

Ethics & Conscionable Research

R.A.I.S.E. the Bar for Healthcare Design through Research and Evidence

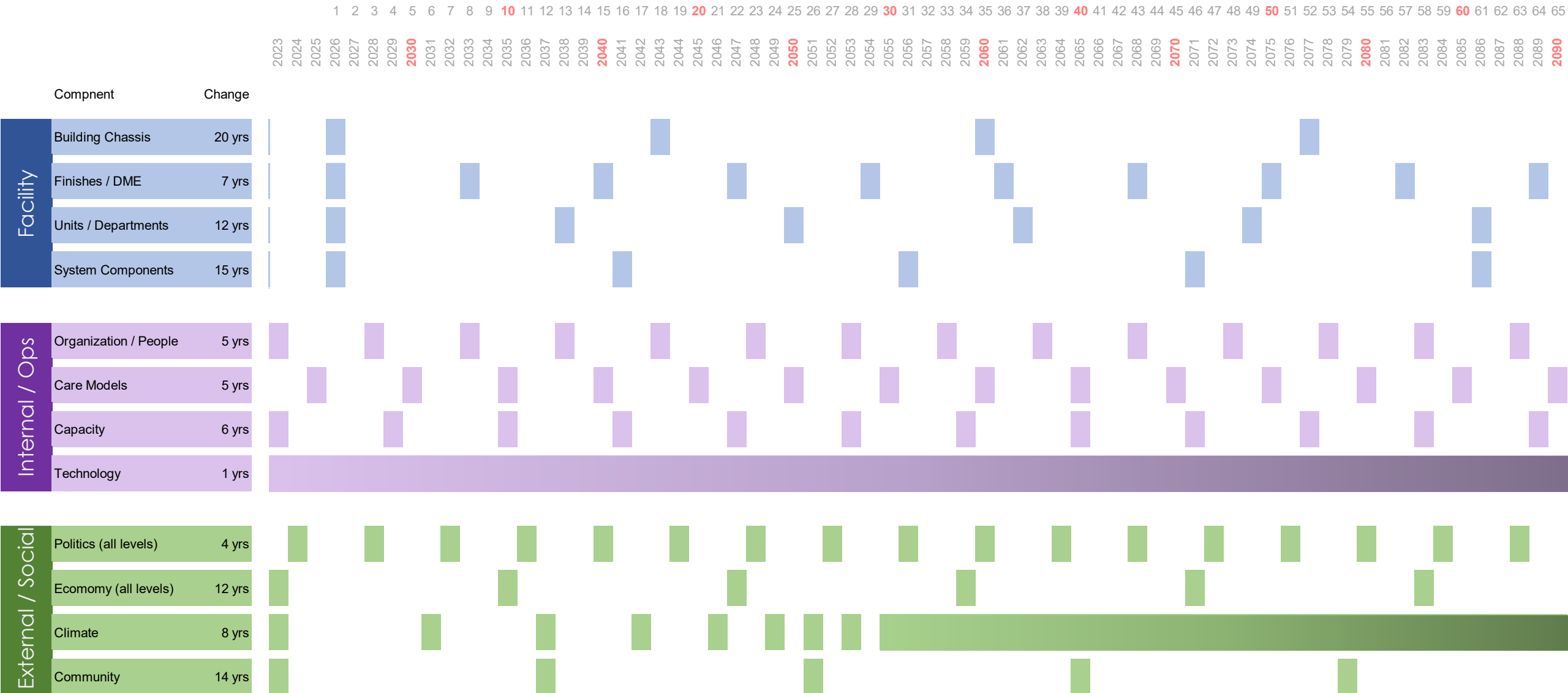
- **Re-think:** How do we identify problems or ideas to explore?
- **Appraise:** Where can I find reputable information and how do I read it?
- **Inquire:** Who do I include when I am searching for and appraising evidence?
- **Study:** What are things I need to consider when I am looking to conduct research with or without people as participants?
- **Empower:** What are the next steps to help others learn what I have found out?

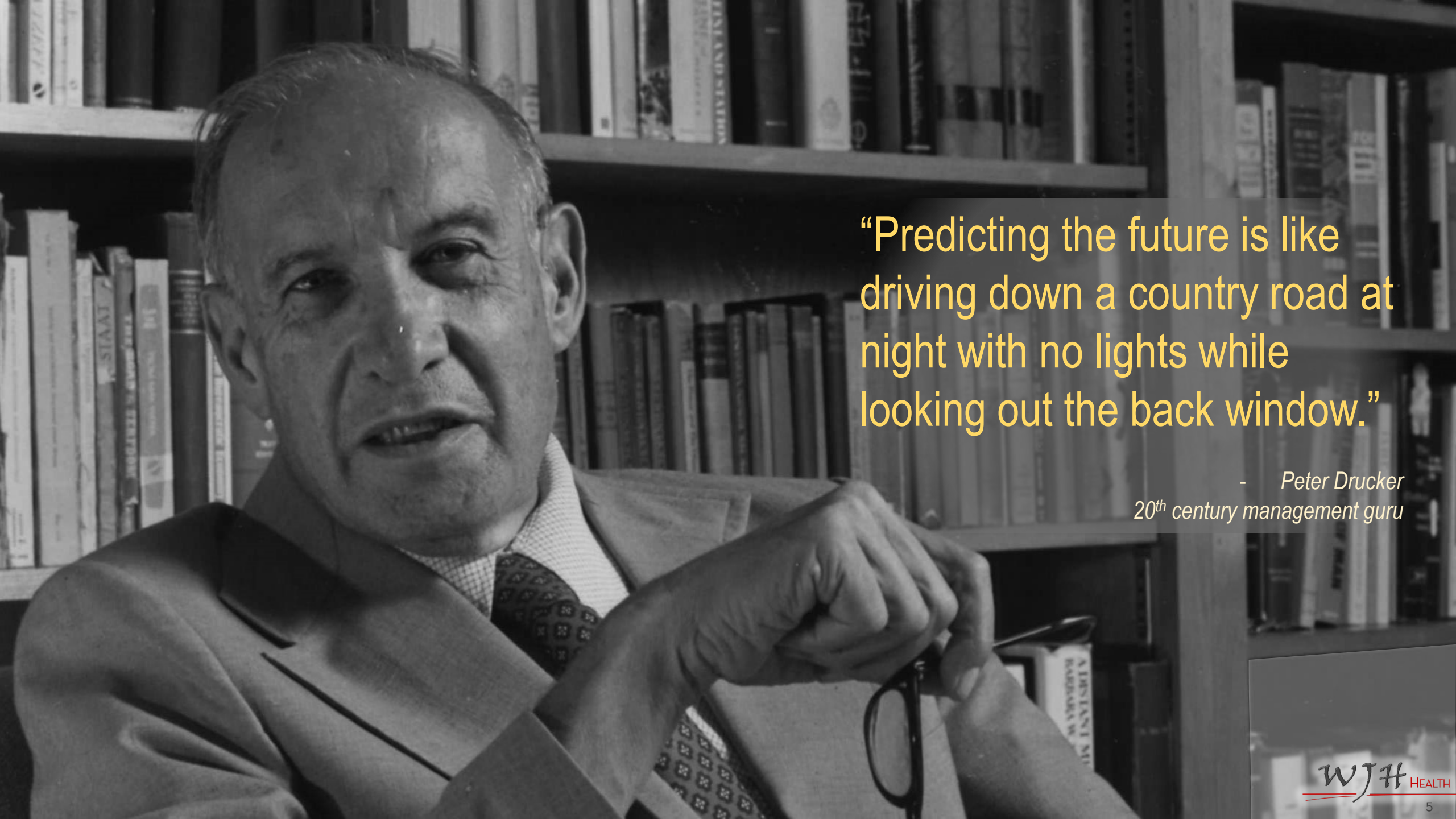




Source: *Parker, Timothy; Silbersein, Samantha; Li Timothy. "How Much Does It Cost to Raise a Child in the U.S.?" Investopedia. 6 Dec 2022. <https://www.investopedia.com/articles/personal-finance/090415/cost-raising-child-america.asp>. Accessed 24 Oct 2023..*

Concurrent Convolutions: Context for Flexibility & Complex Adaptive Systems





“Predicting the future is like driving down a country road at night with no lights while looking out the back window.”

- Peter Drucker
20th century management guru



“You never know what the future holds or where my life will take me.”

- Kim Kardashian
21st century philosopher

“...the ability to detect cancer and diseases such as aneurysms in its earliest stages, before symptoms arise... #NotAnAd.”

- Kim Kardashian
Medical influencer

“... does not believe there is sufficient evidence to justify recommending total body screening for patients with no clinical symptoms, risk factors or a family history suggesting underlying disease or serious injury.”

- American College of Radiology

1. It **oversimplifies the solutions** to complex healthcare problems, which can lead to misinformation and misguided self-diagnosis.
2. It can **interrupt the patient-physician relationship**, which is reliant on trust.
3. It can lead patients to opt for **quick fixes and superficial solutions** rather than the comprehensive care offered by a medical professional.
4. It can create further **fog around healthcare prices**. "The cost of care transcends the simple sticker price, encompassing a myriad of variables that need careful consideration," Dr. Brown wrote. "Kardashian could not explain these intricacies in a social post."
5. Influencers, from politicians to celebrities, can **sow medical misinformation on a large scale**, as seen throughout the COVID-19 pandemic.

Sources: Kardashian, K. @KimKardashian. Instagram. https://www.instagram.com/p/CvszJqGyfq/?img_index=1. Accessed 24 Oct 2023.

American College of Radiology. "ACR Statement on Screening Total Body MRI". <https://www.acr.org/Media-Center/ACR-News-Releases/2023/ACR-Statement-on-Screening-Total-Body-MRI>. 17 Apr 2023. Accessed 24 Oct 2023.

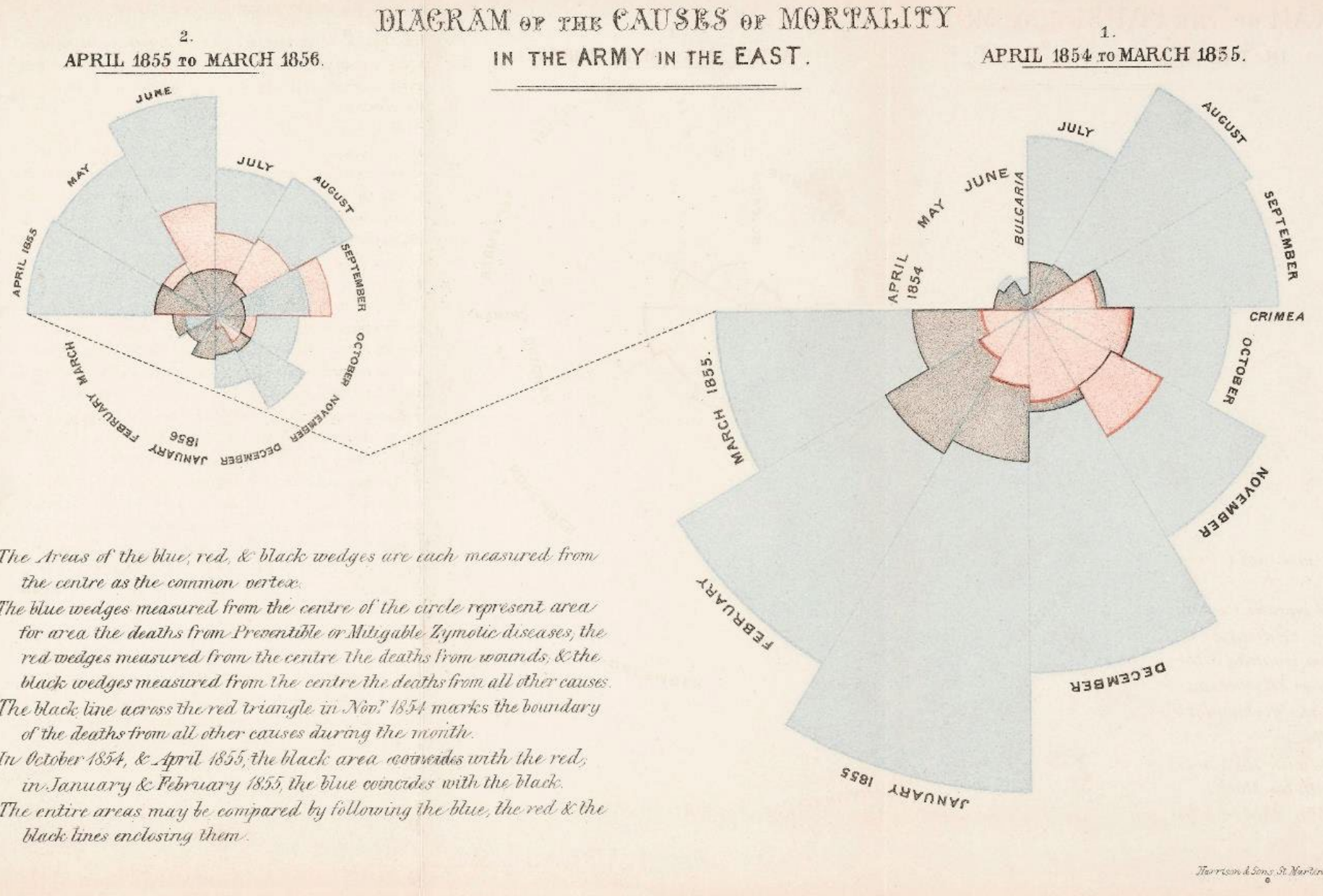
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Historical Perspective



What was discovered
165 years ago...



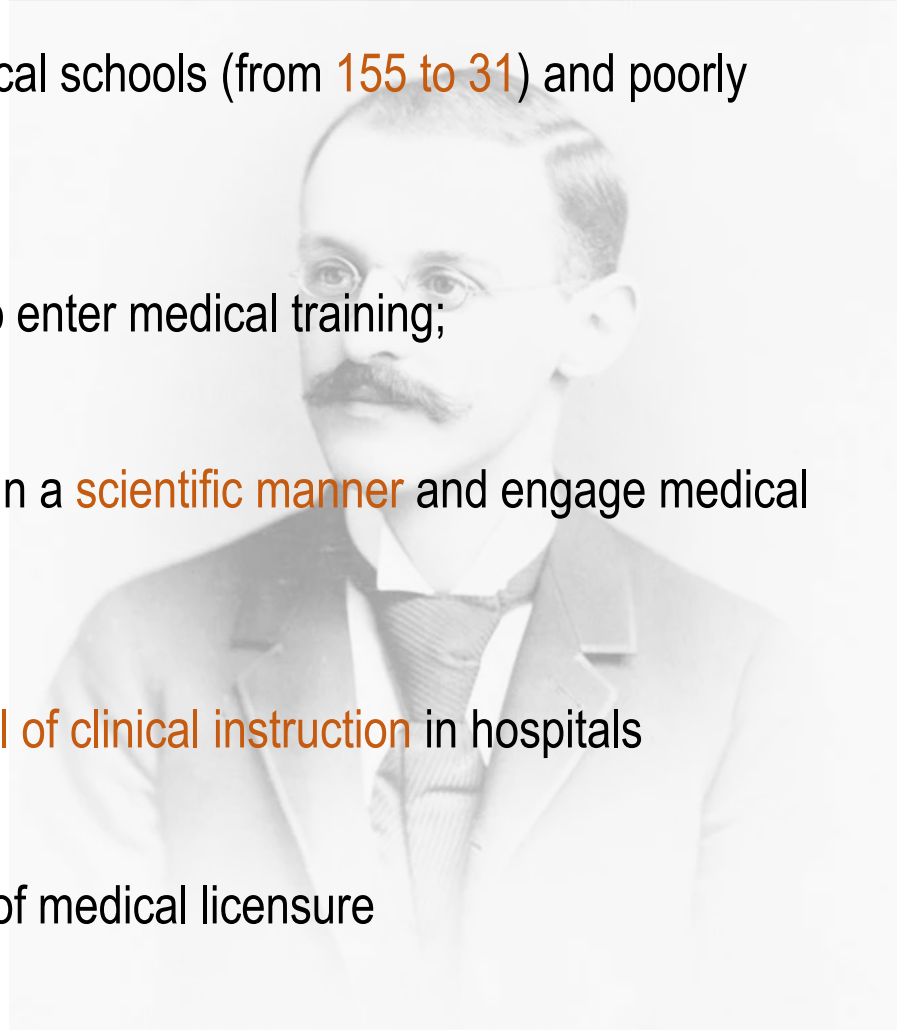
Historical Perspective



3...was never really learned.

State of U.S. Medical Education in the Last 110 Years

1. Reduce the number of medical schools (from 155 to 31) and poorly trained physicians;
2. Increase the prerequisites to enter medical training;
3. Train physicians to practice in a scientific manner and engage medical faculty in research;
4. Give medical schools control of clinical instruction in hospitals
5. Strengthen state regulation of medical licensure



MEDICAL EDUCATION IN THE UNITED STATES AND CANADA

A REPORT TO
THE CARNEGIE FOUNDATION
FOR THE ADVANCEMENT OF TEACHING

BY
ABRAHAM FLEXNER

WITH AN INTRODUCTION BY
HENRY S. PITCHER
PRESIDENT OF THE BOARD

PUBLISHED BY THE FOUNDATION

1910
NEW YORK CITY

Research Trauma

<i>Purdue</i> (machine)	364
<i>Purdue</i> (human)	252
<i>U Michigan</i> (machine)	411
<i>Swarthmore</i> (human)	144
<i>Ballarmine U</i> (variables)	175
<i>NYU</i> (math only)	1,000

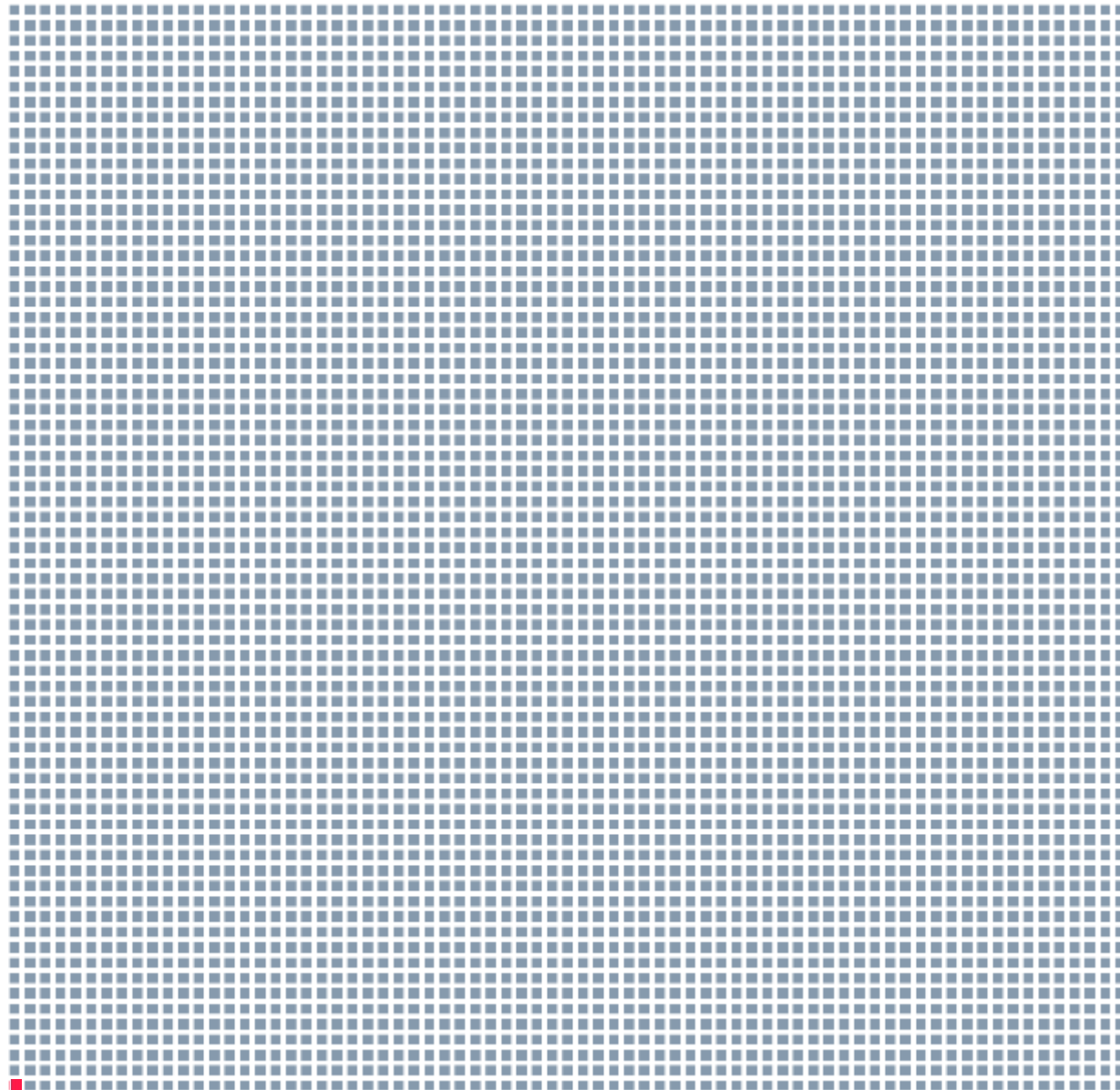
7X variation

Image Credit: Doner. Detroit. 1968

Sources: Morgan, Will. "How Many Licks to Get to the Center of a Tootsie Pop: The Real Answer!" Sporked. 23 Oct 2023. <https://sporked.com/article/how-many-licks-get-center-tootsie-pop/>. Accessed 23 Oct 2023.

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~36,000,000 Peer-Reviewed Research Publications in PubMed

vs.

6,000 Publications in Center for Health Design Knowledge Repository

6,000 : 1





Incidental

Deliberate



Our understanding of the role the environment plays in shaping us and our interactions has expanded immensely. Researchers have examined the profound effect social and environmental factors can have on behavior, operational effectiveness, decision-making, and health outcomes.

Yet, design choices in the built healthcare environment raise substantive bioethical issues that demand the attention of bioethicists and ethical inquiry.

All participants in a building project are conducting human-subjects research with impunity.

The built environment must be considered alongside other parameters of care.

Source: Anderson D, Teti S, Hercules W, Deamer D. "If Architecture Influences Health Outcomes, How Should Healthcare Systems Respond? Bioethics at the Frontier of the Science of Design". Harvard Medical School Center for Bioethic; Organizational Ethics Consortium. Cambridge MA. 20 Jan 2023. <https://www.youtube.com/watch?v=8q8VsimJGis>.



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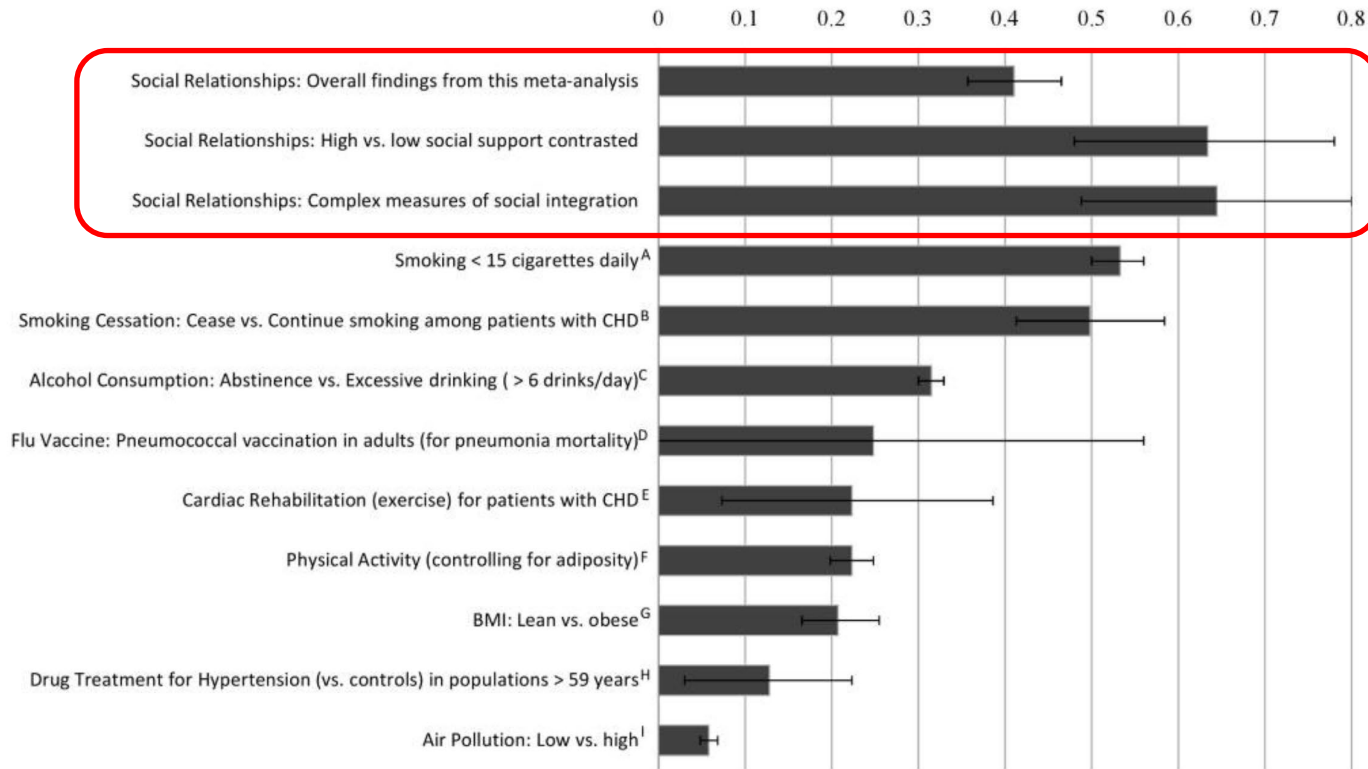
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Deemer, David; Teti, Stowe-Locke; Hercules, William; Peavey, Erin; Wong, Jocelyn; Anderson, Diana. "How Should Organizations Be Held Accountable for Promoting Environments That Foster Social Connection?". American Medical Association Journal of Ethics. 2023;25(11):E825-832. doi: 10.1001/amajethics.2023.825.. Online. 1 Nov 2023. <https://journalofethics.ama-assn.org/article/how-should-organizations-be-held-accountable-promoting-environments-foster-social-connection/2023-11>.

Priority of Social Connectedness:

Comparison of odds (lnOR) of decreased mortality across several conditions associated with mortality



Note: This study has been cited **1,690 times** in scientific literature, including **162 times in 2023**. This study remains relevant.

Review > PLoS Med. 2010 Jul 27;7(7):e1000316. doi: 10.1371/journal.pmed.1000316.

Social relationships and mortality risk: a meta-analytic review

Julianne Holt-Lunstad¹, Timothy B Smith, J Bradley Layton

Affiliations + expand

PMID: 20668659 PMCID: PMC2910600 DOI: 10.1371/journal.pmed.1000316

Free PMC article

Abstract

Background: The quality and quantity of individuals' social relationships has been linked not only to mental health but also to both morbidity and mortality.

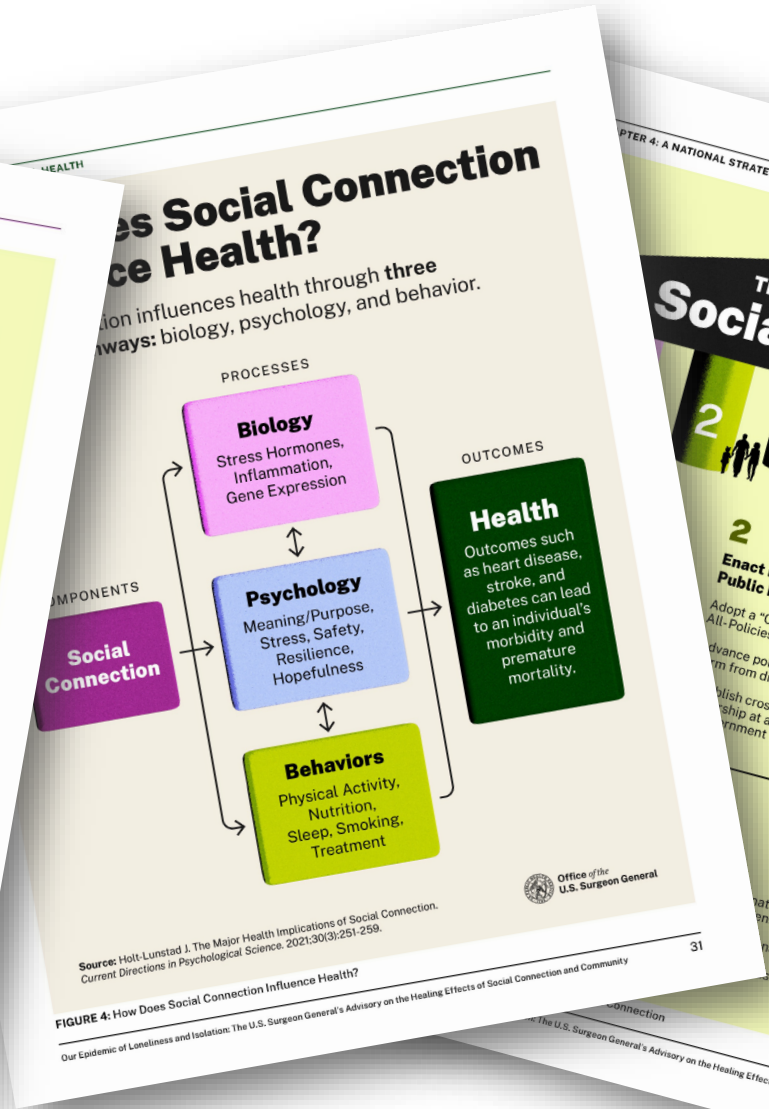
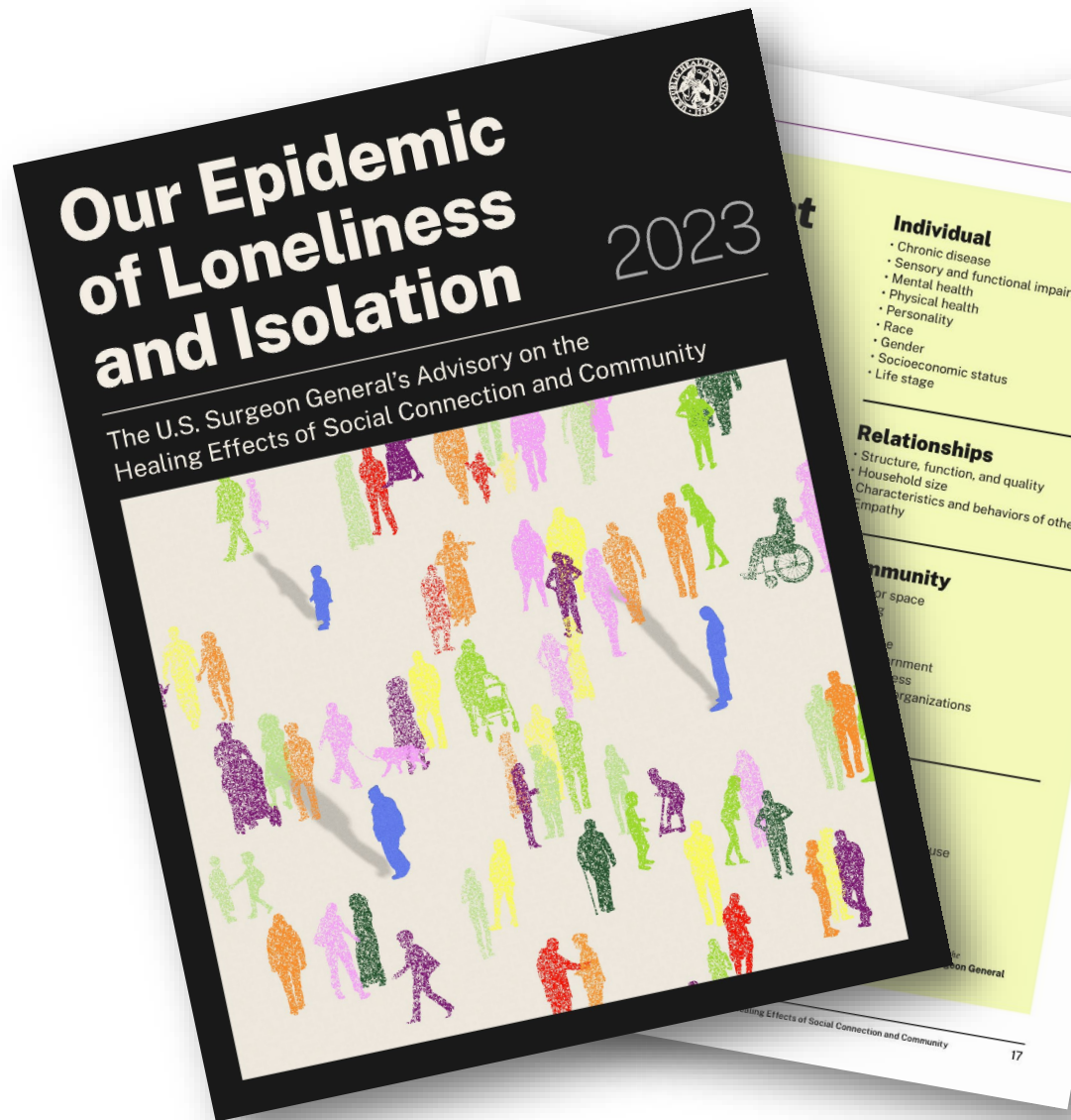
Objectives: This meta-analytic review was conducted to determine the extent to which social relationships influence risk for mortality, which aspects of social relationships are most highly predictive, and which factors may moderate the risk.

Data extraction: Data were extracted on several participant characteristics, including cause of mortality, initial health status, and pre-existing health conditions, as well as on study characteristics, including length of follow-up and type of assessment of social relationships.

Results: Across 148 studies (308,849 participants), the random effects weighted average effect size was OR = 1.50 (95% CI 1.42 to 1.59), indicating a 50% increased likelihood of survival for participants with stronger social relationships. This finding remained consistent across age, sex, initial health status, cause of death, and follow-up period. Significant differences were found across the type of social measurement evaluated ($p < 0.001$); the association was strongest for complex measures of social integration (OR = 1.91; 95% CI 1.63 to 2.23) and lowest for binary indicators of residential status (living alone versus with others) (OR = 1.19; 95% CI 0.99 to 1.44).

Conclusions: The influence of social relationships on risk for mortality is comparable with well-established risk factors for mortality. Please see later in the article for the Editors' Summary.

Priority of Social Connectedness:

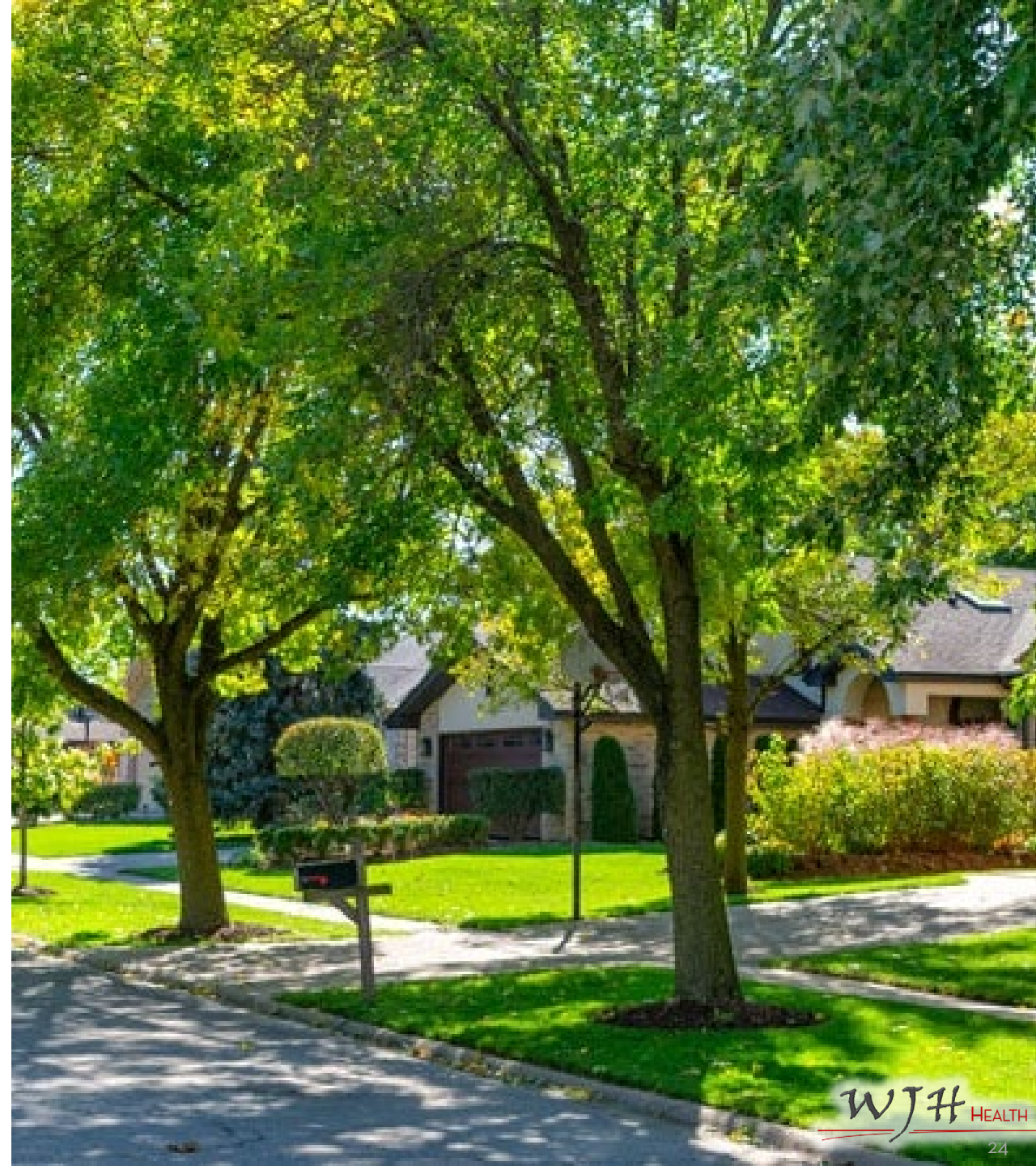


Source: Holt-Lunstad, J.; et al.. "Our Epidemic of Loneliness and Isolation: The U.S. Surgeon General's Advisory on the Healing Effects of Social Connection and Community." Issued 3 May 2023. <https://www.hhs.gov/sites/default/files/surgeon-general-social-connection-advisory.pdf>. Accessed 24 Oct 2023.

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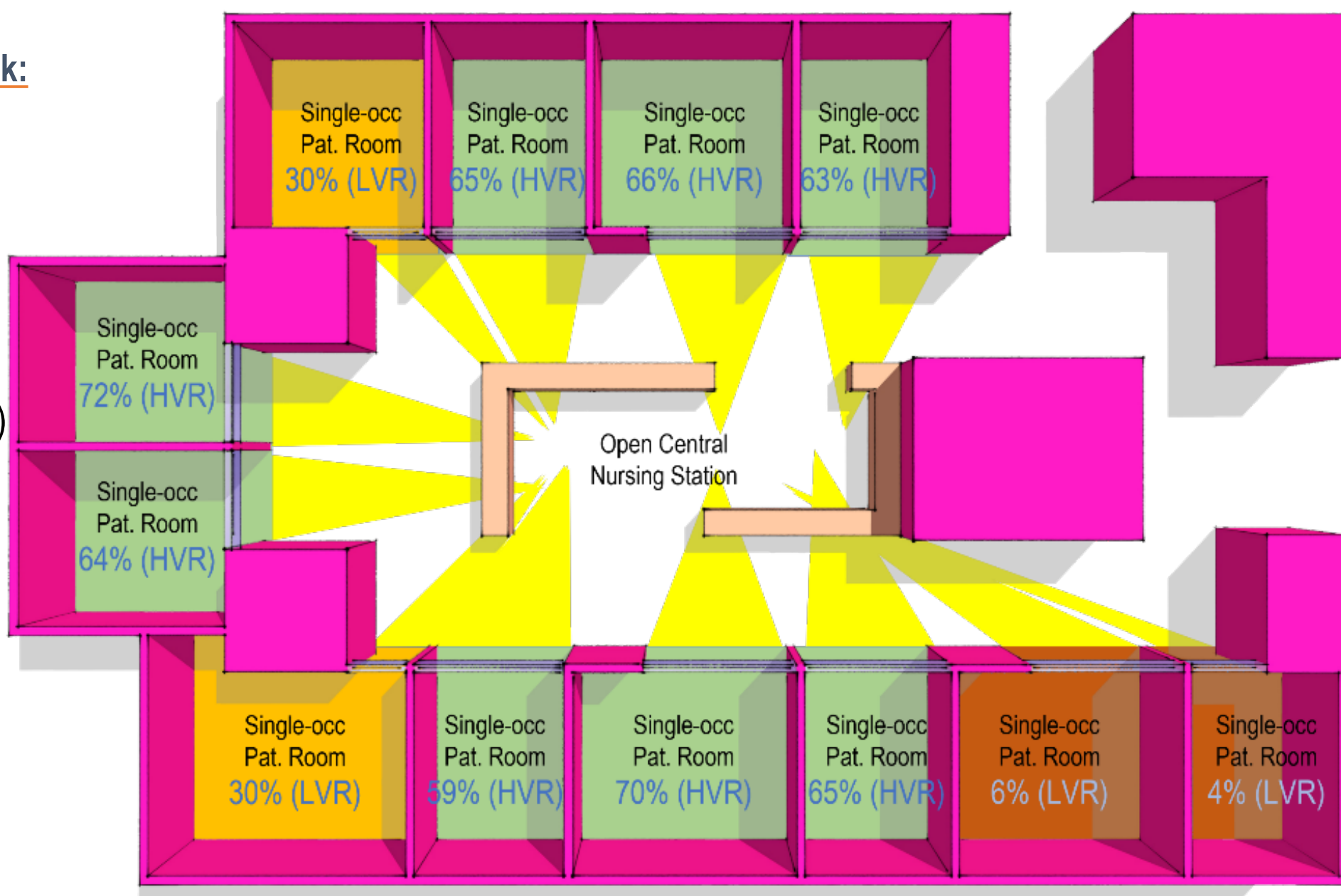
Correlation of
Epigenetic aging is
slowed by 2.5
years with regular,
long-term exposure
to greenspace.

Source: Kim, Kyeezu, et al. "Inequalities in Urban Greenness and Epigenetic Aging: Different Associations By Race And Neighborhood Socioeconomic Status". *Science Advances*. vol.9, no 26. 28 Jun 2023 DOI: <https://www.science.org/doi/10.1126/sciadv.adf8140>. Accessed 24 Oct 2023

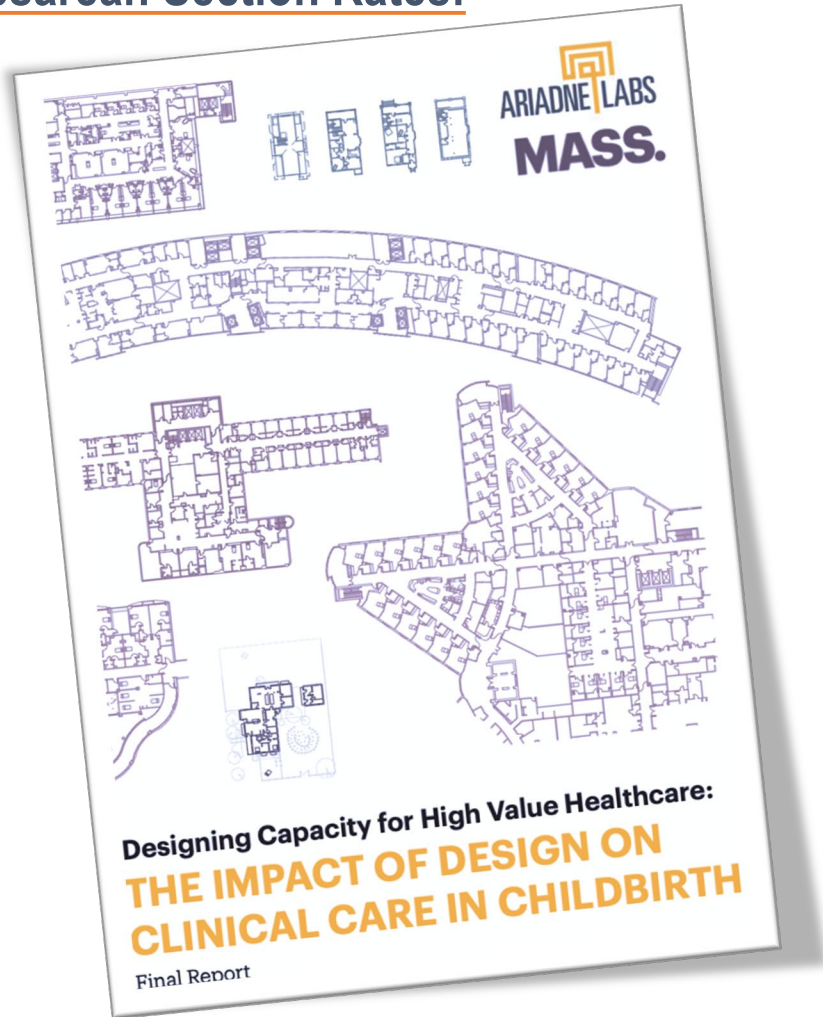


ICU Design & Mortality Risk:

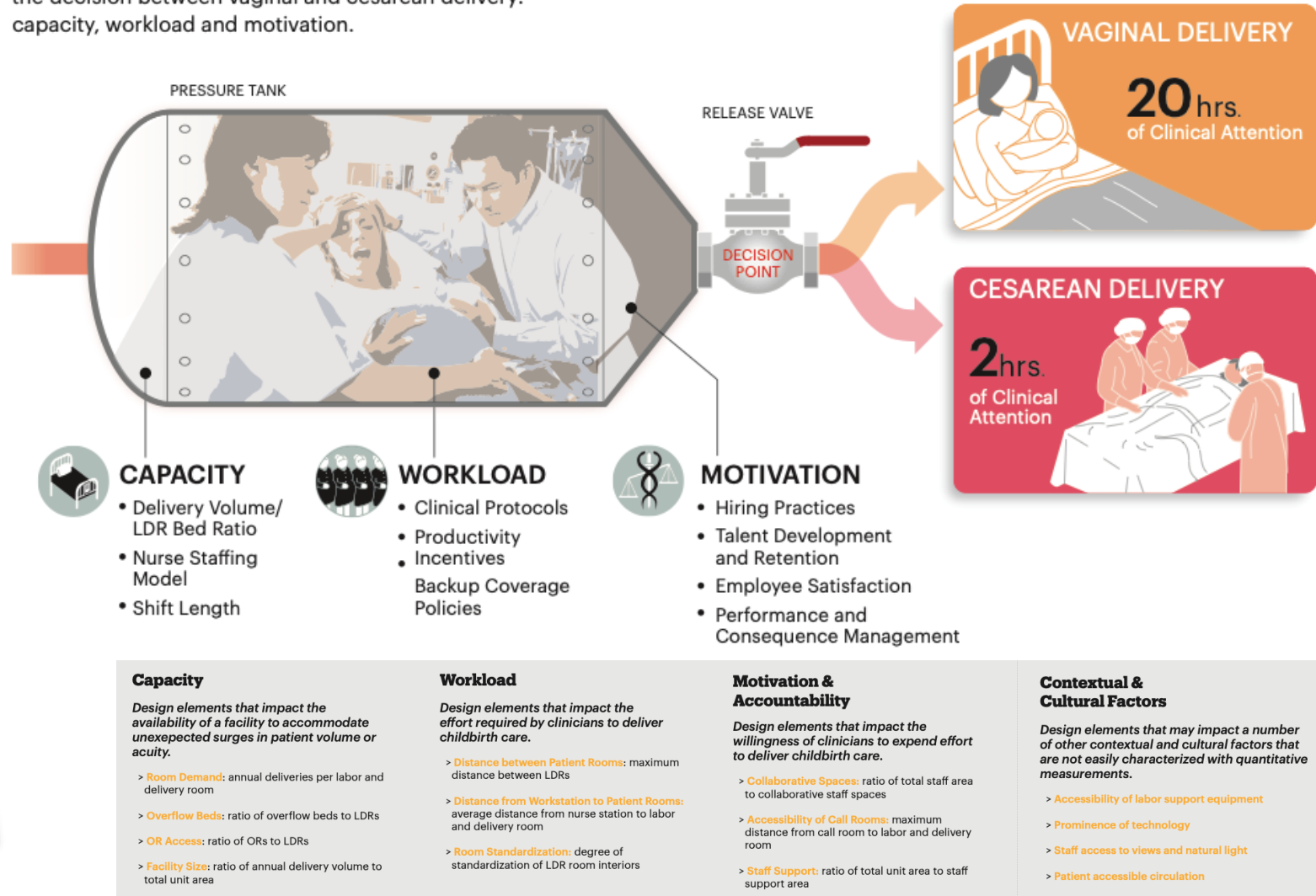
Assigning the sickest patients (APACHE >30) to a low visibility room (LVR vs HVR) resulted in a **28% higher** mortality rate.



Obstetric Suite Design & Cesarean Section Rates:



In the Ariadne team's original Pressure Tank Model, developed in prior work on management of care processes in childbirth, three system factors influence the decision between vaginal and cesarean delivery: capacity, workload and motivation.



Sources: Hamilton BE, Martin JA, Osterman MJK. "Births: Preliminary Data for 2015." National Vital Statistics Report. Centers for Disease Control and Prevention. 2016.

Kozhimannil KB, Law MR, Virnig BA. Cesarean delivery rates vary tenfold among US hospitals; reducing variation may address quality and cost issues. Health Affairs (Millwood). 2013 Mar;32(3):527-35. doi: 10.1377/hlthaff.2012.1030. PMID: 23459732; PMCID: PMC3615450.

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The Healing Garden is a space for patients and family members to find peace and respite.

RESTRICTED STAFF USE

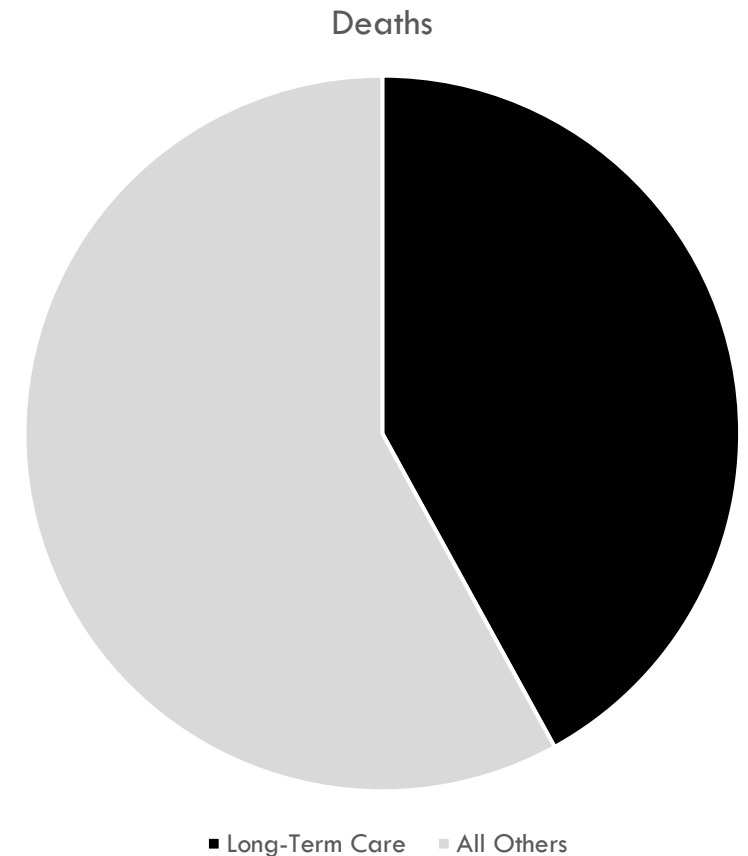
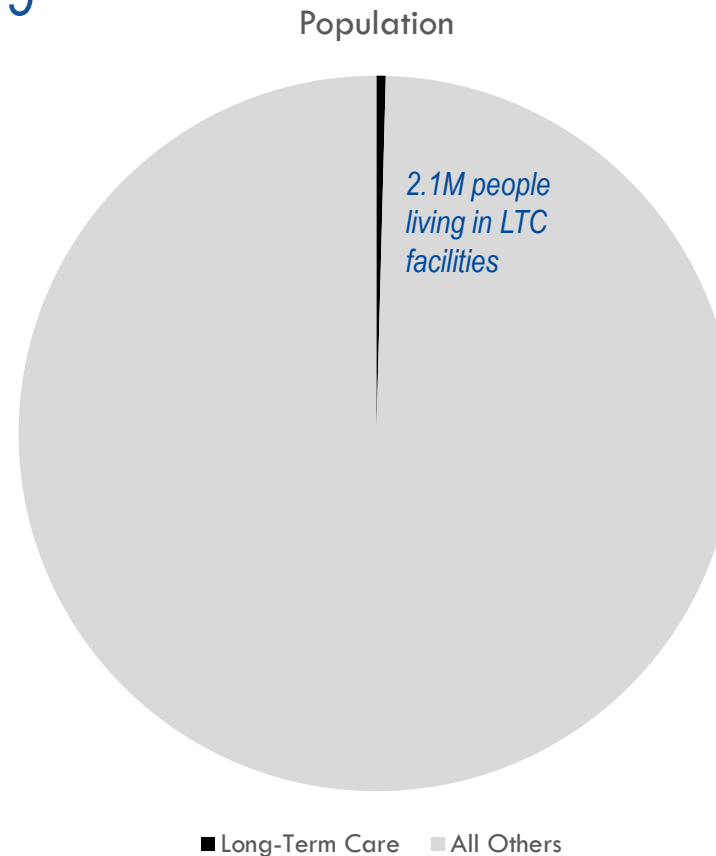




Long-term Care Facility Design & COVID Mortality:

Differential Impact of COVID-19

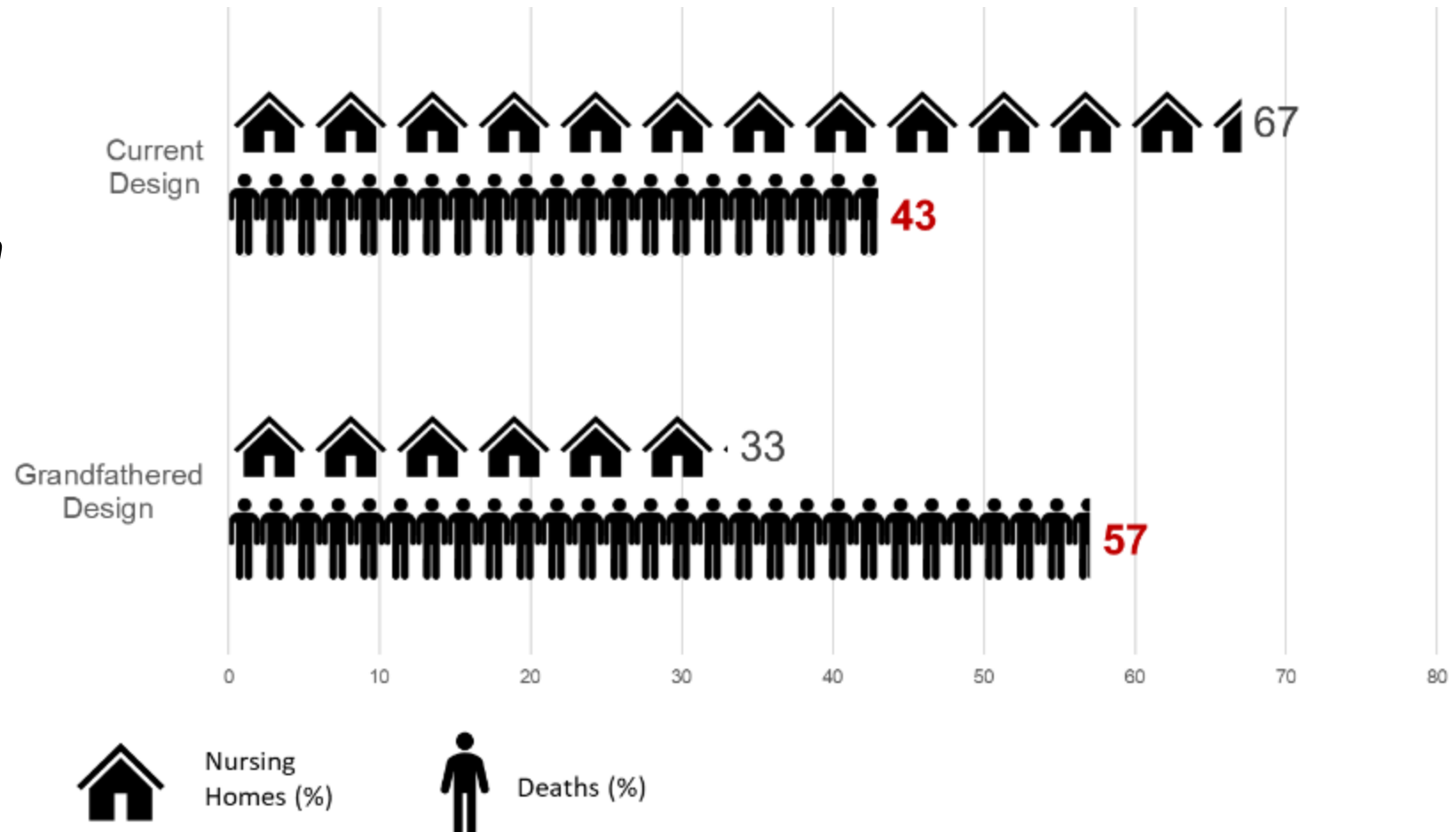
Small proportion of the Canadian population produced almost half of COVID deaths.



Long-term Care Facility Design & COVID Mortality:

Deadly Cost of Delay – Comparing Canadian Nursing Home Upgrades

*Living in a Canadian nursing home grandfathered into the 1972 design standard nearly **doubled the risk of death** due to COVID-19.*



Long-term Care Facility Design & Harms:

Compare LTC fall rates of public and resident rooms based on changes in lighting:

- between static spectrum fluorescent lamps (\$0/bed)
- dynamically scheduled intensity and spectral variation in lighting (\$1,700/bed)

43% reduction in fall rates



Sources: Grant, Leilah; St. Hilaire, Milissa; Heller, Jenna; Heller, Rodney; Lockley, Steven; Rahman, Shadab. "Impact of Upgraded Lighting on Falls in Care Home Residents". JAMDA: Journal of Post-Acute and Long-term Care Medicine. Vol 23, Is 10, P1698-1704, E2. October 2022. [https://www.jamda.com/article/S1525-8610\(22\)00471-6/fulltext](https://www.jamda.com/article/S1525-8610(22)00471-6/fulltext). Accessed 23 Oct 2023.

Image Credit: The Lighting Practice. "What is Circadian Lighting?": <https://www.thelightingpractice.com/what-is-circadian-lighting/>. Accessed 23 Oct 2023.

Long-term Care Facility Design & Illusion:



Project: De Hogeweyk, Dementia Village, Weesp, The Netherlands; Molenaar & Bol & VanDillen

Weir, Peter. The Truman Show. Paramount Pictures, 1998.

Emerging Ethical Issues in LTC Design:

Long-term care facility design is being increasingly used to modify behavior and create illusions that pacify residents, **without research or oversight.**

Design interventions may include:

- The illusion that a patient is free to leave, when they are not.
- The illusion of carrying out plans/reaching goals when they are not.
- Immersive environments that convince the residents they are either somewhere else, or in a different time period.
- Controlling resident behavior with designs that induce immobility or evoke fear.

These efforts are no different in kind than interventions undertaken in medical research or pharmaceutical development, either real or placebo.

Subject Matter Expert External Affirmation

Q: Is designing for health an ethical imperative, and if so, how should the AIA Code of Ethics be adjusted to require the health effects to be considered?



Andrew Dannenberg, MD MPH
University of Washington



Mindy Fullilove, MD
Author & Urbanist



Ray Pentecost, DPh, FAIA
Texas A&M University



Fatima Cody Stanford, MD, MPH
Massachusetts General Hospital



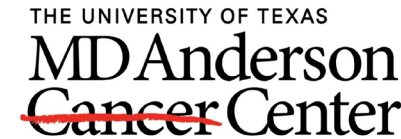
Allen Wiess, MD
Blue Zones



Liz York, FAIA
Centers for Disease Control



Ellen Taylor, PhD
Center for Health Design

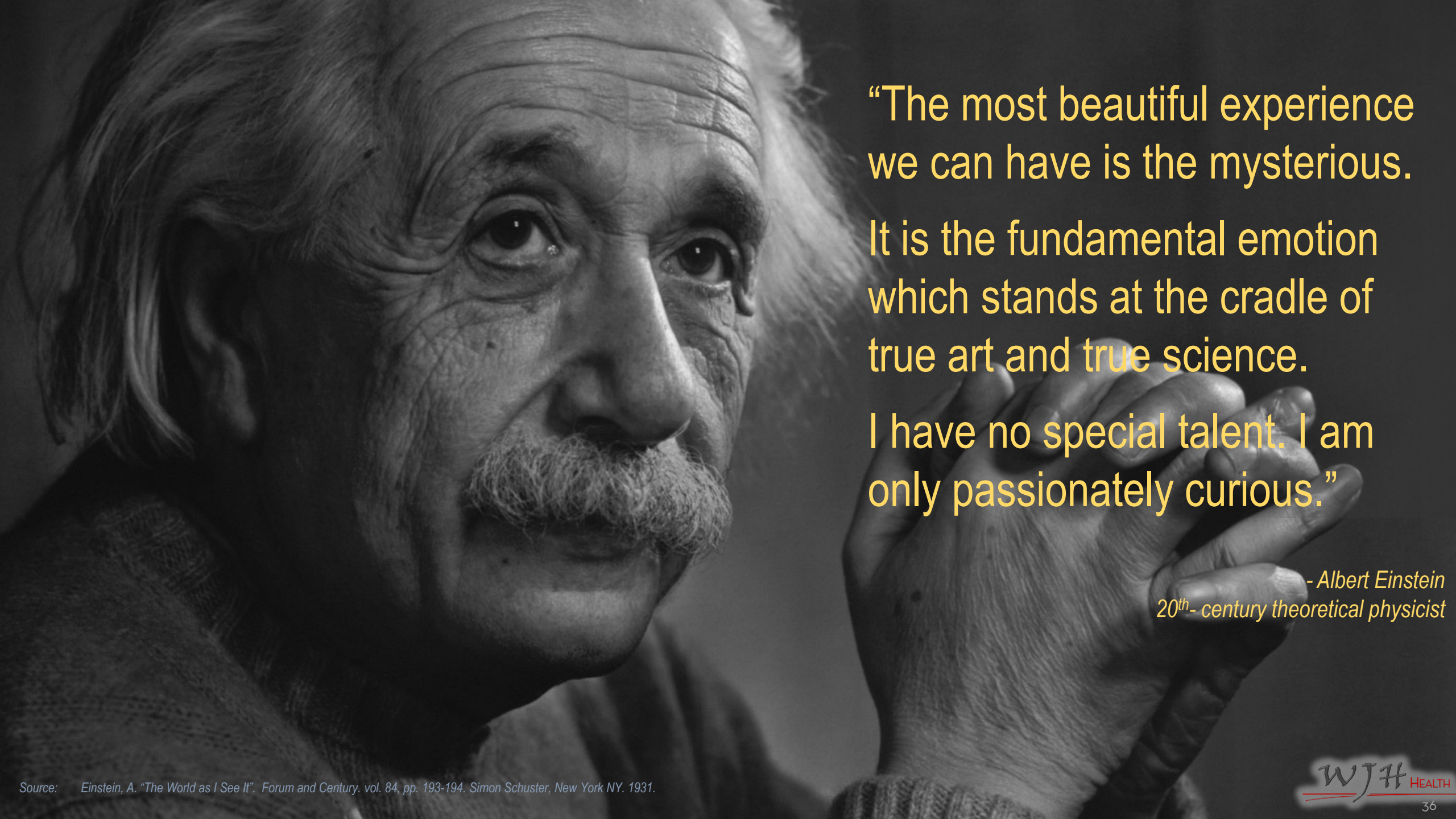


Making Cancer History®



American College of
Healthcare Executives
for leaders who care®





“The most beautiful experience we can have is the mysterious.

It is the fundamental emotion which stands at the cradle of true art and true science.

I have no special talent. I am only passionately curious.”

- Albert Einstein
20th- century theoretical physicist



“Stay curious, my friend...”

- *The Most Interesting Man in the World*

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Image Credit: Doner. Detroit. 1968

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Seattle Children's Building Care: Diagnostic and Treatment Facility, Seattle WA; ZGF Architects

Javits Center Coronavirus Field Hospital; New York NY; U.S. Army Corps of Engineers

De Hogeweyk, Dementia Village, Weesp, The Netherlands; Molenaar & Bol & VanDillen

Faculty



William J. Hercules, FAIA, FACHA, FACHE
CEO, WJH Health



Bill@WJH-health.com



407.312.1065



<https://www.linkedin.com/in/billhercules>

Bill Hercules inspires leadership teams by shaping their future places of care. Having planned and/or executed architecture totaling 34.6-MSF and \$12.35-Bpv, Bill's cross-disciplinary and bold ideation accelerates mission alignment create frameworks that attract the future through focused inquiry and innovative approaches outside of historical channels.

Bill founded WJH, a global consultancy that resolves the place of care at the nexus of mission, performance, and experience. He is the only practicing global triple-Fellow in the American Institute of Architects (AIA), the American College of Healthcare Architects (ACHA), and the American College of Healthcare Executives (ACHE). He is a global expert in healthcare design with 125 printed and spoken publications, having been quoted in industry and popular press, and he has directly supported 40 professionals in their pursuit of fellowships and certifications. He was recently appointed a Senator of the World Business Angels Forum with the G20.

He is a Past-President of the ACHA and currently leads the Well-being study for the national AIA Strategic Council. He served on the AIA COVID Rapid Response Taskforce – work which was subsequently translated and distributed globally by the U.S. State Department, and on the Hospital Surge Capacity taskforce of the Facility Guidelines Institute. He is also currently leading a research team pioneering the intersection of design and bioethics, and he recently produced a 7-part series on design and finance.