



Stanford
MEDICINE

The Academic Medical Center in the Century of Biomedicine

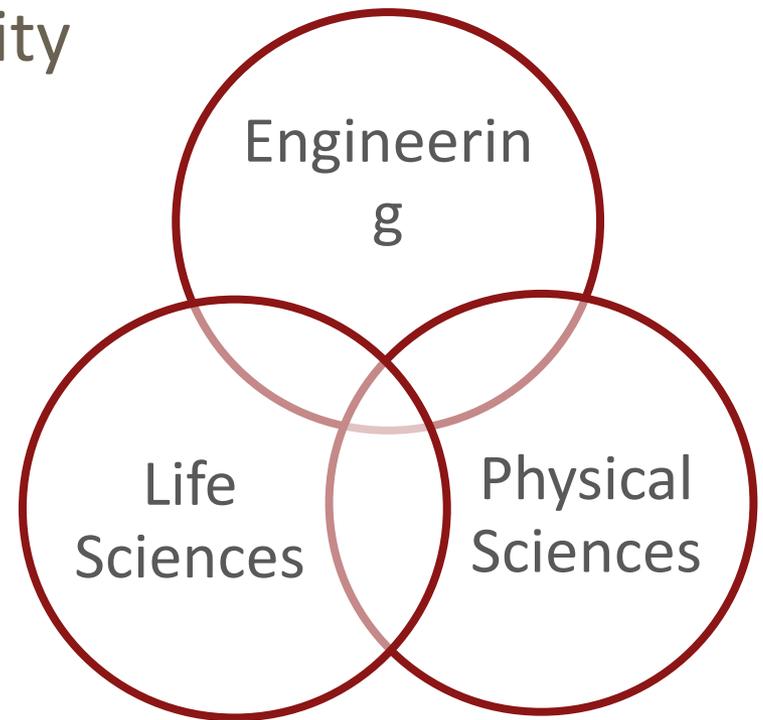
June 16, 2014

Lloyd B. Minor, M.D.

Naumann Dean, Stanford University School of Medicine

opportunities

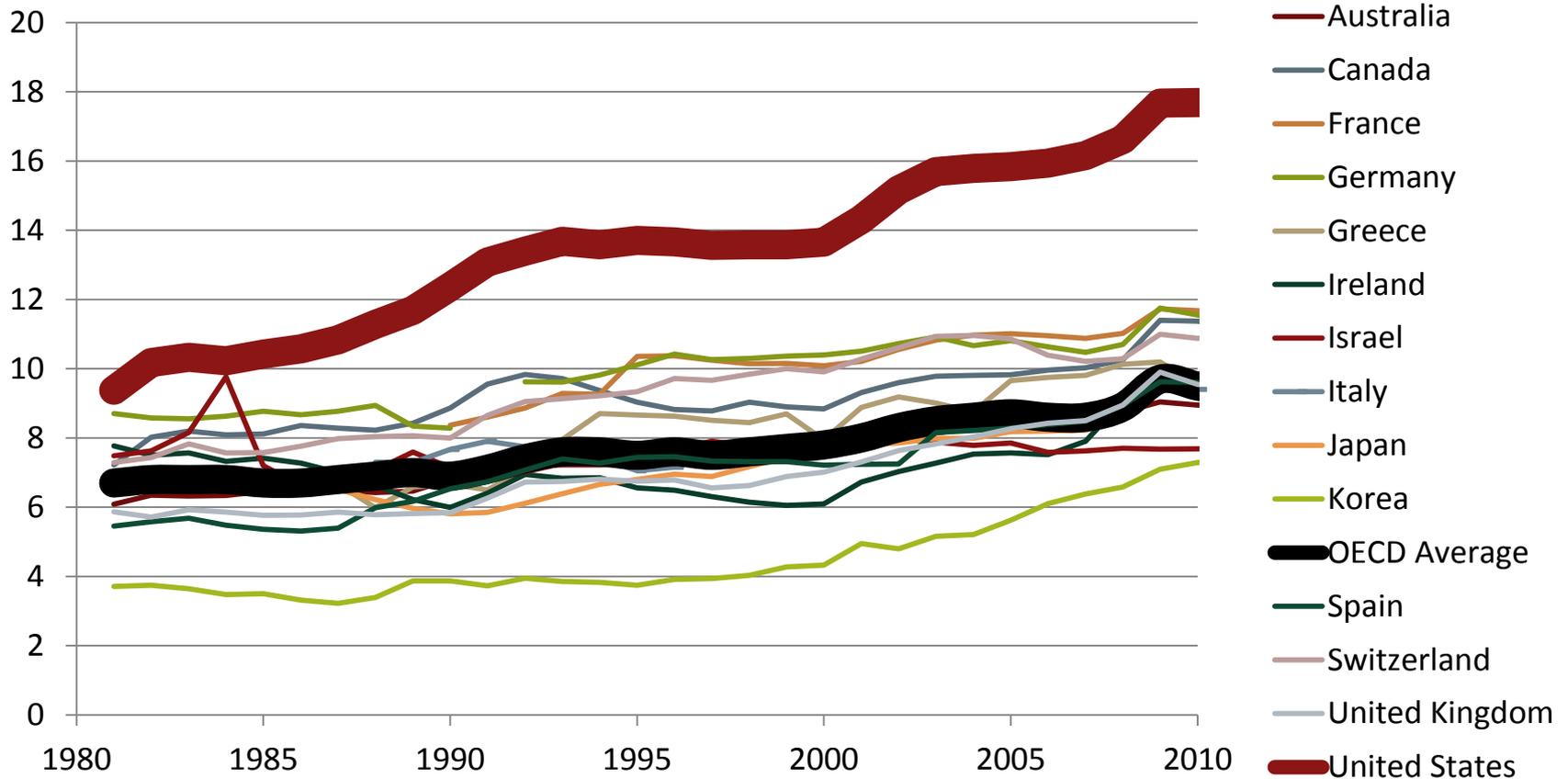
So much promise and possibility
as new knowledge and
technologies accelerate the
pace of biomedical discovery



yet significant challenges...

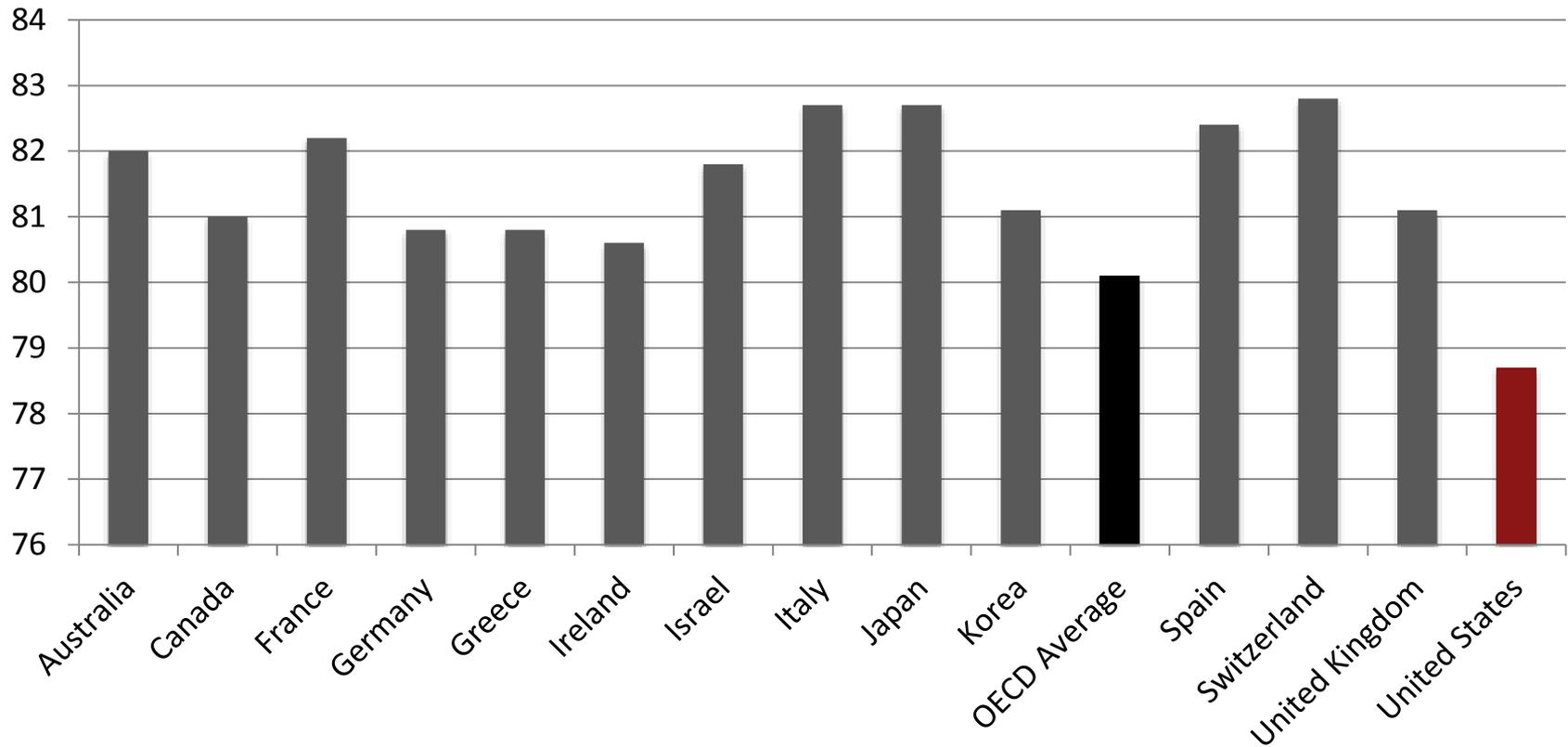
high cost

Health Expenditure as a Percent of GDP, 1981-2011

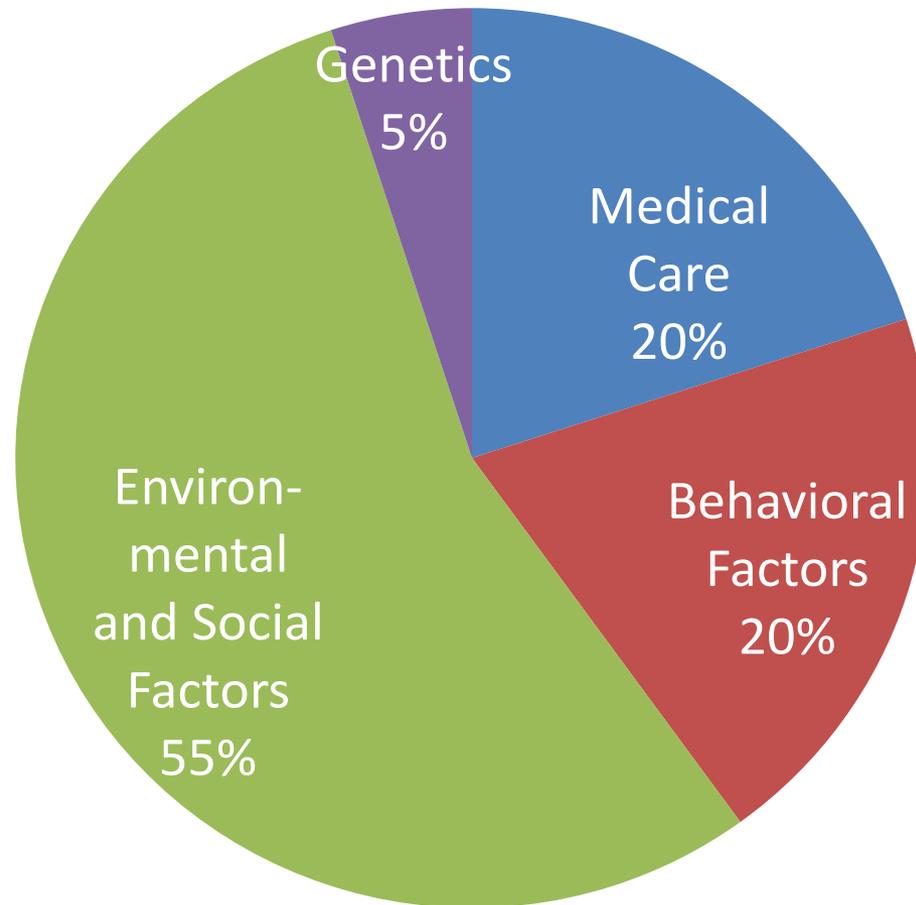


poor outcomes in the U.S.

Life Expectancy at Birth, 2011



health is more than medical care





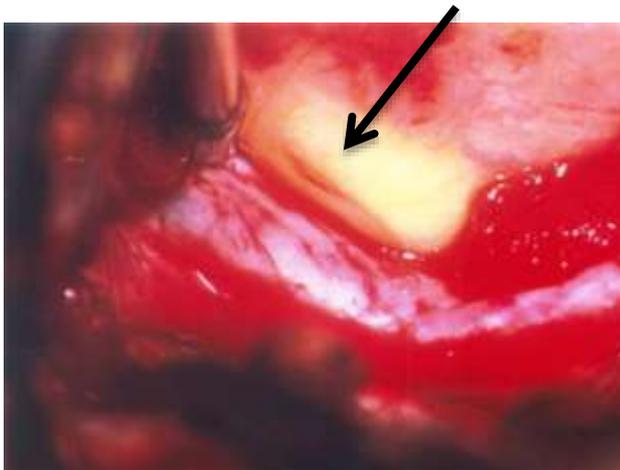
then and now:

the expanding and central role of academic medical centers in fueling innovation, empowering future leaders, and transforming patient care in the Century of Biomedicine

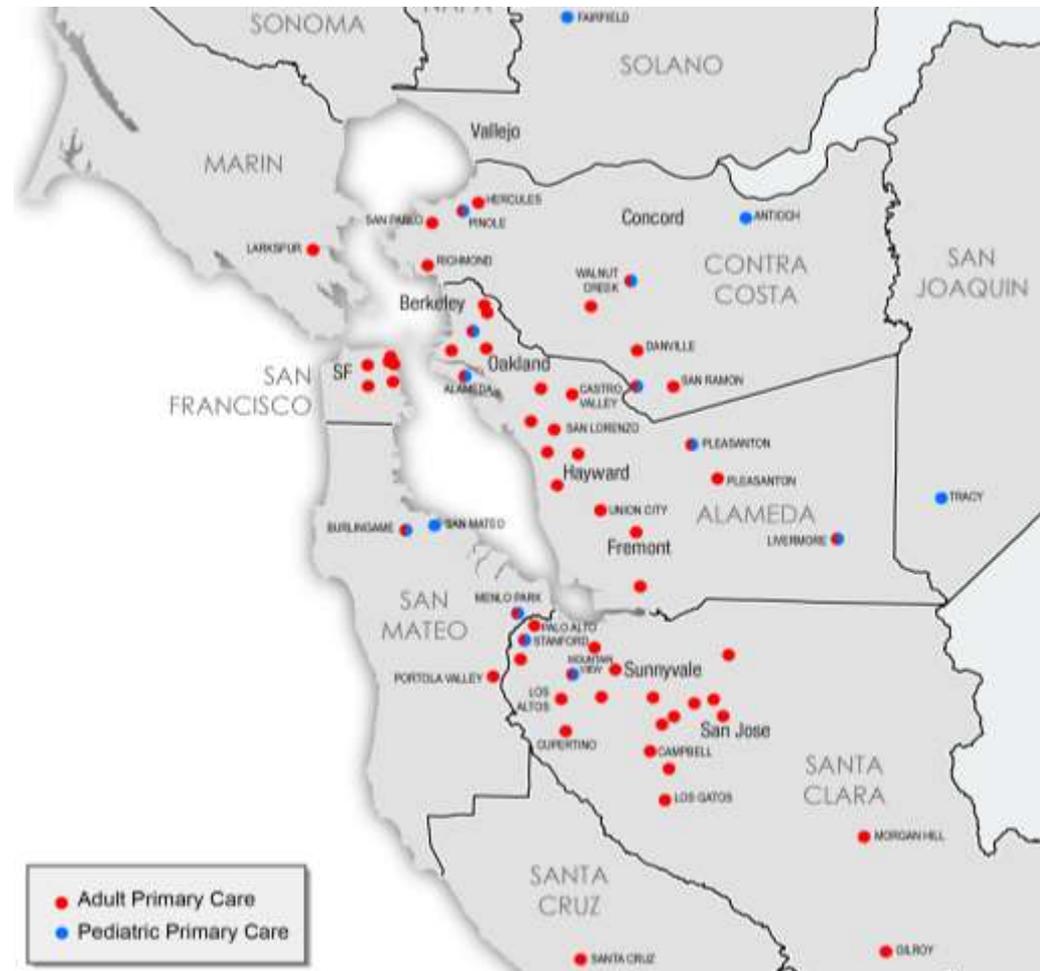
then: complex care in hospitals

now: and primary & secondary care in communities

Superior Canal Dehiscence



We have excelled at providing complex treatment for complex problems, yet many lack access to primary and secondary care in their communities

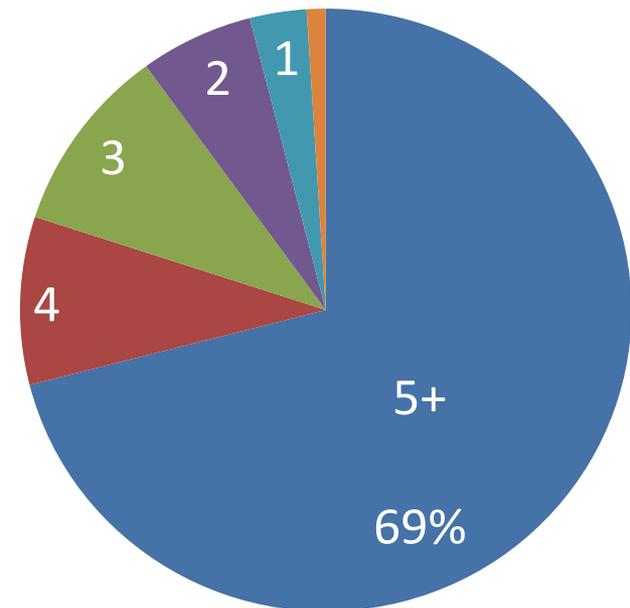


then: acute conditions

now: and chronic conditions

Chronic conditions are responsible for most deaths and most of the dramatically rising cost of health care, yet our delivery system is still primarily designed to treat acute conditions

Medicare Spending,
By Number of Chronic Conditions



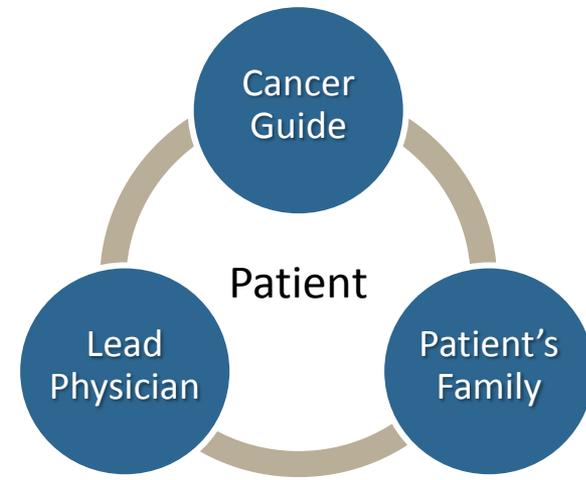
Arnie Milstein's Ambulatory Care ICU at Stanford coordinates care for individuals with multiple chronic conditions



then: care

now: and care delivery

Providers tend to work in silos,
providing fragmented care on a
disease-by-disease basis



Stanford Cancer Guide:

- An active member of a patient's care team
- A patient's single point-of-contact
- Responsible for triaging a patient's questions
- Ensures flawless coordination across all services



then: quality

now: and value



Fee-for-service payment model rewards volume over value

Relationship Between Quality and Medicare Spending, By State



Accountable Care:
Network of providers and hospitals who share responsibility for the total spending and quality of health care for a defined population



then: patient

now: and population



Stanford is building a learning health care system designed to exploit data from multiple sources to develop more effective interventions that lead to improved health outcomes at a lower cost

evidence-based practice with **practice-based** medicine

harnessing the **power of big data** on a global scale

then: physical
now: and virtual



Bill Kennedy's virtual
pediatric urology clinic



Core biochemistry "flipped
classroom" for MD students

then: individual
now: and team

Teamwork is the foundation
of coordinated and safe
health care delivery



Peter Pronovost's checklist

- 66% ↓ central-line infections
- 70% ↓ ventilator-associated pneumonia

Teamwork is the foundation
of multidisciplinary
scientific collaboration



Spectrum

then: discovery & innovation

now: and translation & origination

While modern biomedical research has led to a dramatic increase in the number of potential disease modifying targets, translation of these discoveries into tangible health benefits has been slow



Stefanie Jeffrey's
MagSweeper translation

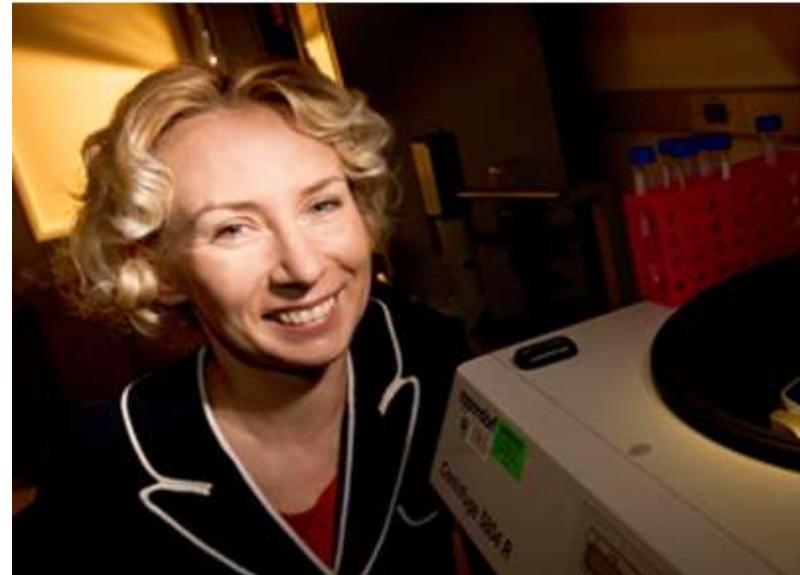


12% of Stanford MD graduates also earn a PhD

then: federal support

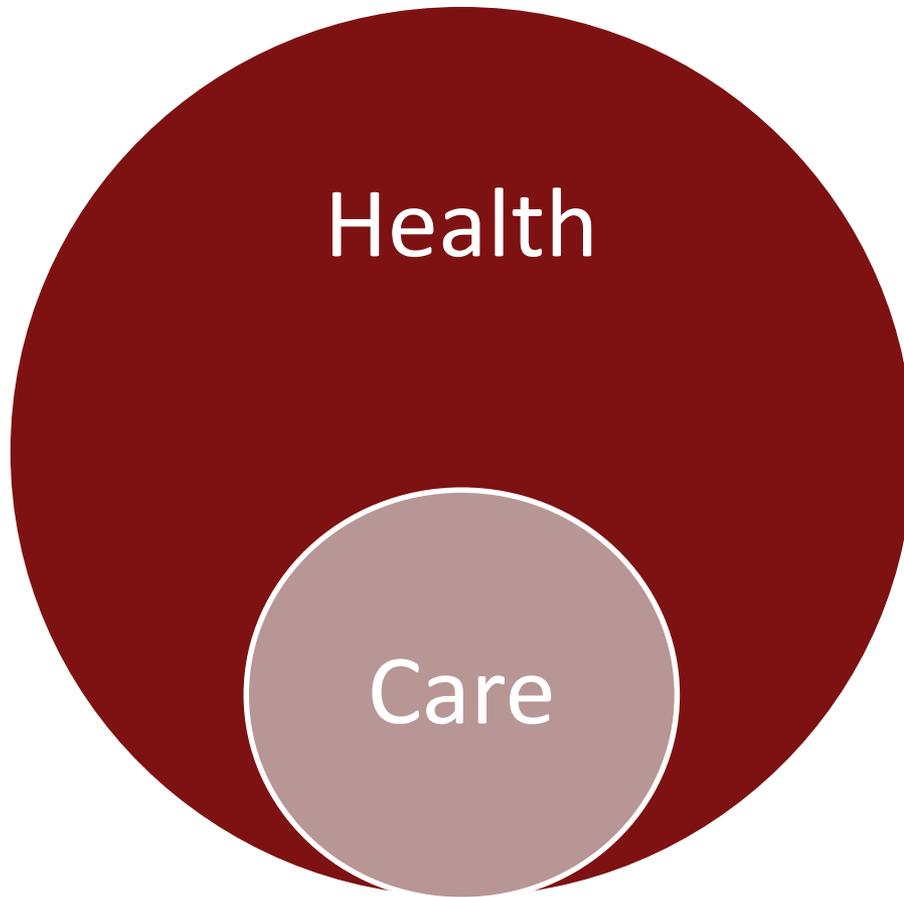
now: and philanthropic & industry support

Pressure is increasing to deliver pre-defined deliverables and short-term successes, but innovative research requires time to fail and freedom to go where the research leads



Joanna Wysocka's innovative research on the origins of human facial diversity

a vision of what is possible



From academic *medicine*

To academic *health*



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