After the Golden Age: what is medicine for?

Seamus O'Mahony
Centre for the Humanities and Health
King's College London

- “Lately, I’m getting the feeling that I came in at the end. The best is over”

BRITISH SOCIETY OF GASTROENTEROLOGY

1937 - 1987

A Selection of Scientific Papers

SK&F

Gut, 1990, **31**, 489–493

BIRTHDAY TRIBUTE

Sir Francis Avery Jones at 80

Sir Francis Avery Jones celebrates his 80th birthday this month. The editor and the editorial committee join the contributors and his innumerable friends and colleagues in wishing him a very happy birthday.

From Bryan Brooke

It was at Friern Hospital, Colney Hatch, that we met, a mid-Victorian mental institution designed to the requirements of 19th century 'alienism'. It stood in grounds spacious enough to include a farm. All was enclosed within a high wall which was breached by Avery and me as part of a wartime redeployment from St Bartholomew's Hospital (Bart's). Avery had been one of a vintage cohort of chief assistants (the nearest equivalent to registrars of today) and at the outset of World War II he held the post of casualty physician. The advent of war dictated Avery's move, together with a contingent of honorary staff, to Friern Hospital, allocated to Bart's as one of its sector hospitals as part of the Emergency Medical Service. On arrival, Avery found himself a chief with his own beds – and yours truly a new and untried house physician.

As chief assistant on the Medical Professorial Unit, first to Witts and then Christie, Avery had already displayed a special interest in the upper GI tract. In particular his publications immediately before the war had sought to rationalise the management of acute haematemesis. Criteria had been established for the appropriate timing of surgical intervention based on his evidence of increasing mortality caused by procrastination after restoration of blood volume. At the Friern Hospital there was little to do as we waited expectantly surrounded by empty beds. When it became clear that bombs were not going to fall immediately, we were able to return to the care of the civilian population. I was able to benefit from the association with a young but thoughtful physician. Even then he was a reserved man with a shyness which can still be detected today. Behind a disarming carapace, however, I discovered wit, firm intent and an insistence on reason; *inter alia* he discarded the test meal, then *de rigeur* as a routine investigation in patients with peptic ulceration. He saw the need for research in clinical medicine after the manner of Hurst, not only for its own sake but also for the improvement of the intellect. He is now what he was then: a rebel with the soul of discretion; thus he has been able to unlock doors in the corridors of medical power – by persuading the BMA, for example, to support a journal that was to become *Gut*, and subsequently taking on the editorship. It is no surprise that he should now personify the establishment in the United Kingdom of gastroenterology – in more sense than one. To think that he may have inspired my interest in gastroenterology would be anachronistic. War was paramount which turned my thoughts to surgery, but he gave me clinical appreciation and judgement for the years to come. By May 1940 Avery had joined Horace Joules, where he started his long career and founded a school of gastroenterology at the Central Middlesex Hospital.

From Donald Kellock

The birth of the NHS was an exciting time. It was clear that hospitals and, in particular, the non-teaching hospitals which had already greatly changed during the war would have a vastly expanded role to play. The Central Middlesex Hospital was in an excellent position to take advantage of the situation. Through the foresight of the Middlesex County Council it had acquired before the war a staff of highly qualified full time doctors. These were, of course, extremely few in number and included Avery who had joined the team in 1940.

The small numbers of a whole time, young and very able staff led to an academic atmosphere in which rapid progress was possible and above all to the close cooperation between surgeons and physicians, on which treatment in gastroenterology so much depends. In the early days of emergency gastrectomy for haematemesis, it was common experience for the operation to be done by the senior surgeon, the anaesthetic given by the senior anaesthetist, while it was watched throughout and blood transfusion controlled by Avery. In the same way surgeons and physicians would meet one evening a month in each other's homes, to review the gastroenterological literature: they were joined by Tom Rowlands who was still then at University College Hospital. Tribute should also be paid to the powerful, but tolerant figure of Horace Joules

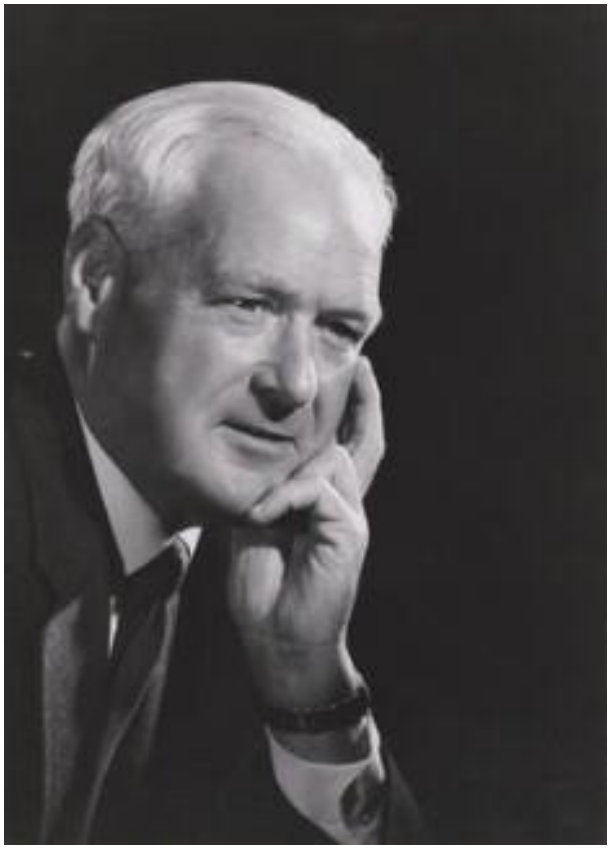
Medicine's Golden Age

- Antibiotics
- Anti-TB drugs
- Antipsychotics
- Vaccines against polio, influenza, pneumococcus, measles, diphtheria
- Elimination of smallpox
- Organ transplantation

Medicine's Golden Age

- Discovery of DNA double helix
- Endoscopy
- Cardiac by-pass surgery
- CT , ultrasound and MRI scanning

MRC Streptomycin Trial 1948: Austin Bradford Hill



BRITISH MEDICAL JOURNAL

LONDON SATURDAY OCTOBER 30 1948

STREPTOMYCIN TREATMENT OF PULMONARY TUBERCULOSIS

A MEDICAL RESEARCH COUNCIL INVESTIGATION

The following gives the short-term results of a controlled investigation into the effects of streptomycin on one type of pulmonary tuberculosis. The inquiry was planned and directed by the Streptomycin in Tuberculosis Trials Committee, composed of the following members: Dr. Geoffrey Marshall (chairman), Professor J. W. S. Blacklock, Professor C. Cameron, Professor N. B. Capon, Dr. R. Cruickshank, Professor J. H. Gaddum, Dr. F. R. G. Heaf, Professor A. Bradford Hill, Dr. L. E. Houghton, Dr. J. Clifford Hoyle, Professor H. Raistrick, Dr. J. G. Scadding, Professor W. H. Tytler, Professor G. S. Wilson, and Dr. P. D'Arcy Hart (secretary). The centres at which the work was carried out and the specialists in charge of patients and pathological work were as follows:

Brompton Hospital, London.—Clinician: Dr. J. W. Crofton, Streptomycin Registrar (working under the direction of the honorary staff of Brompton Hospital): Pathologists: Dr. J. W. Clegg, Dr. D. A. Mitchison.

Colindale Hospital (L.C.C.), London.—Clinicians: Dr. J. V. Hurford, Dr. B. J. Douglas Smith, Dr. W. E. Snell; Pathologists (Central Public Health Laboratory): Dr. G. B. Forbes, Dr. H. D. Holt.

Harefield Hospital (M.C.C.), Harefield, Middlesex.—Clinicians: Dr. R. H. Brent, Dr. L. E. Houghton; Pathologist: Dr. E. Nassau.

Bangour Hospital, Bangour, West Lothian.—Clinician: Dr. I. D. Ross; Pathologist: Dr. Isabella Purdie.

Killingbeck Hospital and Sanatorium, Leeds.—Clinicians: Dr. W. Santon Gilmour, Dr. A. M. Reevie; Pathologist: Professor J. W. McLeod.

Northern Hospital (L.C.C.), Winchmore Hill, London.—Clinicians: Dr. F. A. Nash, Dr. R. Shoulman; Pathologists: Dr. J. M. Alston, Dr. A. Mohun.

Sully Hospital, Sully, Glam.—Clinicians: Dr. D. M. E. Thomas, Dr. L. R. West; Pathologist: Professor W. H. Tytler.

The clinicians of the centres met periodically as a working subcommittee under the chairmanship of Dr. Geoffrey Marshall; so also did the pathologists under the chairmanship of Dr. R. Cruickshank. Dr. Marc Daniels, of the Council's scientific staff, was responsible for the clinical co-ordination of the trials, and he also prepared the report for the Committee, with assistance from Dr. D. A. Mitchison on the analysis of laboratory results. For the purpose of final analysis the radiological findings were assessed by a panel composed of Dr. L. G. Blair, Dr. Peter Kerley, and Dr. Geoffrey S. Todd.

Introduction

When a special committee of the Medical Research Council undertook in September, 1946, to plan clinical trials of streptomycin in tuberculosis the main problem faced was that of investigating the effect of the drug in pulmonary tuberculosis. This antibiotic had been discovered two years previously by Waksman (Schatz, Bugie, and Waksman, 1944); in the intervening period its power of inhibiting tubercle bacilli *in vitro*, and the results of treatment in experimental tuberculous infection in guinea-pigs, had been reported; these results were strikingly better than those with any previous chemotherapeutic agent in tuberculosis. Preliminary results of trials in clinical tuberculosis had been published (Hinshaw and Feldman, 1945; Hinshaw, Feldman, and Pfuetze, 1946; Keefer *et al.*, 1946); the clinical results in pulmonary tuberculosis were encouraging but inconclusive.

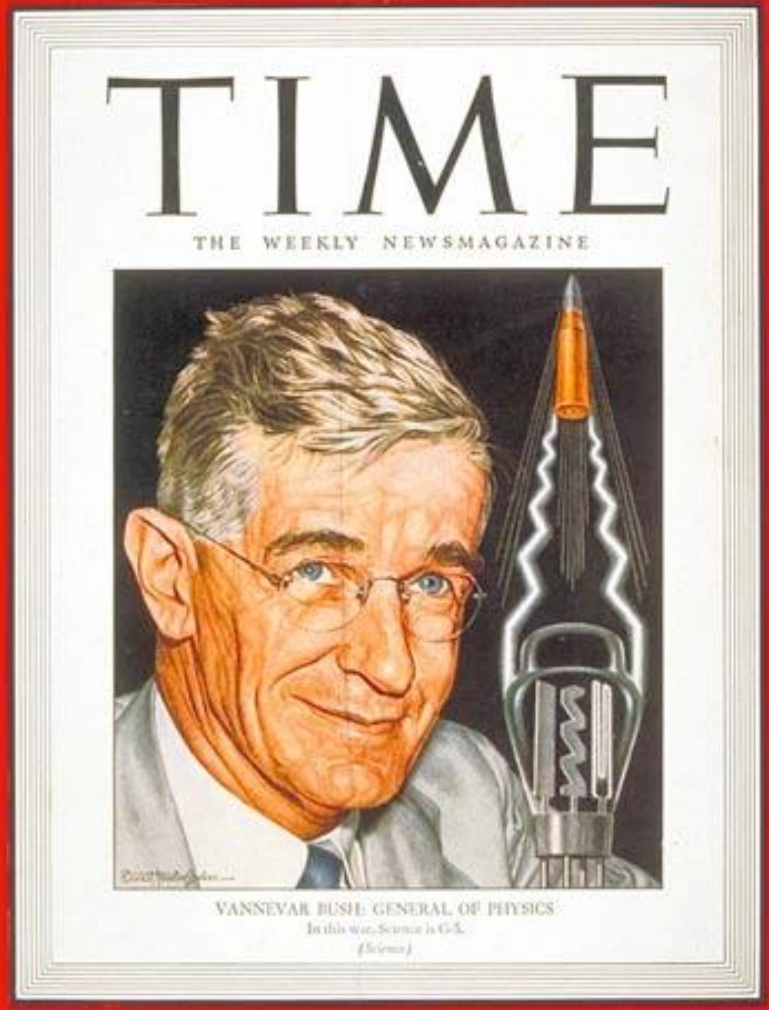
The natural course of pulmonary tuberculosis is in fact so variable and unpredictable that evidence of improvement or cure following the use of a new drug in a few cases cannot be accepted as proof of the effect of that drug. The history of chemotherapeutic trials in tuberculosis is filled with errors due to empirical evaluation of drugs (Hart, 1946); the exaggerated claims made for gold treatment, persisting over 15 years, provide a spectacular example. It had become obvious that, in future, conclusions regarding the clinical effect of a new chemotherapeutic agent in tuberculosis could be considered valid only if based on adequately controlled clinical trials (Hinshaw and Feldman, 1944). The one controlled trial of gold treatment (and the only report of an adequately controlled trial in tuberculosis we have been able to find in the literature) reported negative therapeutic results (Amberson, McMahon, and Pinner, 1931). In 1946 no controlled trial of streptomycin in pulmonary tuberculosis had been undertaken in the U.S.A. The Committee of the Medical Research Council decided then that a part of the small supply of streptomycin allocated to it for research purposes would be best employed in a rigorously planned investigation with concurrent controls.

The many difficulties of planning and conducting a trial of this nature are important enough to warrant a full description here of the methods of the investigation.

Plan and Conduct of the Trial

Type of Case

A first prerequisite was that all patients in the trial should have a similar type of disease. To avoid having to make allowances for the effect of forms of therapy other than bed-rest, the type of disease was to be one not suitable for other forms of therapy. The estimated chances of spontaneous regression must be small. On the other hand, the type of lesion should be such as to offer some prospect of action by an effective chemotherapeutic agent; for this reason old-standing disease, and disease with thick-walled



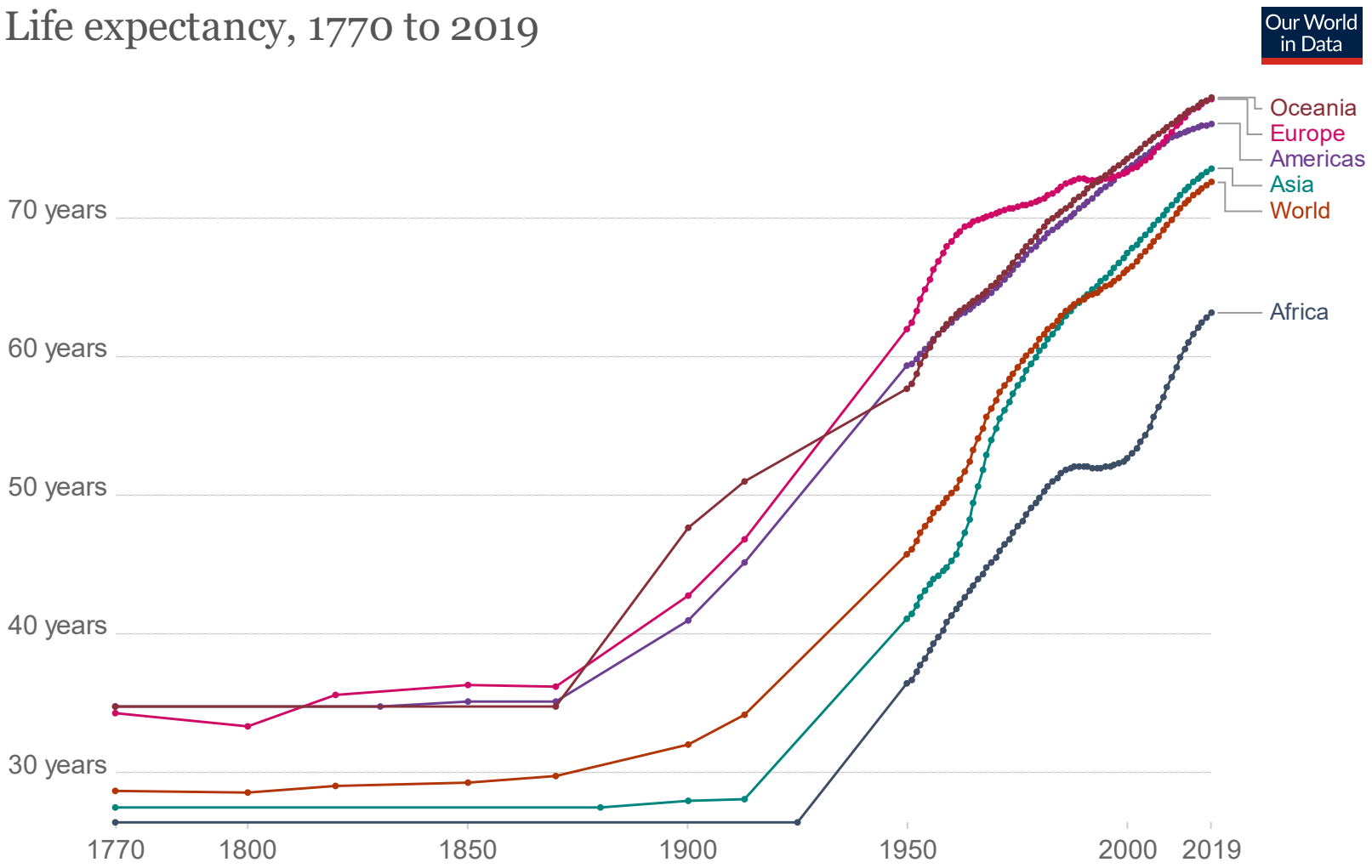
SCIENCE THE ENDLESS FRONTIER

Report to the President on a Program for Postwar Scientific Research by Vannevar Bush, Director of OSRD

The Medical-Industrial Complex

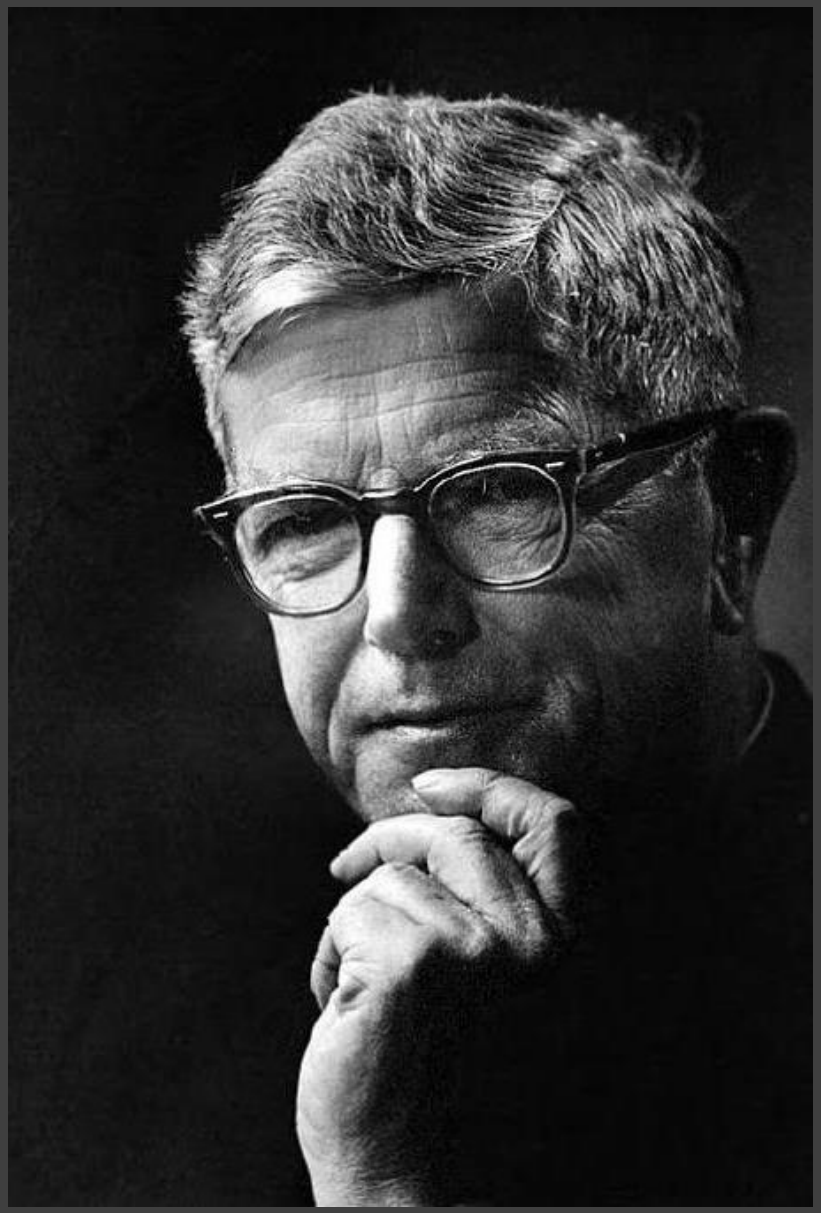
- Pharma
- “Big Science”/academic medicine
- Insurance companies
- Pharmacy
- Scientific publishers
- Tech corporations
- Venture capitalists
- Lobbyists/PR professionals/management consultants
- Medical education

Life expectancy, 1770 to 2019



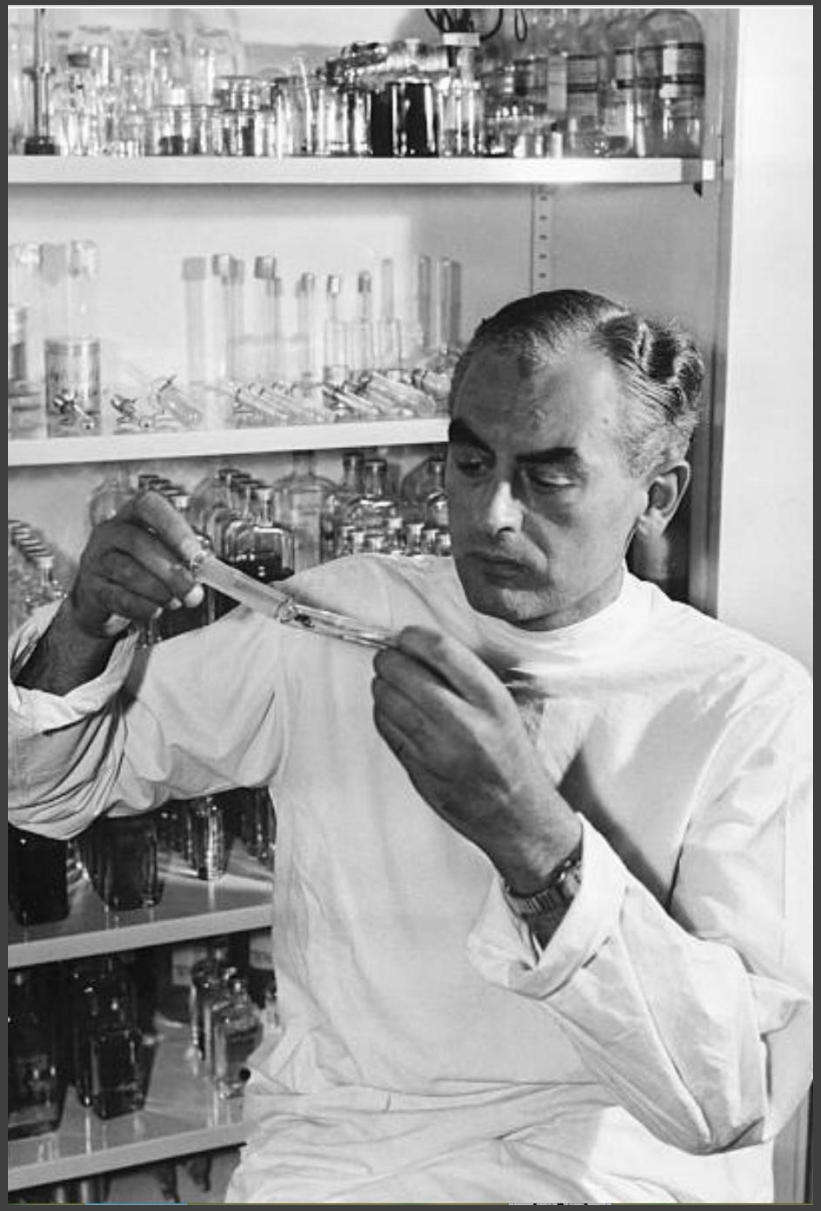
Source: Riley (2005), Clio Infra (2015), and UN Population Division (2019)
OurWorldInData.org/life-expectancy • CC BY
Note: Shown is period life expectancy at birth, the average number of years a newborn would live if the pattern of mortality in the given year were to stay the same throughout its life.

- "The same kind of effort that split the atom and took man to the moon should be turned towards conquering cancer"



Sir Macfarlane Burnet *Genes, Dreams and Realities* (1971)

- “Those things which ensure that all men die are hard to understand and even harder to change”



Sir Peter Medawar

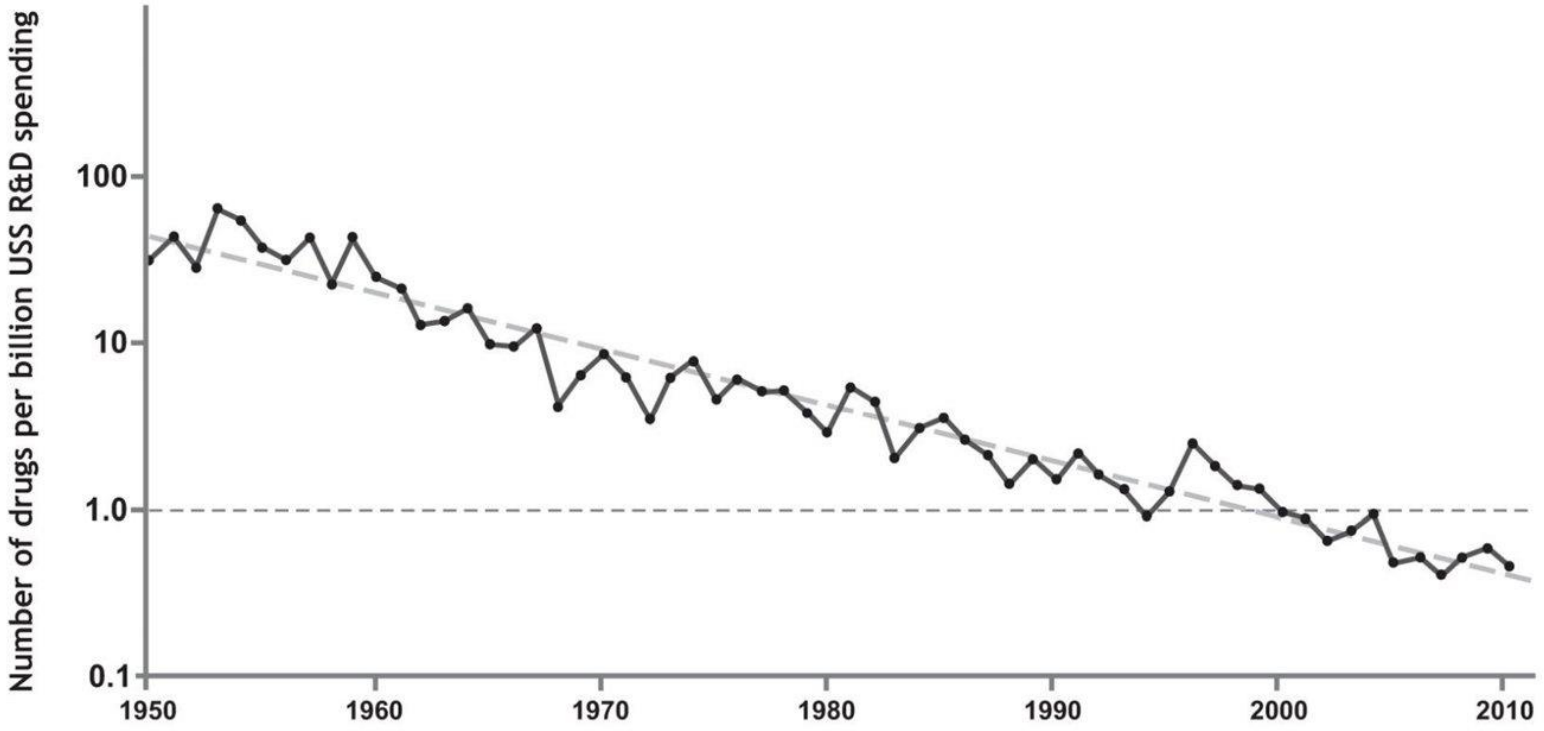
- “As an antidote to Burnet’s spiritless declaration, I roundly declare that within the next decade cures will be found for multiple sclerosis, diabetes, and at least two common cancers currently incurable.”

Risteard Mulcahy's 1987 prediction

- "By the year 2000 the commonest killers such as coronary heart disease, stroke, respiratory disease and many cancers will be wiped out"

Eroom's law

Drug development speed declines and costs double every 9 years

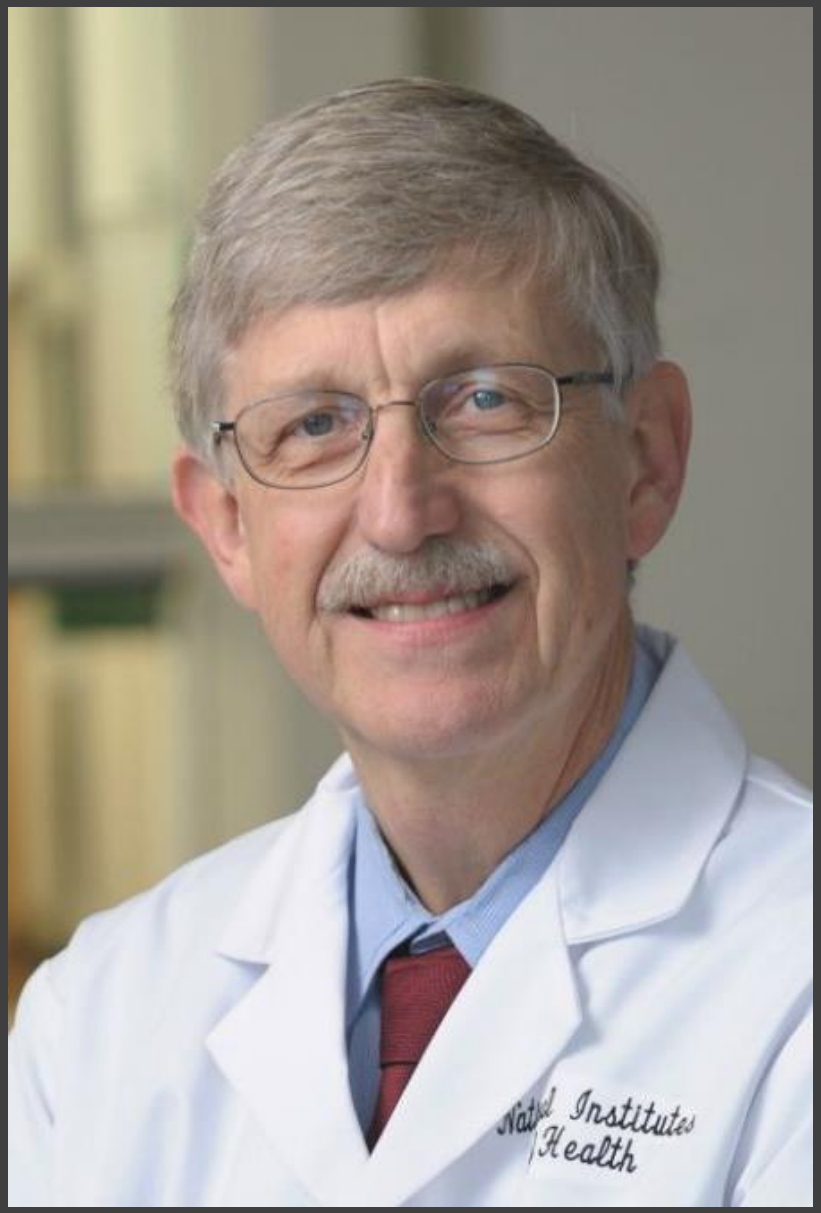


https://www.nature.com/articles/nrd3681

June 26, 2000

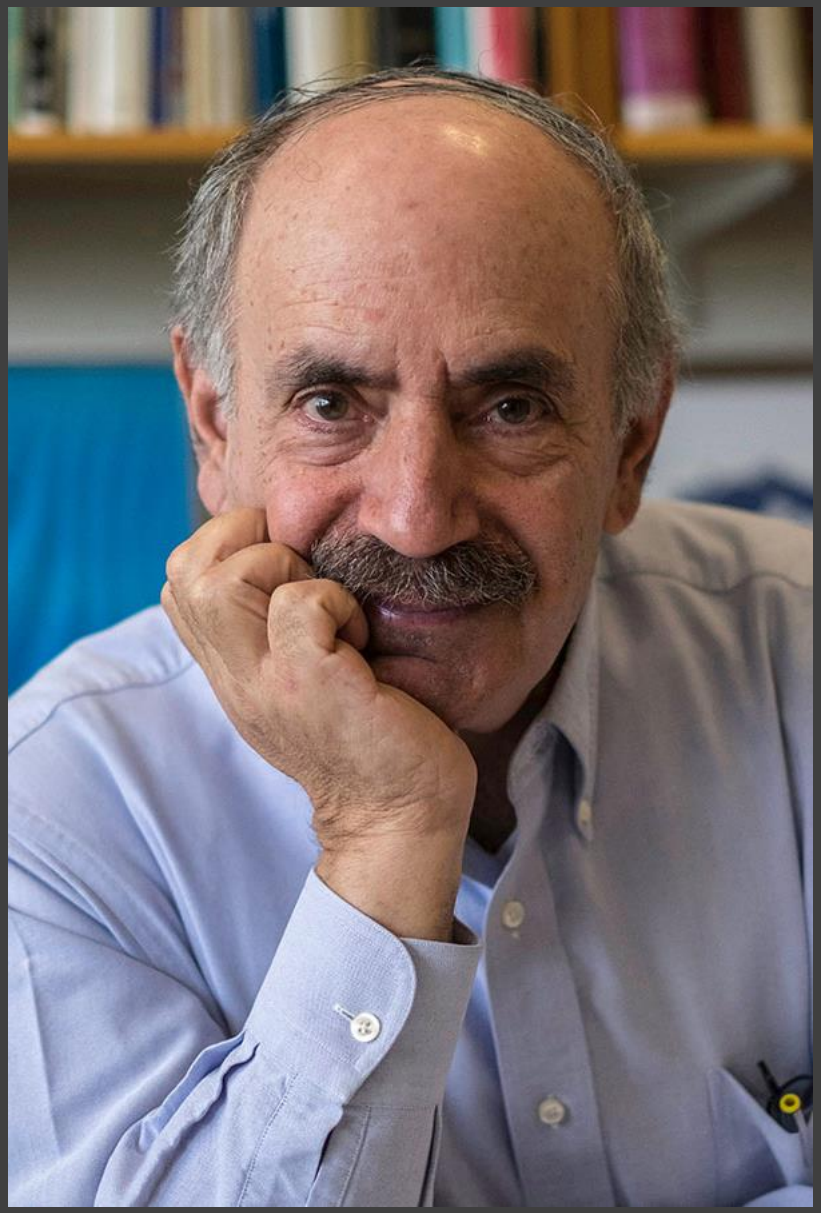
Francis Collins 2001 (*JAMA*)

- “By 2020, new gene-based designer drugs will be introduced for diabetes, hypertension, and mental illness. Every tumor will have a precise molecular fingerprint”



Francis Collins 2009 (*Nature*)

- “It’s fair to say that the Human Genome Project has not yet directly affected the health care of most individuals”

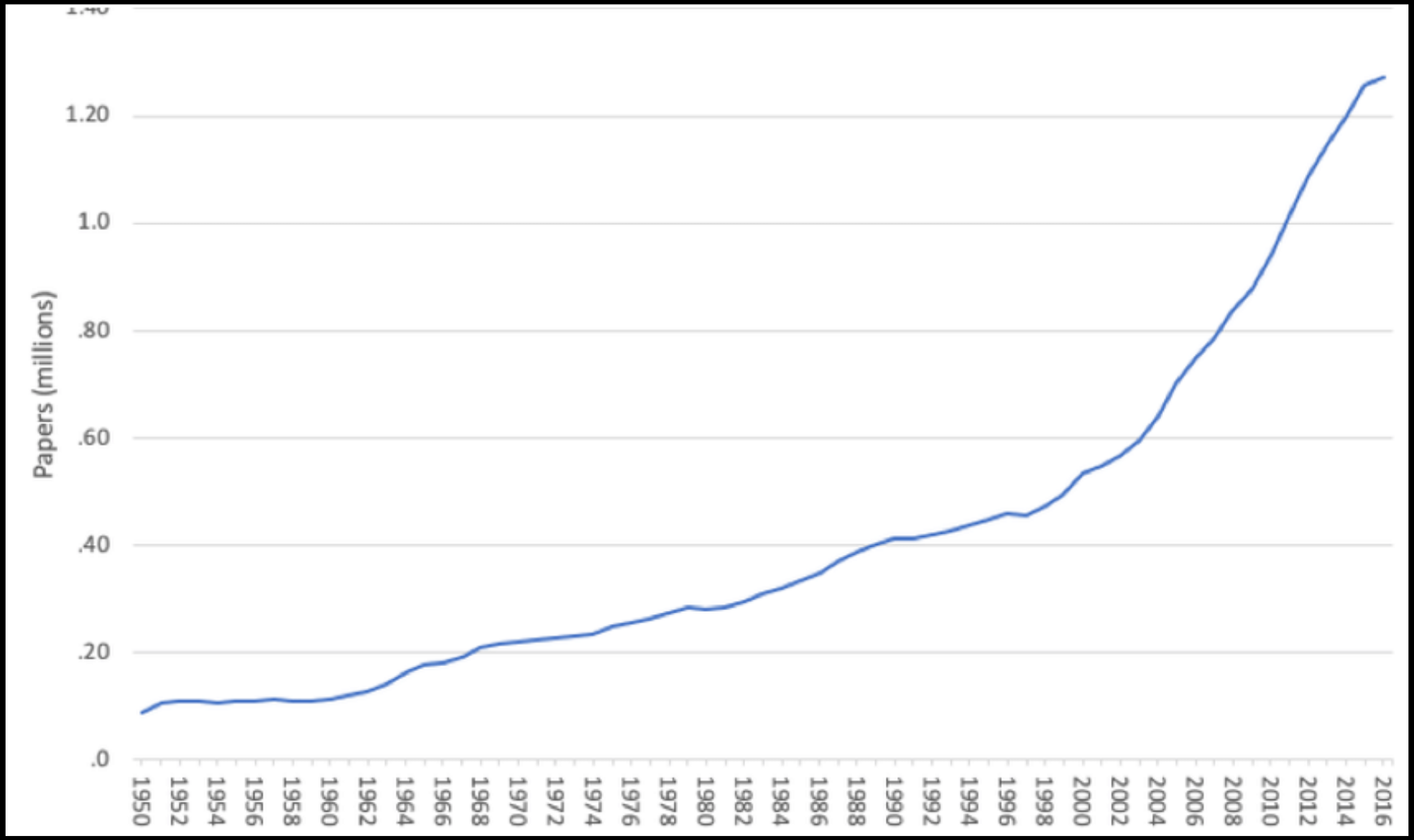


Robert Weinberg 2014 : “Coming full circle – from endless complexity to simplicity and back again”(*Cell*)

- “The data that we now generate overwhelm our abilities of interpretation, and the new discipline of ‘systems biology’ has produced few insights into cancer”

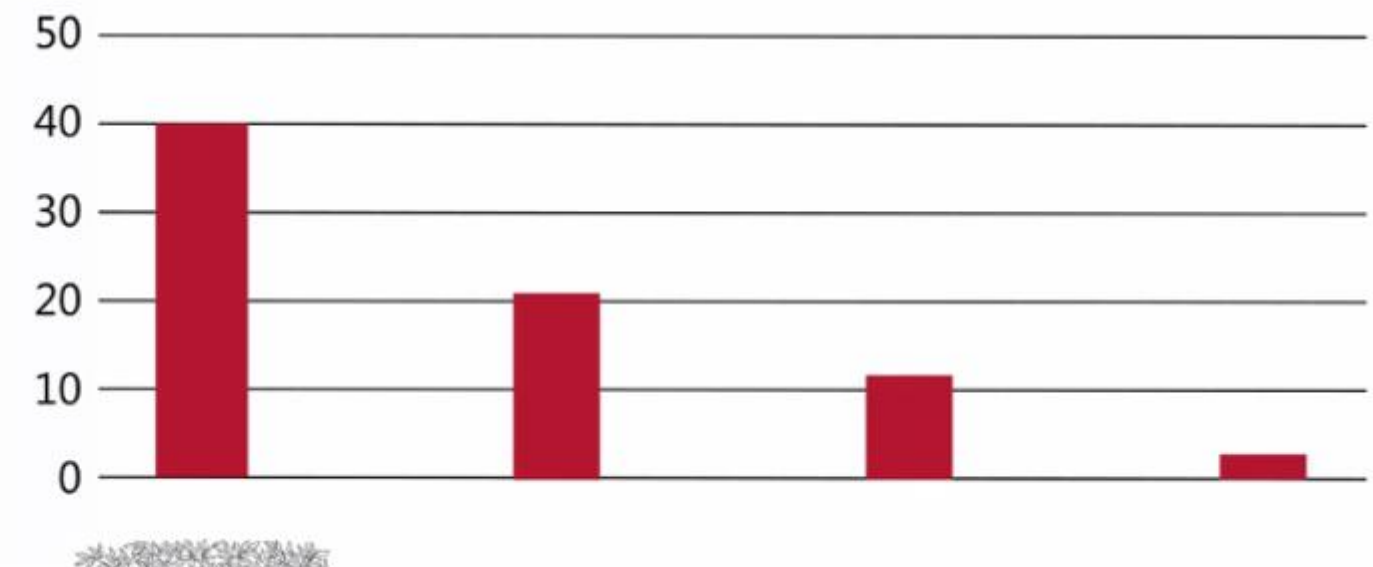
Cancer Moonshot 2016

- *Lancet Oncology* February 2021: “Numerous challenges have prevented the Moonshot from reaching its full potential”



Papers indexed by PubMed

CORPORATE PROFIT MARGINS



ELSEVIER

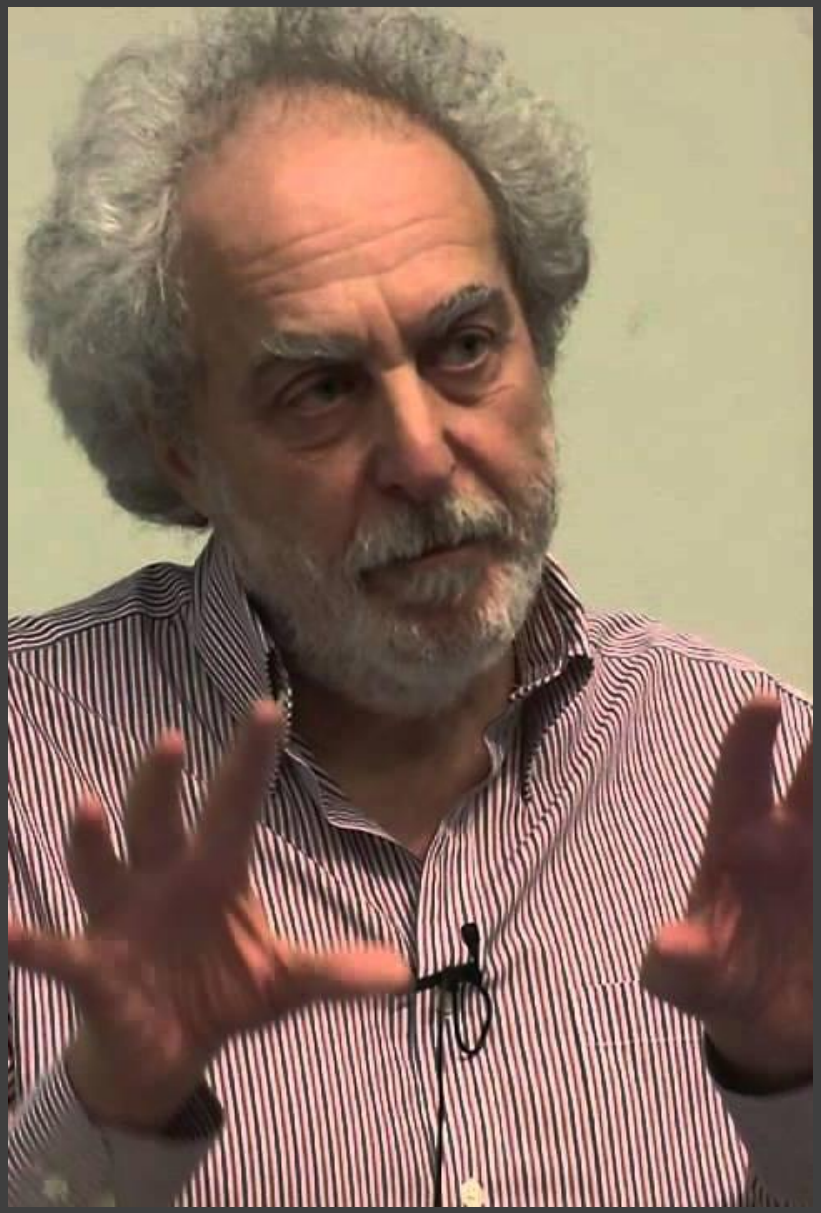
Bank of America

TOYOTA

Walmart

Robert Maxwell (1923-1991)

Predatory Journals



Douglas Altman: ‘The scandal of poor medical research’ *BMJ* 1994

- “Much poor research arises because doctors feel compelled for career reasons to carry out research that they are ill equipped to perform, and nobody stops them”

We need:

- Less research
- Better research
- Research done for the right reasons

John Ioannidis: “Why most research findings are false”
PLoS Medicine 2005

John Ioannidis: The Medical Misinformation Mess

- Much medical research is unreliable, offers no benefit to patients, or is not useful to decision makers
- Most doctors are unaware of this
- Even if they are, they lack the skills to evaluate evidence
- Patients struggle to access relevant evidence and skilled guidance

COMMENT

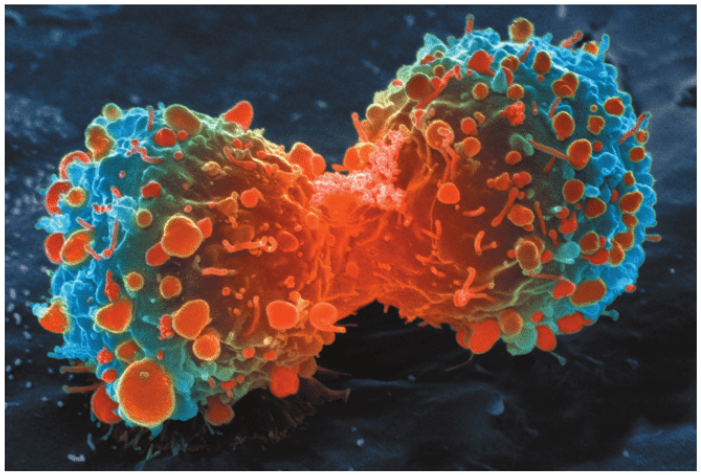
AVIAN INFLUENZA Shift expertise to track mutations where they emerge **p.534**

EARTH SYSTEMS Past climates give valuable clues to future warming **p.537**

HISTORY OF SCIENCE Descartes' lost letter tracked using Google **p.540**

OBITUARY Wylie Vale and an elusive stress hormone **p.542**

S. GSCHMEISSNER/SPL



Many landmark findings in preclinical oncology research are not reproducible, in part because of inadequate cell lines and animal models.

Raise standards for preclinical cancer research

C. Glenn Begley and **Lee M. Ellis** propose how methods, publications and incentives must change if patients are to benefit.

Efforts over the past decade to characterize the genetic alterations in human cancers have led to a better understanding of molecular drivers of this complex set of diseases. Although we in the cancer field hoped that this would lead to more effective drugs, historically, our ability to translate cancer research to clinical success has been remarkably low[1]. Sadly, clinical trials in oncology have the highest failure rate compared with other therapeutic areas. Given the high unmet need in oncology, it is understandable that barriers to clinical development may be lower than for other disease areas, and a larger number of drugs with suboptimal preclinical validation will enter oncology trials. However, this low success rate is not sustainable or acceptable, and investigators must reassess their approach to translating discovery research into greater clinical success and impact.

Many factors are responsible for the high failure rate, notwithstanding the inherently difficult nature of this disease. Certainly, the limitations of preclinical tools such as inadequate cancer-cell-line and mouse models[2] make it difficult for even ▶

Reproducibility and reliability of biomedical research: improving research practice

Symposium report, October 2015

The Academy of Medical Sciences · BBSRC · MRC · wellcome trust

Causes of the Replication Crisis

- Irrelevance
- Poor design
- Poor regulation
- Journals
- “Cultural”

ROYAL SOCIETY OPEN SCIENCE

rsos.royalsocietypublishing.org

Research

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Accepted: 17 August 2016

Subject Category:
Psychology and cognitive neuroscience

Subject Areas:
theoretical biology/computer modelling and simulation/statistics

Keywords:
metascience, cultural evolution, statistical power, replication, incentives, Campbell's Law

Author for correspondence:
Paul E. Smaldino
e-mail: paul.smaldino@gmail.com

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THE ROYAL SOCIETY PUBLISHING

The natural selection of bad science

Paul E. Smaldino[1] and Richard McElreath[2]

[1]Cognitive and Information Sciences, University of California, Merced, CA 95343, USA
[2]Department of Human Behavior, Ecology, and Culture, Max Planck Institute for Evolutionary Anthropology, Leipzig, Germany

PES, 0000-0002-7133-5620; RME, 0000-0002-0387-5377

Poor research design and data analysis encourage false-positive findings. Such poor methods persist despite perennial calls for improvement, suggesting that they result from something more than just misunderstanding. The persistence of poor methods results partly from incentives that favour them, leading to the natural selection of bad science. This dynamic requires no conscious strategizing—no deliberate cheating nor loafing—by scientists, only that publication is a principal factor for career advancement. Some normative methods of analysis have almost certainly been selected to further publication instead of discovery. In order to improve the culture of science, a shift must be made away from correcting misunderstandings and towards rewarding understanding. We support this argument with empirical evidence and computational modelling. We first present a 60-year meta-analysis of statistical power in the behavioural sciences and show that power has not improved despite repeated demonstrations of the necessity of increasing power. To demonstrate the logical consequences of structural incentives, we then present a dynamic model of scientific communities in which competing laboratories investigate novel or previously published hypotheses using culturally transmitted research methods. As in the real world, successful labs produce more 'progeny,' such that their methods are more often copied and their students are more likely to start labs of their own. Selection for high output leads to poorer methods and increasingly high false discovery rates. We additionally show that replication slows but does not stop the process of methodological deterioration. Improving the quality of research requires change at the institutional level.

- "Successful labs produce more 'progeny': their methods are more often copied, and their students are more likely to start labs of their own"

- “Something has gone fundamentally wrong with one of our greatest human creations”

ELSEVIER

Journal of Clinical Epidemiology ■ (2016) ■

Journal of Clinical Epidemiology

INVITED COMMENTARY

Evidence-based medicine has been hijacked: a report to David Sackett

John P.A. Ioannidis[a,b,c,d,*]

[a]*Department of Medicine, Stanford Prevention Research Center, Stanford, CA 94305, USA*
[b]*Department of Health Research and Policy, Stanford University School of Medicine, Stanford, CA 94305, USA*
[c]*Department of Statistics, Stanford University School of Humanities and Sciences, Stanford, CA 94305, USA*
[d]*Meta-Research Innovation Center at Stanford (METRICS), Stanford University, Stanford, CA 94305, USA*

Accepted 18 February 2016; Published online xxxx

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JOURNAL OF CLINICAL ONCOLOGY

COMMENTS AND CONTROVERSIES

Progression-Free Survival: Meaningful or Simply Measurable?

Christopher M. Booth and Elizabeth A. Eisenhauer, *NCIC Clinical Trials Group, Queen's University, Kingston, Ontario, Canada*

See accompanying articles on pages 1114 and 1122

Pembrolizumab for cervical cancer Prof Michael Barry 2018

- “85% of patients will not respond. The decision to extend access was made at a ministerial level. I would prefer to see drugs coming through the normal process”

NHS Cancer Drugs Fund

- Paid out £1.27 billion between 2010-2016
- Of the 47 drugs funded, 18 (38%) improved survival, average 3 months
- This money would have paid for every hospice in the UK for 18 months
- In 2015 the UK spent £115m on mental health research (£212m on cancer drugs fund)

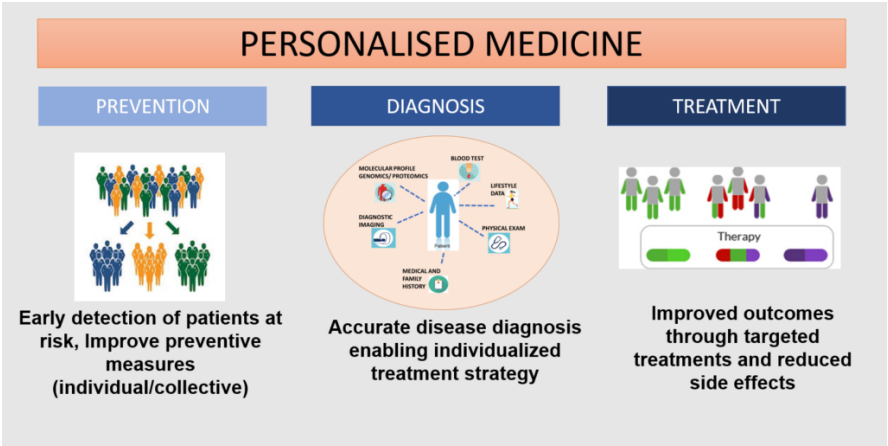
THE FIRST GLOBAL MAP OF MENTAL HEALTH RESEARCH FUNDING

International Alliance of
Mental Health Research Funders

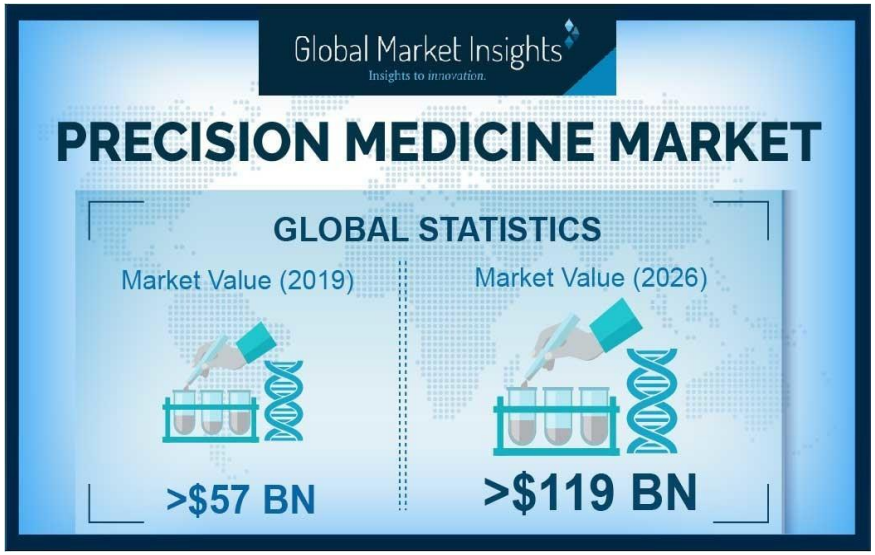
$3.7 billion spent annually on mental health research

- 7.4% of total medical research budget (cancer 19%)
- Most spent in high-income countries
- Majority for basic, rather than clinical/applied research
- Self –harm/suicide received one of the lowest levels of funding


Guiding principles and values
Robust foundation for genomics
Breaking down barriers
Compelling genomics research projects
The Forefront of Genomics


PERSONALISED MEDICINE
PREVENTION
DIAGNOSIS
TREATMENT
Early detection of patients at risk, Improve preventive measures (individual/collective)
Accurate disease diagnosis enabling individualized treatment strategy
Therapy
Improved outcomes through targeted treatments and reduced side effects


Digital revolution in healthcare
PHILIPS
Professional care
Home healthcare
Patient relationship management

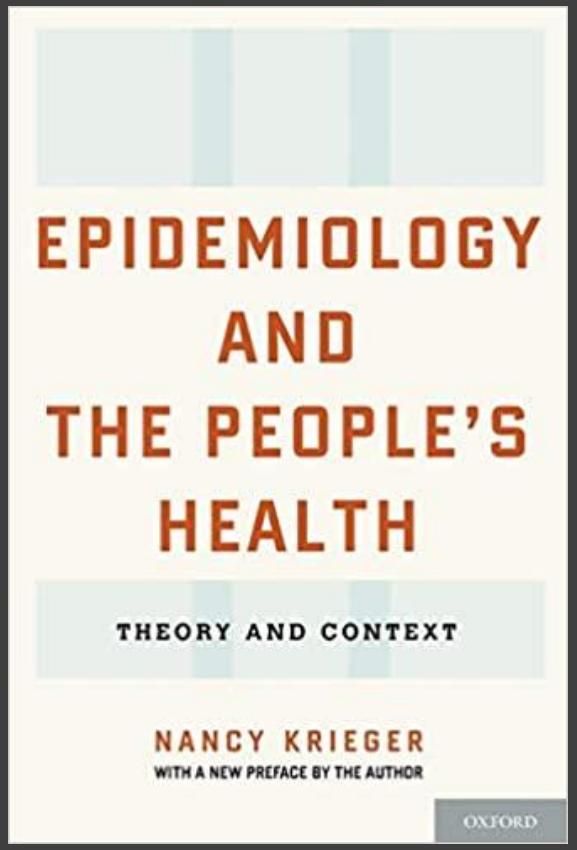

Global Market Insights
Insights to innovation.
PRECISION MEDICINE MARKET
GLOBAL STATISTICS
Market Value (2019)
Market Value (2026)
>$57 BN
>$119 BN

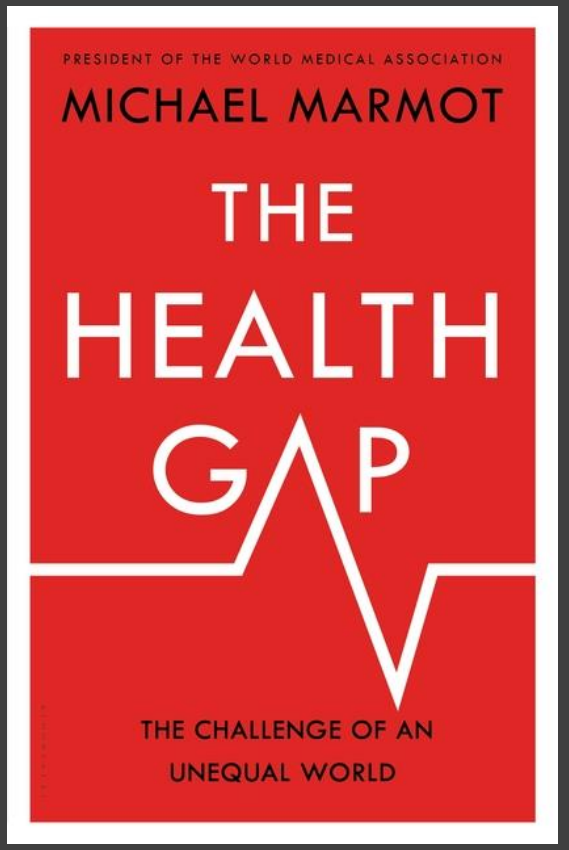
“Empowering”

“Connecting”

“Communities”

“Disrupting”


EPIDEMIOLOGY
AND
THE PEOPLE'S
HEALTH
THEORY AND CONTEXT
NANCY KRIEGER
WITH A NEW PREFACE BY THE AUTHOR
OXFORD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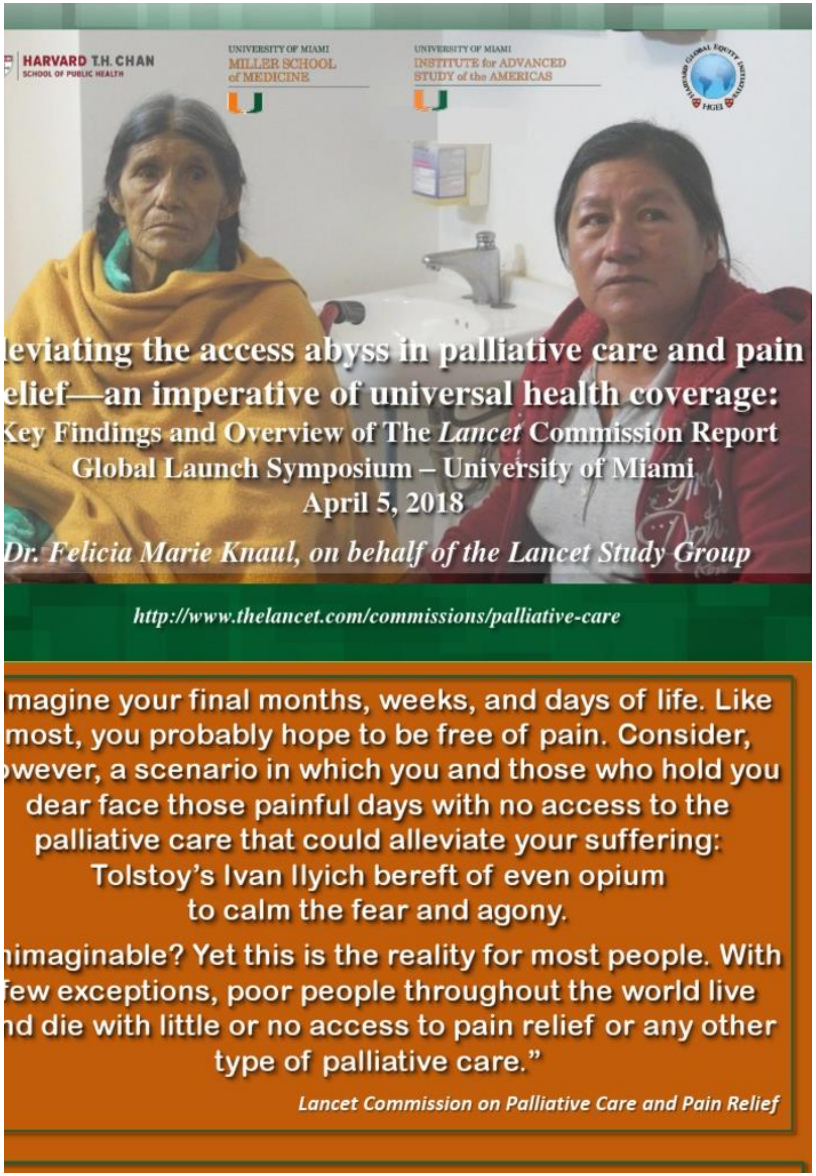
MICHAEL MARMOT
THE
HEALTH
GAP
THE CHALLENGE OF AN
UNEQUAL WORLD

Rudolf Virchow



Alleviating the access abyss in palliative care and pain relief—an imperative of universal health coverage: the *Lancet* Commission report

Felicia Marie Knaul, Paul E Farmer, Eric L Krakauer*, Liliana De Lima, Afsan Bhadelia, Xiaoxiao Jiang Kwete, Héctor Arreola-Ornelas, Octavio Gómez-Dantés, Natalia M Rodriguez, George A O Alleyne, Stephen R Connor, David J Hunter, Diederik Lohman, Lukas Radbruch, María del Rocío Sáenz Madrigal, Rifat Atun†, Kathleen M Foley†, Julio Frenk†, Dean T Jamison†, M R Rajagopal†, on behalf of the Lancet Commission on Palliative Care and Pain Relief Study Group‡*

Executive Summary

> In agonising, crippling pain from lung cancer, Mr S came to the palliative care service in Calicut, Kerala, from an adjoining district a couple of hours away by bus. His body language revealed the depth of the suffering.
>
> We put Mr S on morphine, among other things. A couple of hours later, he surveyed himself with disbelief. He had neither hoped nor conceived of the possibility that this kind of relief was possible.
>
> Mr S returned the next month. Yet, common tragedy befell patient and caregivers in the form of a stock-out of morphine.
>
> Mr S told us with outward calm, "I shall come again next Wednesday. I will bring a piece of rope with me. If the tablets are still not here, I am going to hang myself from that tree". He pointed to the window. I believed he meant what he said.
>
> Stock-outs are no longer a problem for palliative care in Kerala, but throughout most of the rest of India, and indeed our world, we find near total lack of access to morphine to alleviate pain and suffering.
>
> *Dr M R Rajagopal, personal testimony*

Poor people in all parts of the world live and die with little or no palliative care or pain relief. Staring into this access abyss, one sees the depth of extreme suffering in the cruel face of poverty and inequity.

The abyss is broad and deep, mirroring relative and absolute health and social deprivation. Of the 298·5 metric tonnes of morphine-equivalent opioids distributed in the world per year (average distribution in 2010–13), only 0·1 metric tonne is distributed to low-income countries.[1] The amount of morphine-equivalent opioids distributed in Haiti is 5 mg per patient in need of palliative care per year, which means that more than 99% of need goes unmet. By contrast, the annual distribution of morphine is 55 000 mg per patient in need of palliative care in the USA and more than 68 000 mg per patient in need of palliative care in Canada—much more than is needed to meet all palliative care and other medical needs for opioids on the basis of estimates of the Commission (figure 1).

The fact that access to such an inexpensive, essential, and effective intervention is denied to most patients in low-income and middle-income countries (LMICs) and in particular to poor people—including many poor or otherwise vulnerable people in high-income countries—is a medical, public health, and moral failing and a travesty of justice. Unlike so many other priorities in global health, affordability is not the greatest barrier to access, and equity-enhancing, efficiency-oriented, cost-saving interventions exist.

The global health community has the responsibility and the opportunity to close the access abyss in the relief of pain and other types of suffering at end-of-life and throughout the life course, caused by life-limiting and life-threatening health conditions. However, unlike many other essential health interventions already identified as priorities, the need for palliative care and pain relief has been largely ignored, even for the most vulnerable populations, including children with terminal illnesses and those living through humanitarian crises, and even in the Sustainable Development Goals (SDGs).[2] Yet palliative care and pain relief are essential elements of universal health coverage (UHC).

Several barriers explain this neglect: the focus of existing measures of health outcomes—major drivers of policy and investment—on extending life and productivity with little weight given to health interventions that alleviate pain or increase dignity at the end of life;[3] opiophobia, which refers to prejudice and misinformation about the appropriate medical use of opioids;[4–6] the focus, in medicine, on cure and extending life and a concomitant neglect of caregiving and quality of life near death;[7,8] limitations on patient advocacy due to the seriousness of illnesses; the focus on preventing non-medical use of internationally controlled substances without balancing the human right to access medicines to relieve pain;[9–12] and the global neglect of non-communicable diseases, which account for much of the need for palliative care.[13]

Global health is devoid of the investments, interventions, and indicators that are essential to ensure universal access to safe, secure, and dignified care at the end of life or to the palliation of pain and suffering. With this Report, we aim to remedy these limitations by: (1) quantifying the heavy burden of serious health-related suffering (SHS) associated with a need for palliative care and pain relief (section 1); (2) identifying and costing an Essential Package Of Palliative Care And Pain Relief Health Services (the Essential Package) that would alleviate this burden (section 2); (3) measuring the unmet need for one of the most essential components of the

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*Equal contributors

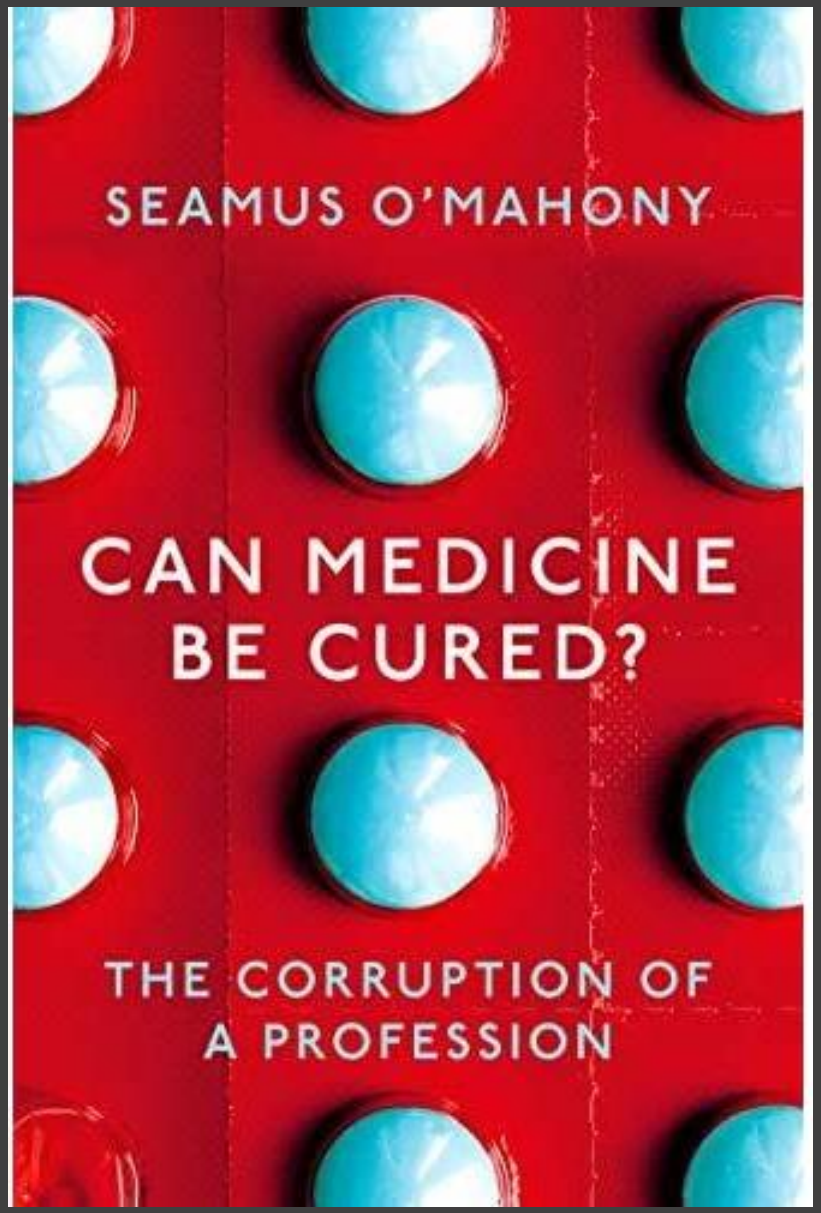
†Senior authors

‡Study group members are listed at end of this Report

Department of Public Health Sciences, Leonard M. Miller School of Medicine (Prof F M Knaul PhD, Prof J Frenk MD), **Institute for Advanced Study of the Americas** (Prof F M Knaul, A Bhadelia PhD, X Jiang Kwete MD, H Arreola-Ornelas MSc, N M Rodriguez PhD), **Sylvester Comprehensive Cancer Center** (Prof F M Knaul), **and School of Business Administration** (Prof J Frenk), **University of Miami, Coral Gables, FL, USA; Tómatelo a Pecho, A.C., Mexico City, Mexico** (Prof F M Knaul, H Arreola-Ornelas); **Fundación Mexicana para la Salud, A.C., Mexico City, Mexico** (Prof F M Knaul, H Arreola-Ornelas); **Harvard Medical School, Boston, MA, USA** (Prof P E Farmer MD, E L Krakauer MD, Prof R Atun FRCP); **Massachusetts General Hospital, Boston, MA, USA** (E L Krakauer); **World Health Organization, Geneva, Switzerland** (E L Krakauer); **International Association for Hospice and Palliative Care, Houston, TX, USA** (L De Lima MHA, Prof L Radbruch MD); **Department of Global Health and Population** (A Bhadelia, X Jiang Kwete, Prof R Atun), **Department of Health Policy and Management** (Prof R Atun), **Department of Epidemiology** (Prof D J Hunter MBBS) **and**

Richard Horton

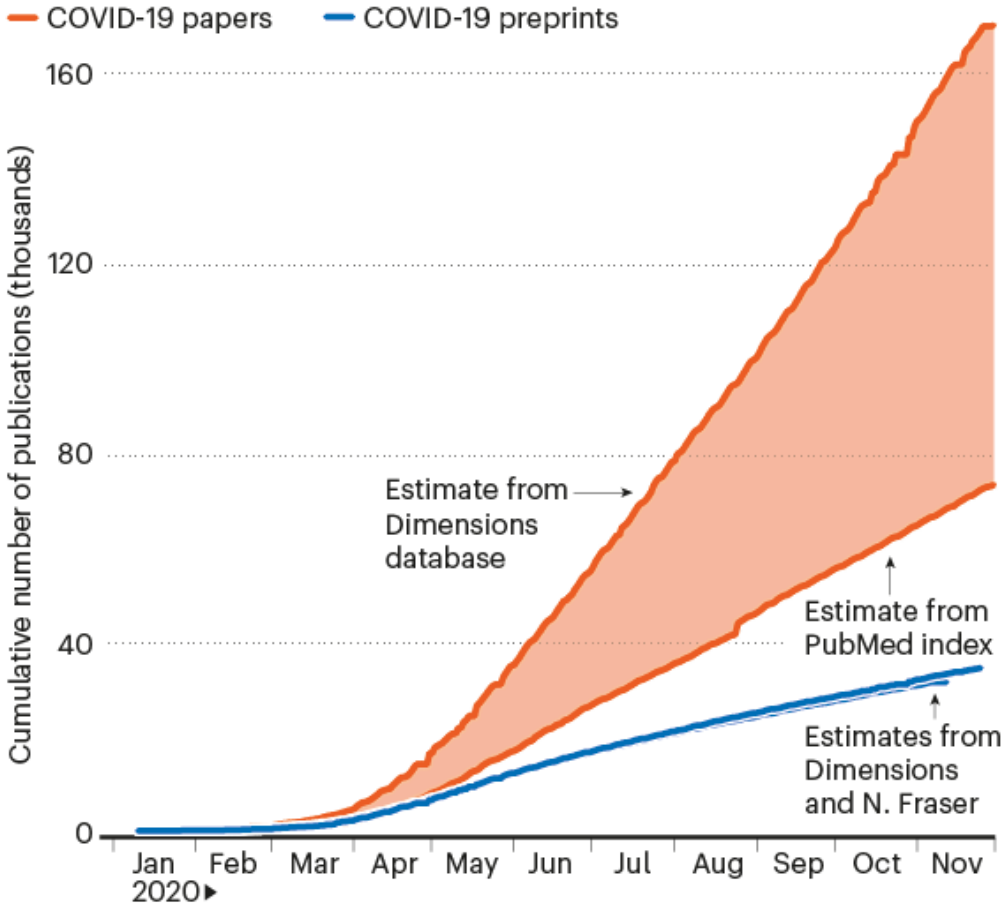
- “Medicine regards the alleviation of suffering as someone else’s problem. Palliative care is too often seen as failure. The hubris of modern medicine is that it cannot face up to failure. The deification of biomedicine has created an anti-humanist and quasi-theocratic science of health”



- "We need a reformed medicine, but we will have to be forced into it. What would force us? Most likely economic collapse and a global pandemic"

CORONAVIRUS CASCADE

One estimate suggests that more than 200,000 coronavirus-related journal articles and preprints had been published by early December.



*Estimates differ depending on search terms, database coverage, and definitions of what counts as a scientific article; some preprints were posted on multiple sites online.

Covidisation of research

- 32% of researchers shifted their focus during the pandemic
- Flawed research
- “Epistemic trespassing”
- Widening of racial and gender inequalities within bioscience

Accelerated Science

- Huge increase in “pre-prints”
- SARS-CoV-2 genome decoded 10 days after first cases reported
- 54 vaccines tested, 12 in Phase 3 trials

RECOVERY

Randomised Evaluation of COVID-19 Therapy

HAVE YOU BEEN ADMITTED TO HOSPITAL WITH SUSPECTED OR CONFIRMED COVID-19?

Are you interested in research?

We still have so much to learn about effective treatments for COVID-19.

Oxford University is running the **RECOVERY** Trial which will enable reliable assessment of the effects of multiple different treatments on major outcomes among people with suspected or confirmed COVID-19.

Some of the treatments will be drugs used for other conditions, other new drugs may become available during the trial.

All patients participating in the trial will receive usual standard of care.

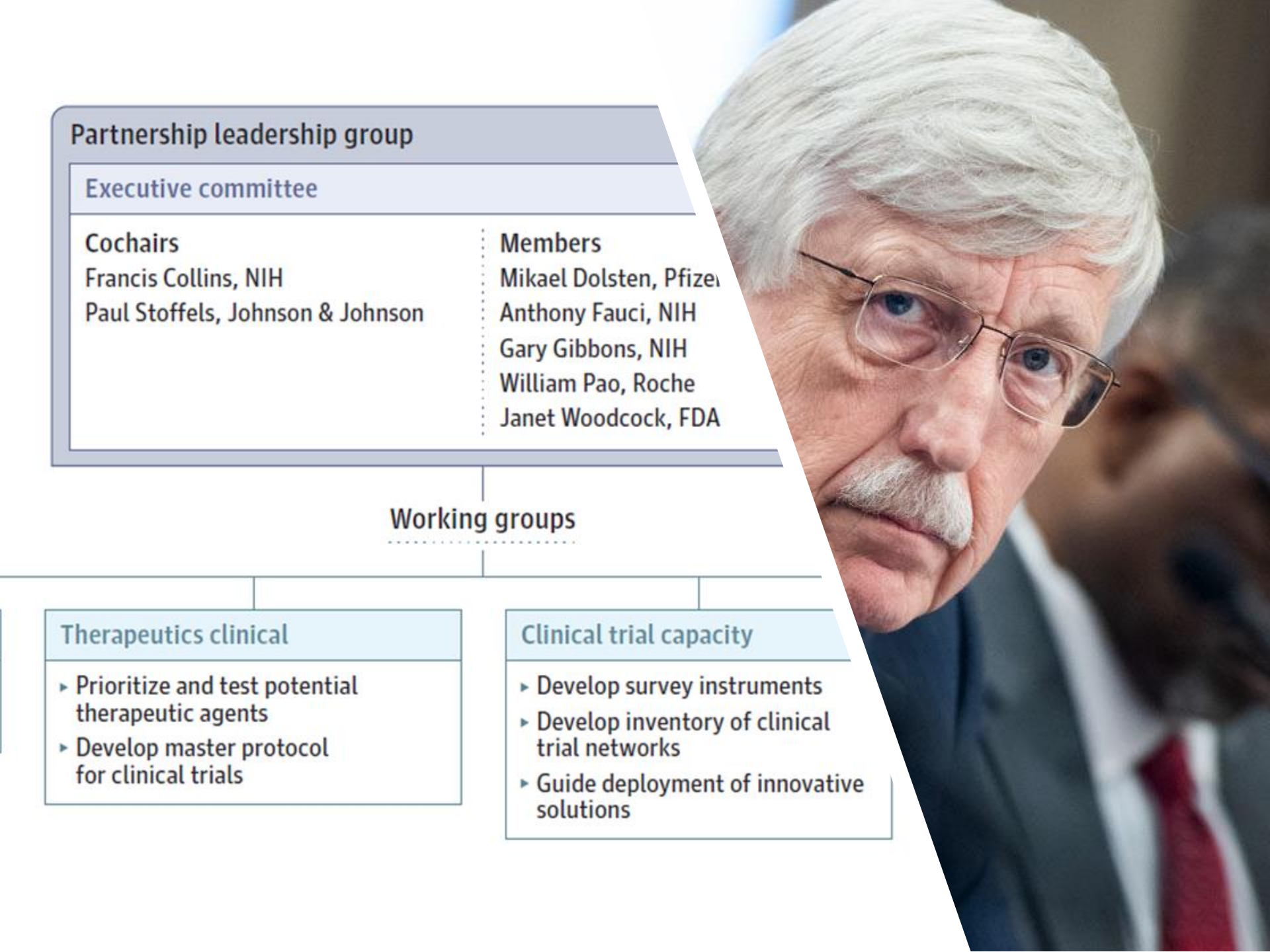
We need your help

If you are interested in joining the **RECOVERY** Trial, please ask your medical team for information about the trial.

UNIVERSITY OF OXFORD

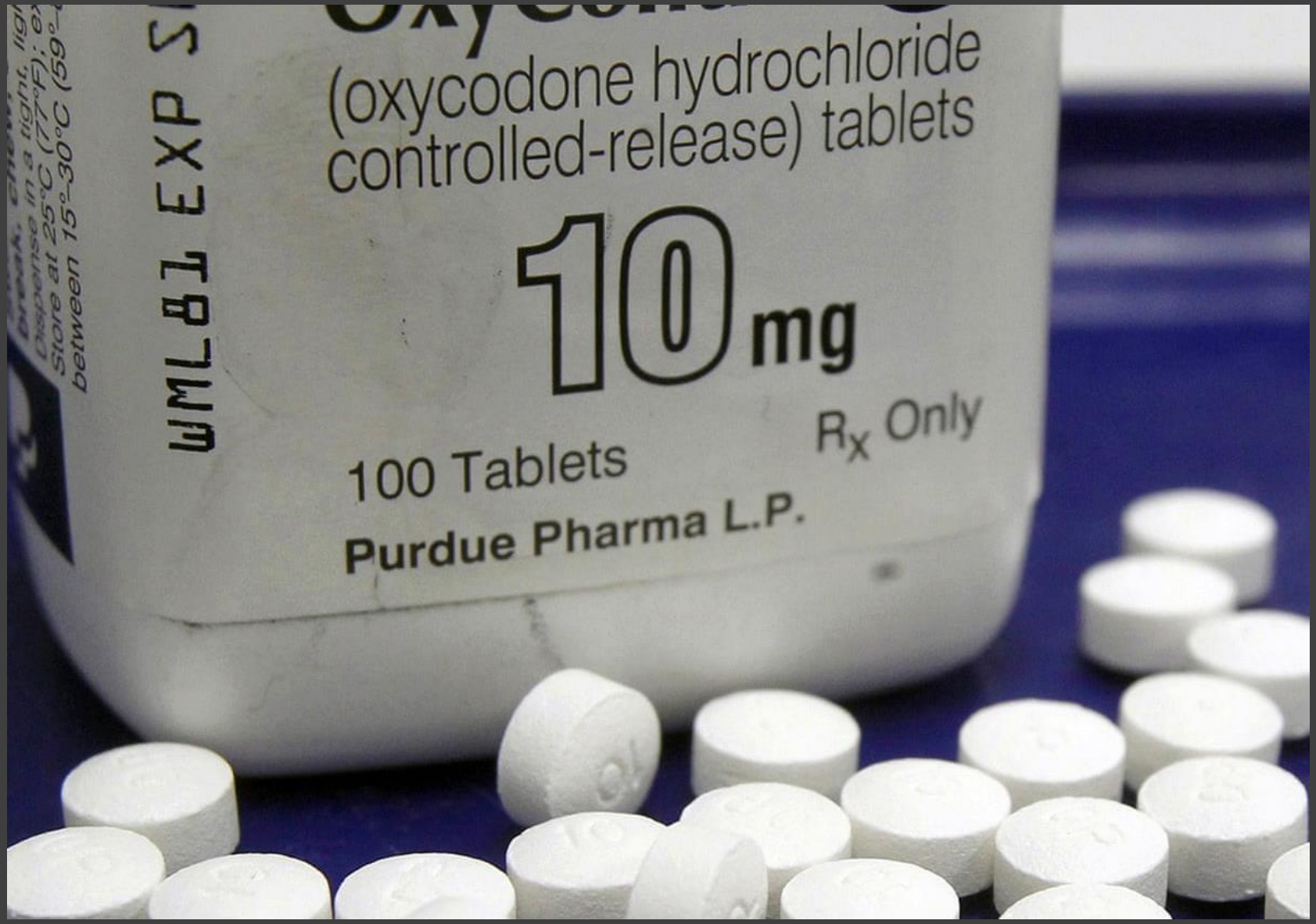
Accelerating COVID-19 Therapeutic Interventions and Vaccines (ACTIV) is a public-private partnership to develop a coordinated research strategy for prioritizing and speeding **development of the most promising treatments and vaccines.**

NIH National Institutes of Health
Turning Discovery Into Health


Partnership leadership group
Executive committee
Cochairs
Francis Collins, NIH
Paul Stoffels, Johnson & Johnson
Members
Mikael Dolsten, Pfize
Anthony Fauci, NIH
Gary Gibbons, NIH
William Pao, Roche
Janet Woodcock, FDA
Working groups
Therapeutics clinical
Prioritize and test potential therapeutic agents
Develop master protocol for clinical trials
Clinical trial capacity
Develop survey instruments
Develop inventory of clinical trial networks
Guide deployment of innovative solutions

Thomas Francis Director of the Commission on Influenza 1941-43

- “Not a triumph of scientific genius, but rather of organizational purpose and efficiency” (Kendall Hoyt, *Long Shot*)


(oxycodone hydrochloride
controlled-release) tablets
10 mg
Rx Only
100 Tablets
Purdue Pharma L.P.

David A. Ricks CEO Eli Lilly

- “a once in a lifetime opportunity to reset the reputation of the industry”

PHARMA'S MOST AND LEAST REPUTABLE COMPANIES

RI's 2018 RepTrak ranking is based on a survey that asks respondents to describe their feelings about 22 different drugmakers.

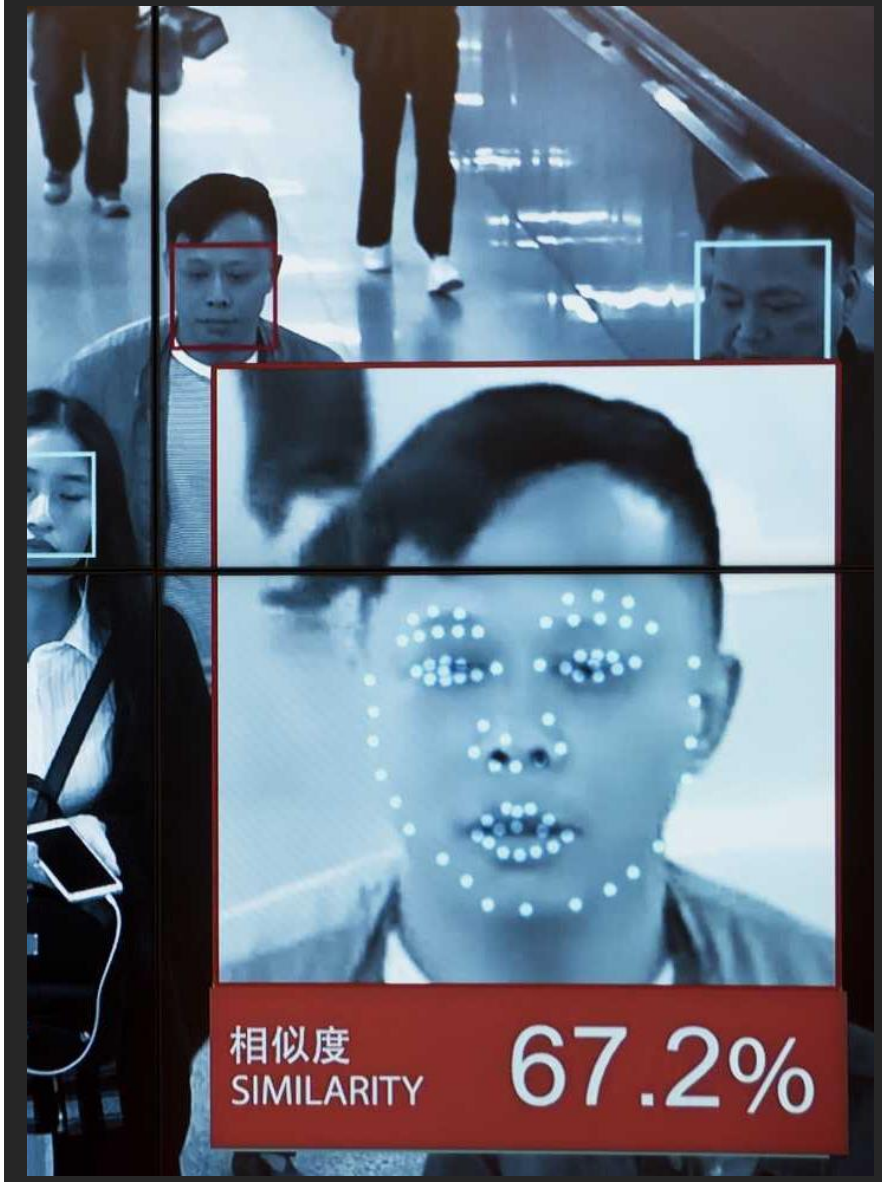
AT THE TOP	AT THE BOTTOM
1. Sanofi	18. Takeda
2. Genentech	19. Mylan
3. Celgene	20. Merck
4. AbbVie	21. GlaxoSmithKline
5. Biogen	22. Pfizer

- “Pharma is cleaning up its act much faster than academia. Problems in science are about bad systems and incentives than bad people or bad organisations”

Eunice Kennedy Shriver

NICHD

National Institute of Child Health
& Human Development


相似度
SIMILARITY
67.2%


武汉微邻里
14:38
家庭体温自查上报
参与全民抗疫行动
去上报
报事
办事
我的社区
我的


Thank


NDING
J01

Margaret McCartney ‘Medicine: before COVID-19, and after’ (*Lancet April 2020)*

- “A resurgence in trust in professionalism”
- “Videoconsultation up and running in a week”
- “An opportunity to banish systemic overtreatment”
- “Permission to disregard low-value bureaucratic work”


Who is the victim?
50.000 healthcare professionals were victims of violence in the past four years. Violence against doctors also hurts every patient who needs them.
STOP VIOLENCE AGAINST DOCTORS
stopviolence.com


No more TOLERANCE TO VIOLENCE
SAVE THE SAVIOUR!!!
ASSAULTING A DOCTOR IS A CRIME
IF WE BLEED. YOU BLEED TOO
SAVE US. SAVE YOURSELF!
THE COLOR OF OUR APRON IS WHITE DONT MAKE IT RED
WE ARE HERE TO SERVE
GMCH stands
A JOURNEY FROM DON'T

The Fauci Effect

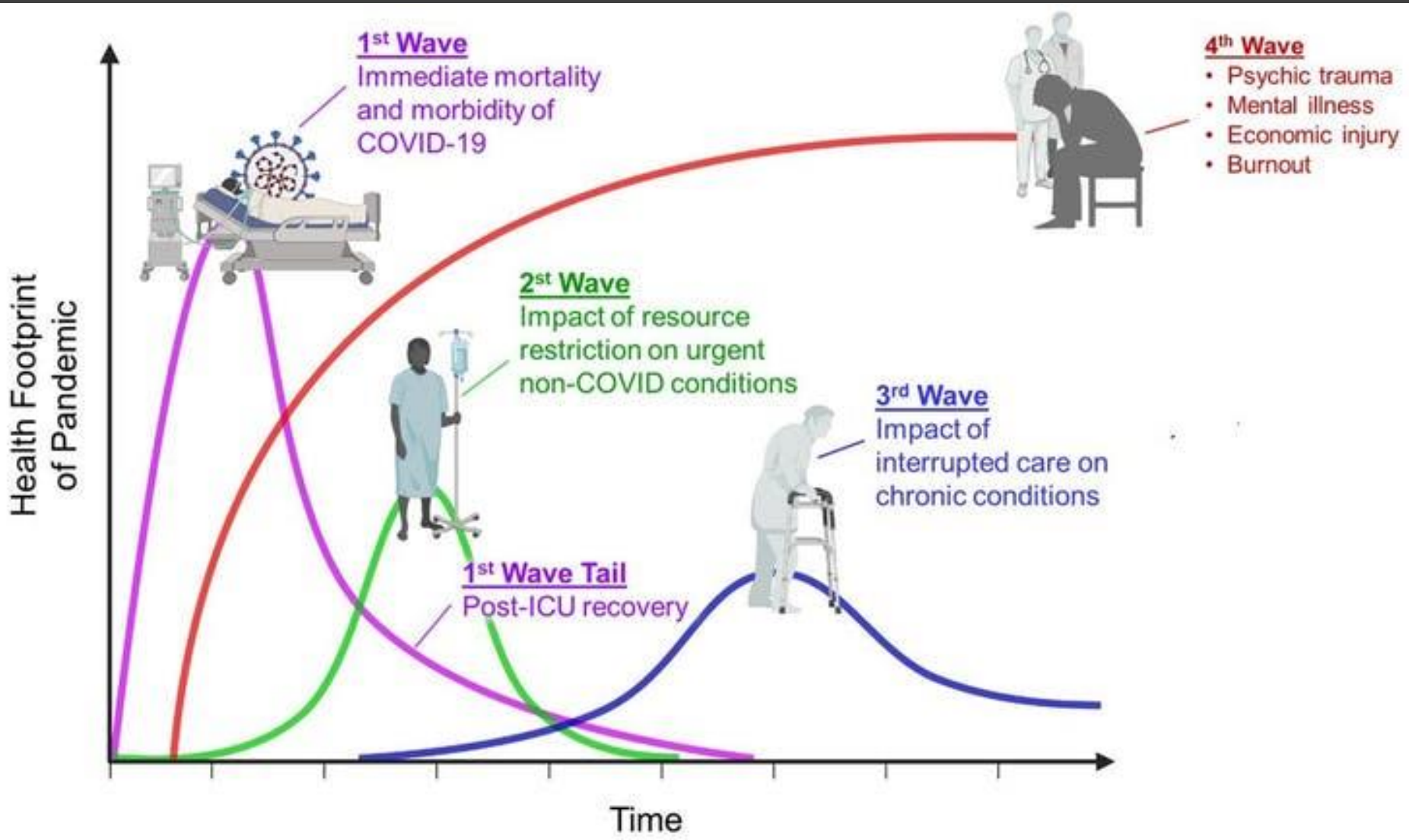
The Covid-19 pandemic has:

- Exacerbated research overproduction and the misinformation mess
- Re-enforced the bio-molecular paradigm of medical research
- Improved public image of Pharma
- Exhausted healthcare workers
- Worsened inequality

“How Science Beat the Virus (and what it lost in the process)” Ed Yong,*The Atlantic*

- “At its best, science is a self-correcting march toward greater knowledge for the betterment of humanity. At its worst, it is a self-interested pursuit of greater prestige at the cost of truth and rigor.”

- “It could be the catalyst that reunifies the social and biological sides of medicine.”


1st Wave
Immediate mortality and morbidity of COVID-19
4th Wave
• Psychic trauma
• Mental illness
• Economic injury
• Burnout
2st Wave
Impact of resource restriction on urgent non-COVID conditions
3rd Wave
Impact of interrupted care on chronic conditions
1st Wave Tail
Post-ICU recovery
Health Footprint of Pandemic
Time

What is medicine for?

Major Greenwood (1880-1949)

- “to make the conditions of human life everywhere more bearable”