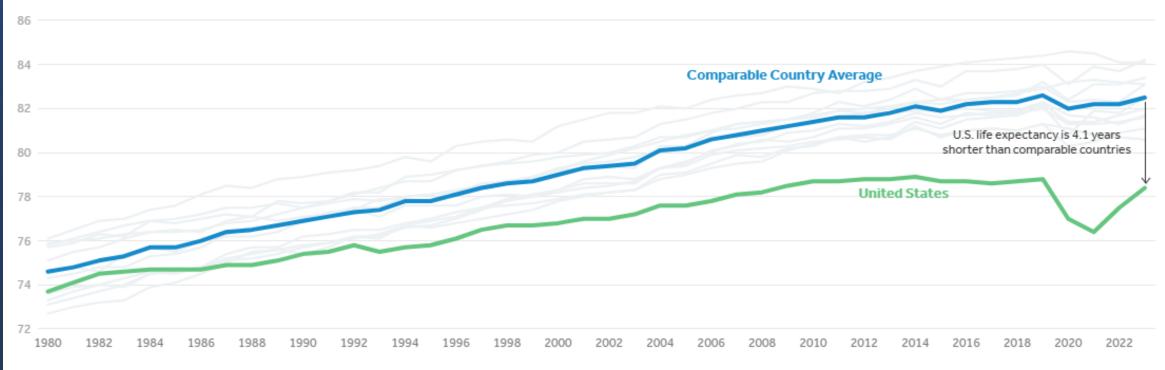




Good Care?

- Black Americans:
 - Maternal mortality 55/100,000 (3x higher than white women)
- American Indian/Alaskan Native
 - Life expectancy gap of 8 years compared to white populations
 - 19% report discrimination in their healthcare
- US life expectancy is 4-years shorter than peer countries
- Healthcare spending per capita is double

Life expectancy at birth, in years, 1980-2023



Notes: Comparable countries include Australia, Austria, Belgium, Canada, France, Germany, Japan, the Netherlands, Sweden, Switzerland, and the U.K. 2023 U.K. life expectancy data is only for England and Wales. See Methods section of "How does U.S. life expectancy compare to other countries?"

Source: KFF analysis of CDC, OECD, Australian Bureau of Statistics, German Federal Statistical Office, Japanese Ministry of Health, Labour, and Welfare, Statistics Canada, and U.K. Office for National Statistics data • Get the data • PNG

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Health System Tracker

Americans views of Health Care

- 72% of Americans give healthcare system a grade C or lower
- 46% had to choose between paying medical bills vs basic needs (food, housing)
- 40-60% felt doctors don't have enough influence on public debates on health policy

Good Care?

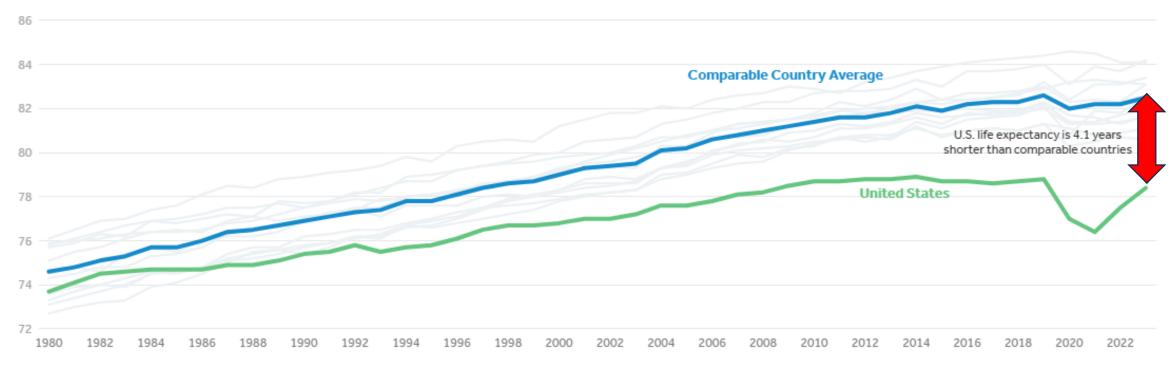
Individual

- Knowledge
- Bedside manner
- Efficiency

System

- Follow up
- Cost
- Access
- Support staff
- Decision support
- Volume

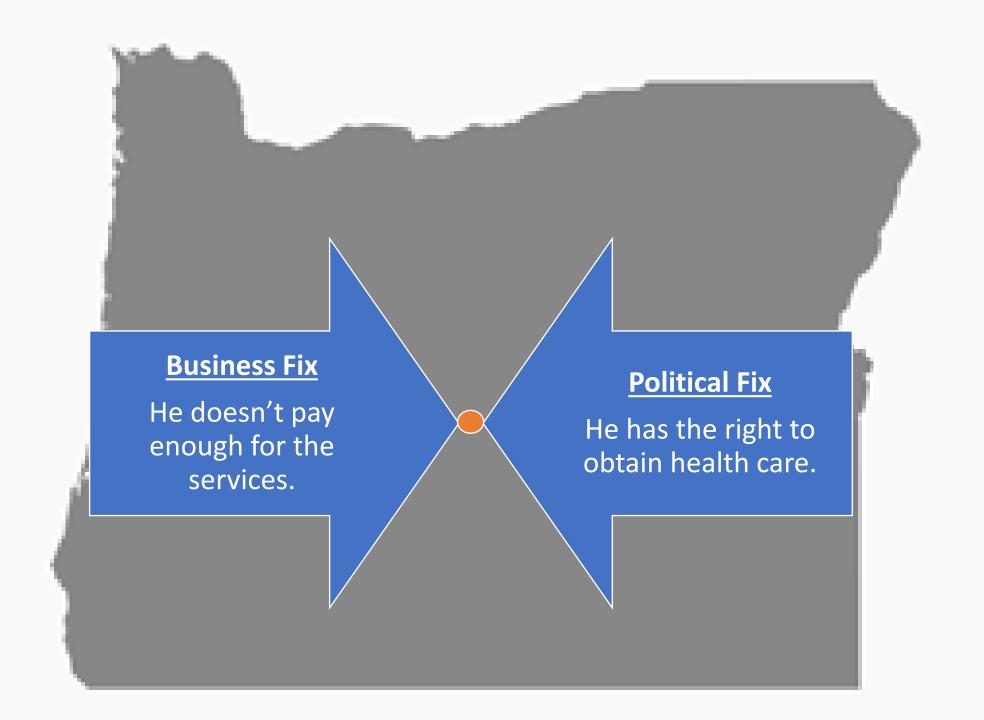
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Health System Tracker



Business fix

Comparison of Quality Measures From US Hospitals With Physician vs Nonphysician Chief Executive Officers

Helen See, MPH^{1,2}; Lacey Shreve, MD, MPH³; Sarah Hartzell, MA²; et al

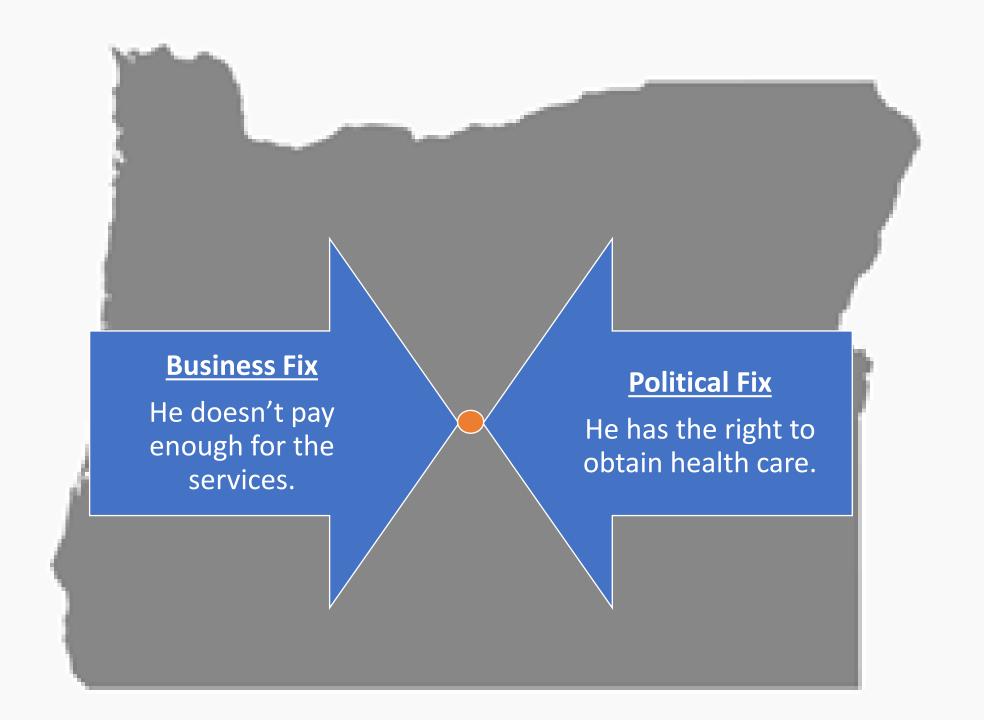
- 6162 Hospitals
- 6% had physician CEO's
- Hospitals run by physicians were more likely to be recommended by patients

Business fix

- Private Equity estimated own 10-15% hospitals & physician specialty groups
- Increased in patient/payers cost across the board
- Mixed outcomes on quality

Business fix

- Charge more?
 - Oregon in 2023 health care expenditure totaled \$38.75 billion dollars.
 - 8% more than 2022
 - Total Health Care Expenditures per person increased by 5.2% between 2022-2023
 - Growth mostly driven by increase in unit cost per health care service as opposed to increased utilization



Political Fix

- Emergency Medical Treatment and Labor Act (EMTALA)
 - 1986
 - Obligation on hospitals and physicians to evaluate and stabilize patients who present to a hospital ED seeking care.

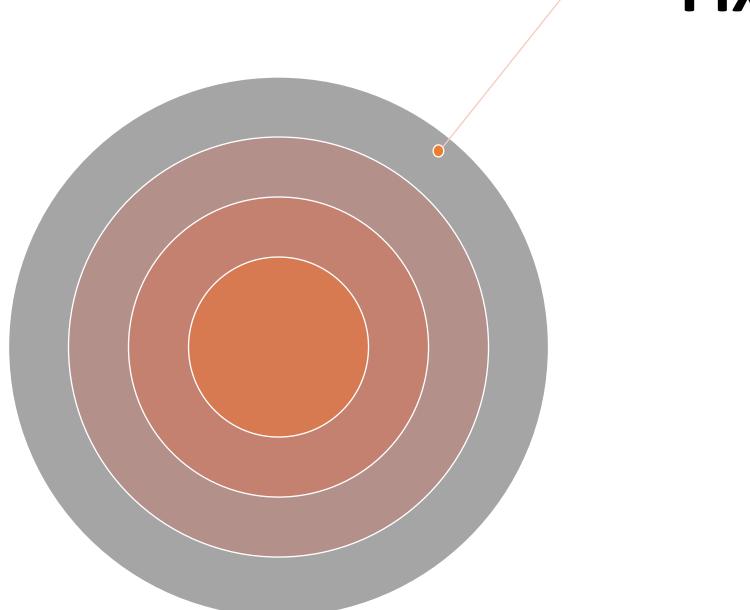
Political fix

- Make laws to protect vulnerable populations
 - Oregon 2024 law went into effect requiring prescreen for ability pay
 - Increased charity care provided free by hospitals 488 → 753 million

Political Fix

- Big Beautiful Bill
 - 22 million people will be affected in changes to costs/coverage
 - Estimated 10 million people will lose health coverage
 - \$120 billion reduction in SNAP benefits
 - Allows support for ACA plans to expire additional 5 million to lose insurance
 - Blocks Refugees/unlawful immigrants/asylum seekers access to medicare regardless of work history & contributions
 - Moratorium on enrollment streamlining which would be 1.3 million fewer beneficiaries





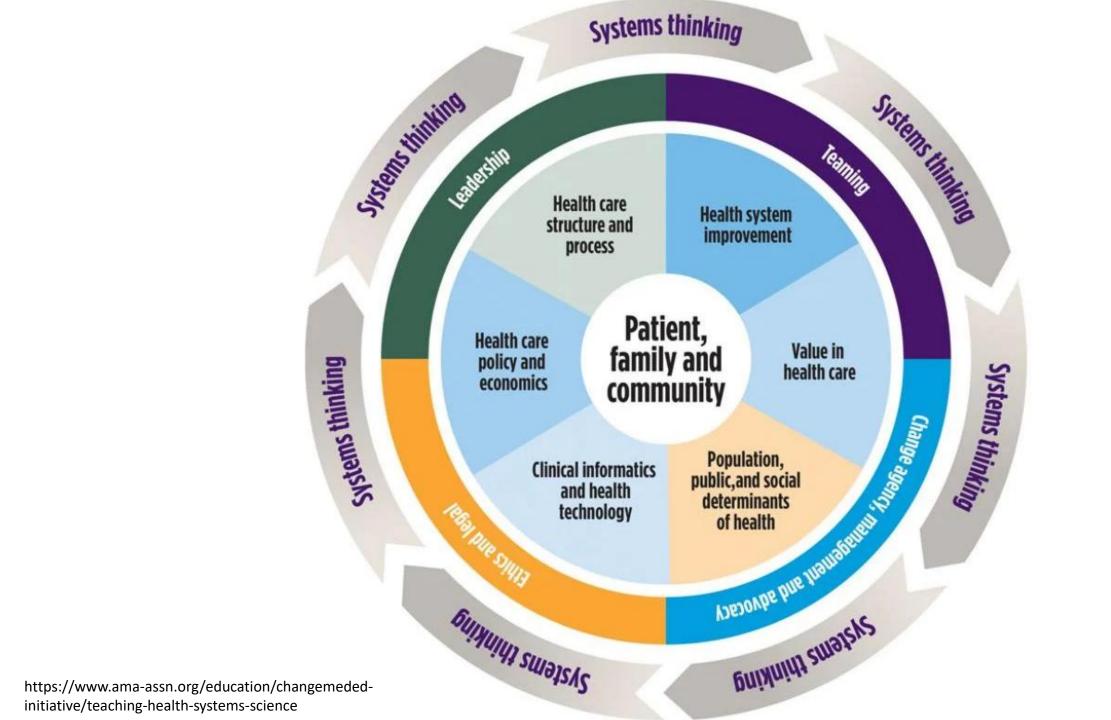
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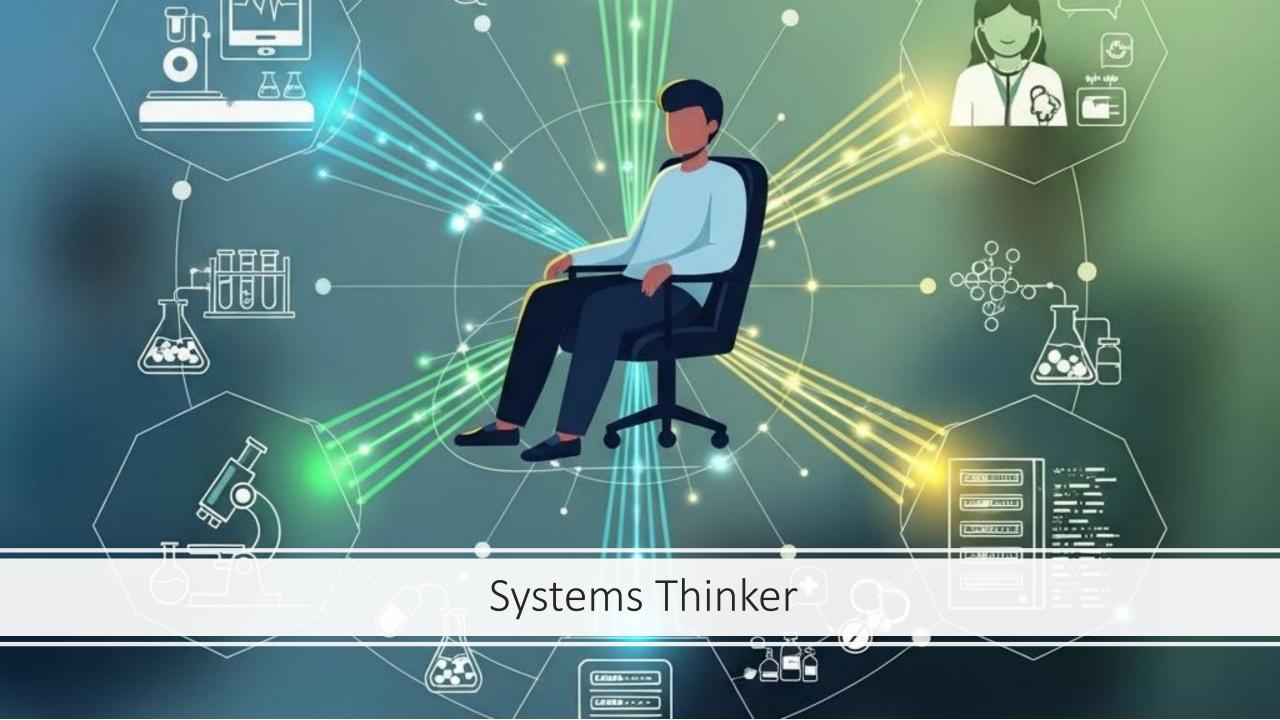
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hope



How?



Approach to Systems Thinking

1

Analyze problems within broader contexts

2

Consider multiple cause-and-effect relationships

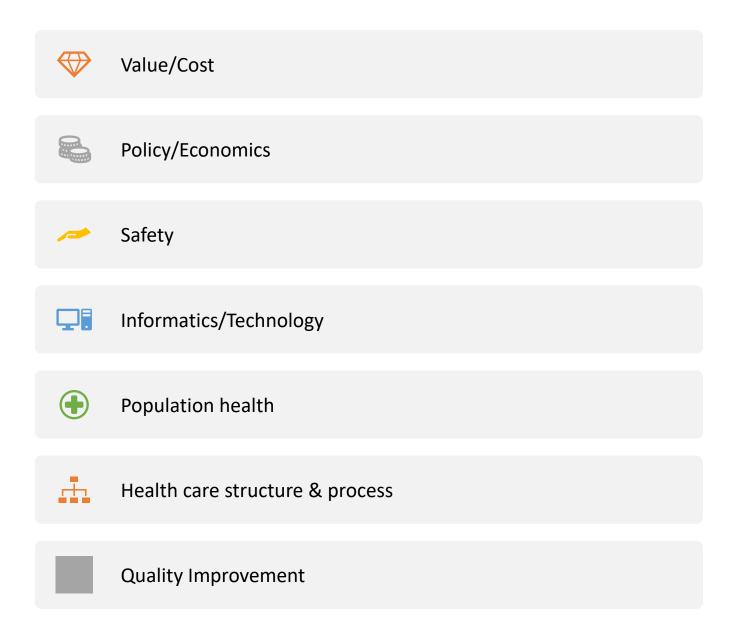
3

Understand that near-term actions have long-term consequences and possible side effects

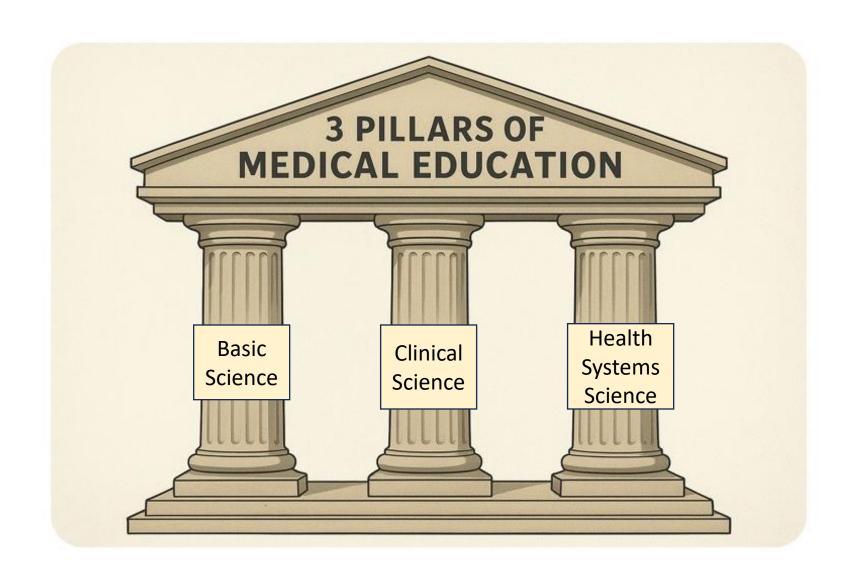
4

Conceptualize the nature of change over time

Systems Thinkers Fixing Systems



3rd Pillar



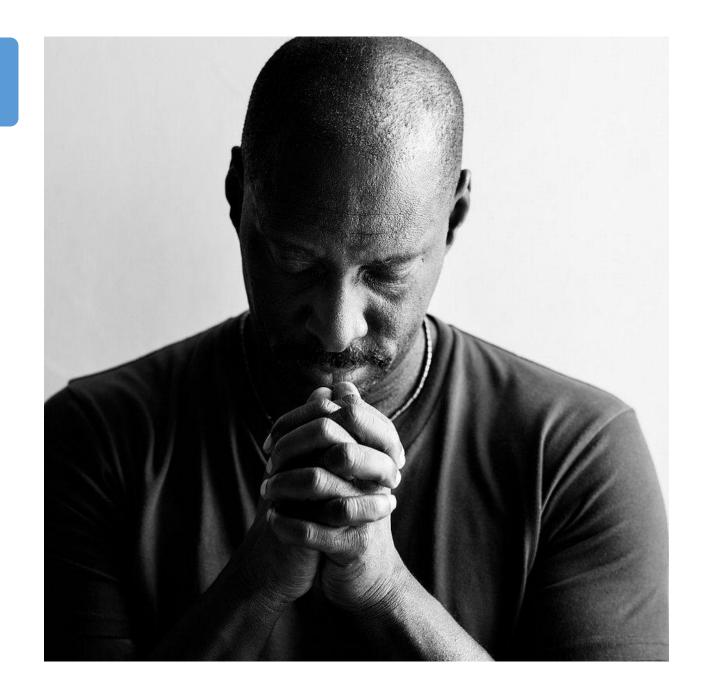
HSS in Health Care



Individual

Historic Approach

- Individual Clinician:
 - Ensuring the diagnosis is accurate
 - Order the pain meds and fluids
 - Try to figure out better follow up



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Systems Issues



HSS Approach

1

Analyze problems within broader contexts

2

Consider multiple cause-and-effect relationships

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Understand that near-term actions have long-term consequences and possible side effects 4

Conceptualize the nature of change over time

What Health Care Systems are Impacting Mr. Q?

- Clinic availability for follow up?
- Cost for his drug therapy?
- Access to gene or other advanced therapies?
- Guidelines for sickle cell management?
- Intrinsic biases around race?
- Time pressures of the ED clinician?
- EMR that helping (or not) his care?
- Training clinical staff has?
- Protocols for sickle cell management in the ED?
- Experience locally with sickle cell care?
- Patient education infrastructure on sickle cell disease

Individual

HSS Approach



Recognize systems affecting care



Consider its interconnectedness



Address issues based on understanding of the clinical system

Understand Why

Met with:

- ED Nursing leadership
- ED attendings/residents
- Medicine residents/hospitalists

Obtained data

- Time to opioid dosing
- Time to IVF
- ED & Admission LOS

Process mapped patients flow

- Delay in triage
- Delays in med/IVF ordering

Identified root causes

Delayed Management of Sickle Cell Disease Vaso-Occlusive Episodes and the Impact on Prolonged Hospitalizations at a Single Academic Center

Hannah King, Ashly Albright, Mortuma Murry



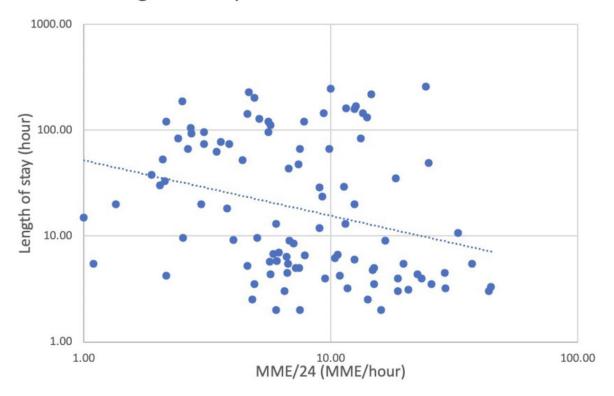
Blood (2023) 142 (Supplement 1): 7201.

https://doi.org/10.1182/blood-2023-190385

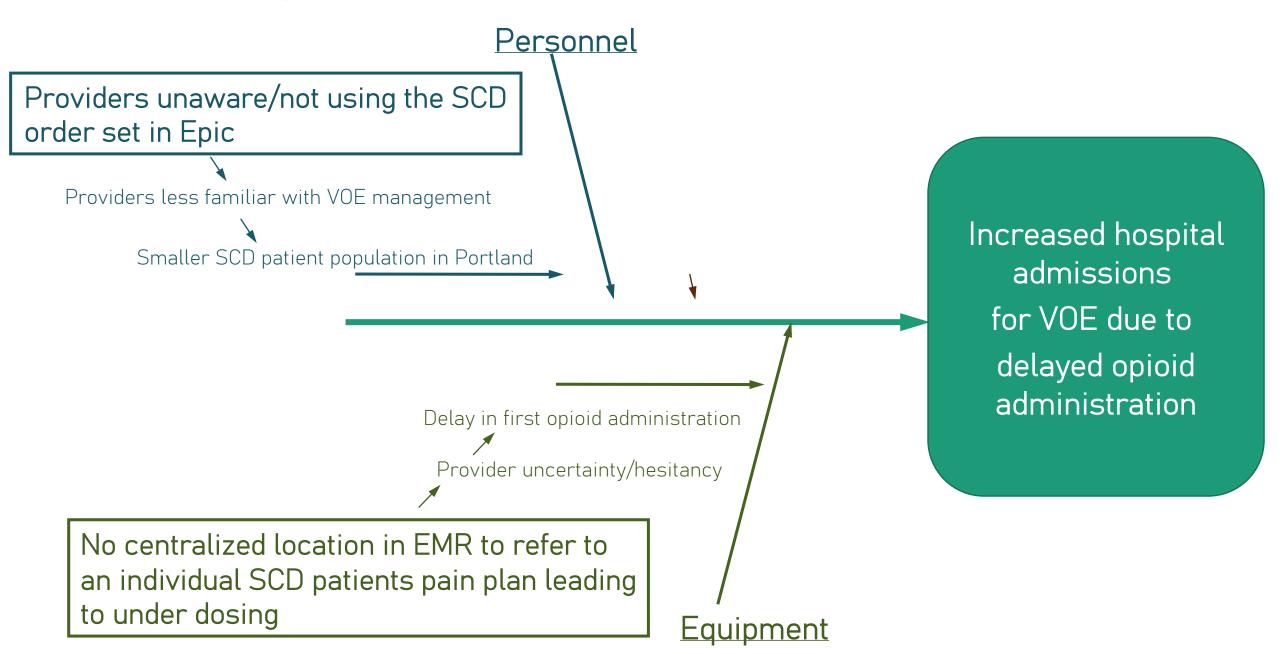
A. Length of Stay vs. Time to First Opioid

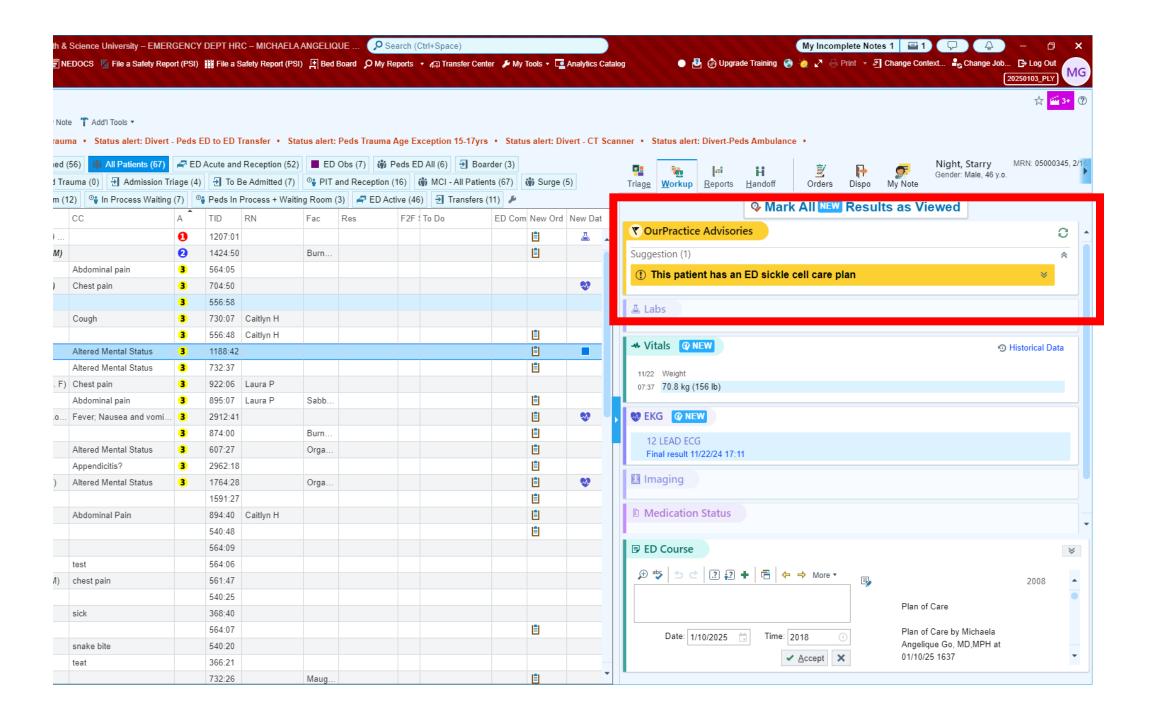
10000 1000 Length of Stay (hour) 1000 Time to First Opioid (min)

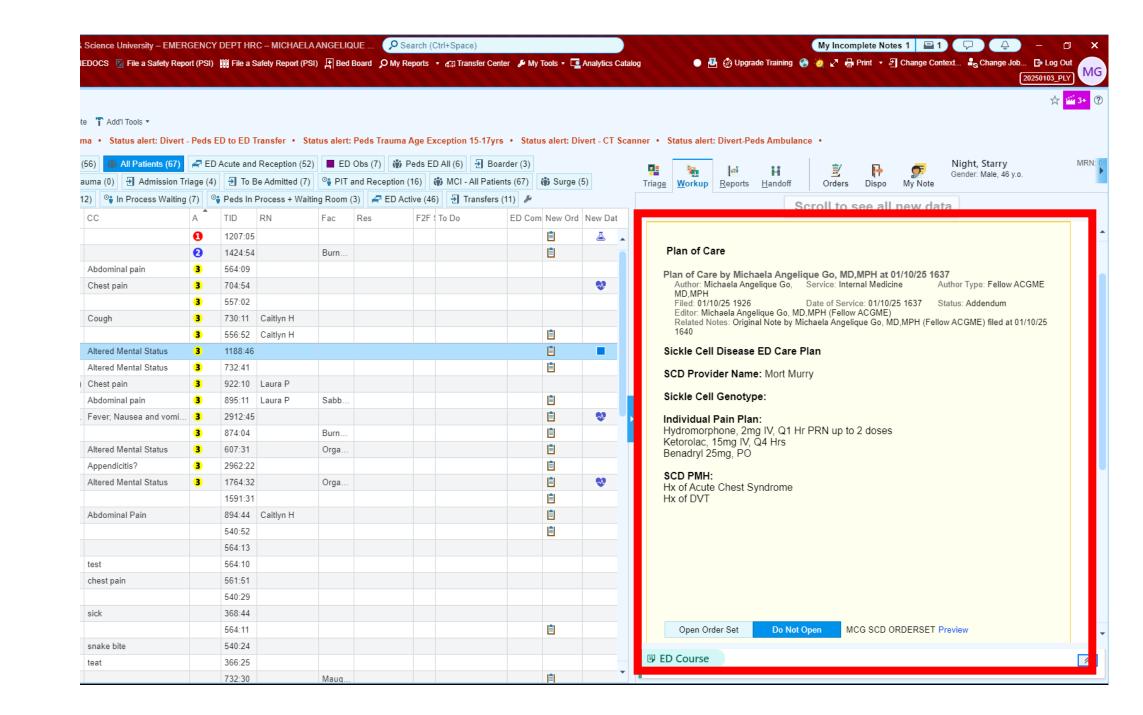
B. Length of Stay vs. MME Per Hour in First 24 hours

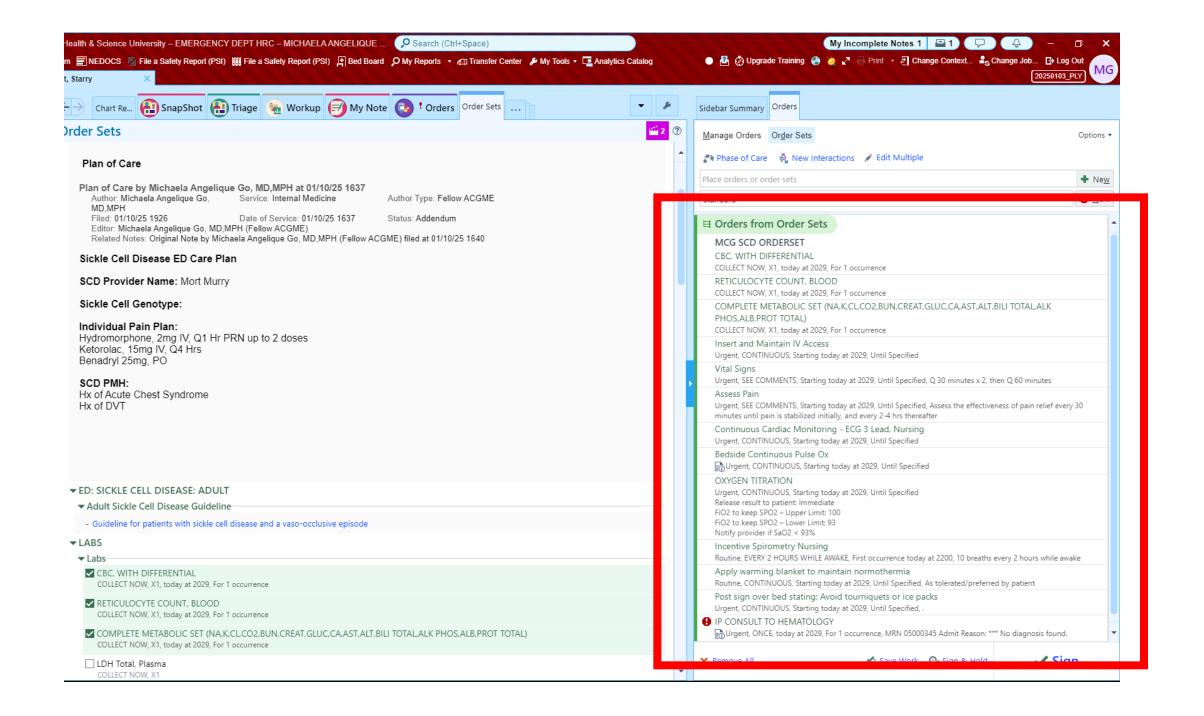


Fishbone Diagram









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Individual

- HSS is YOUR JOB
- Become a systems thinker

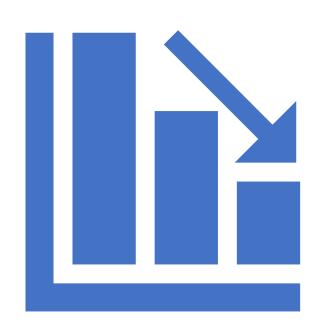
HSS in Health Care



Health Care System

NYU Healthcare Delivery System Redesign

- Rapid-cycle randomization to test simple and pragmatic ideas that can quickly change practice
 - Improving post discharge phone calls
 - Improving preventative care uptake
 - Clinical decision support tools
- Learning Health System- continuously use data to improve practice
- Redesign pilot grant program



NYU Healthcare Delivery System

- 74 distinct projects in 3 years
- Costs declined by 7.7%
- Decreased LOS
- No change to mortality or readmission
- Saved 54 million dollars

https://med.nyu.edu/centers-programs/healthcare-innovation-delivery-science/our-faculty-staff-internal-advisory-board

Health Care System

- Support HSS works
 - FTE
 - Projects
 - Leadership positions
- Educational Infrastructure
- Hospital Infrastructure

HSS in Health Care



Cultural Centredness Community Engagement Researchers partner with communities The community leads in defining the problem and developing the solution. in all phases of the project. Kaupapa Māori The collective vision. aspiration and intentions of Māori communities. Indigenous self-determination He Pikinga Waiora Systems Thinking Integrated Knowledge Translation

Country

He Pikinga Waiora Framework

Country

- Work outside our hospital walls
- Health system scientist leader
 - CEO's
 - Politicians
- Advocacy
- Stop waiting for someone else to fix health care

Approach to Systems Thinking

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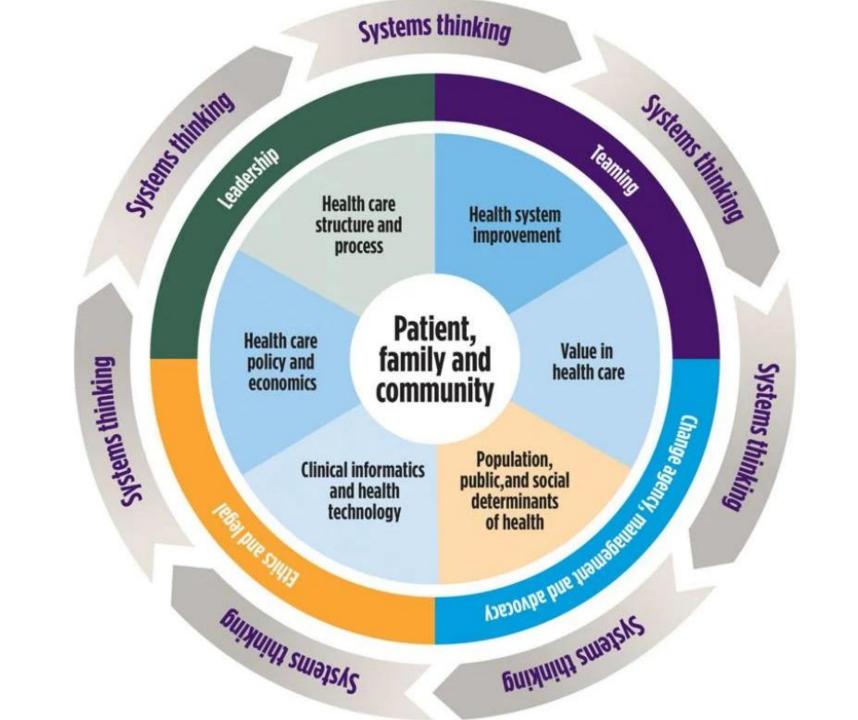
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Conceptualize the nature of change over time



Making Change

Ground up

Individual practitioners demand more

Create change

Educate themselves

Advocate

Elect



ACMGE mandates around HSS

CMS/Medicare guidelines set the standards

Credentialing

Policy

CEO Support

What can I do

01

GET EDUCATED

02

TEACH OTHERS-TEACHIS.ORG 03

JOIN A HEALTH
SYSTEM PROJECT

04

ADVOCATE FOR LEADERS WHO UNDERSTAND SYSTEMS SCIENCE

Objectives

- Describe the burning platform for Health Systems Science
- Understand what Health Systems Science is and how it applies to your job as a clinician
- Articulate the call to Health System Change



Questions?
Thank you

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