VIRCHOW AT 200 & LOWN AT 100: PHYSICIANS AS ACTIVISTS

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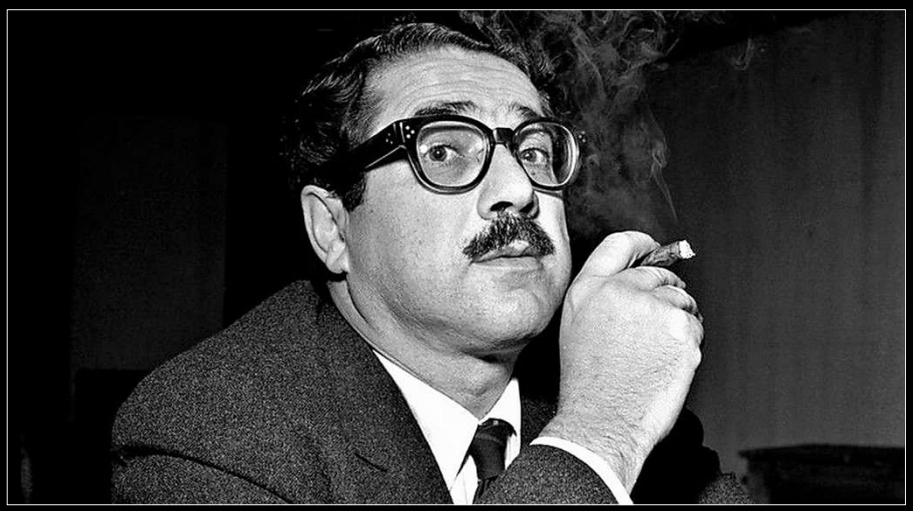
*Disclosure of relevant financial relationship in the past 12 months:

I have no financial relationships with commercial entities producing health-care related products and/or services.



Virchow at 200 and Lown at 100 — Physicians as Activists

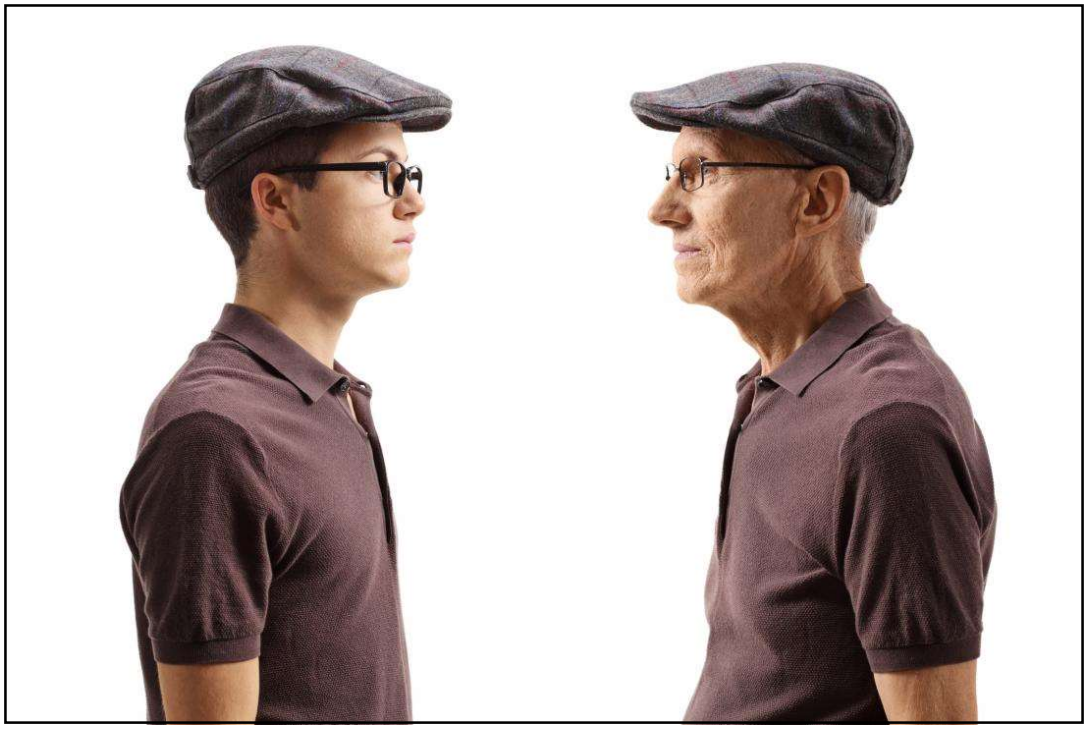
Salvatore Mangione, M.D., and Mark L. Tykocinski, M.D.

> The ultimate measure of a man is not where he stands in moments of comfort and convenience, but where he stands at times of challenge and controversy.
>
> — Martin Luther King, Jr., 1963

The Covid-19 pandemic has vividly reminded us not only that competent governments and good public health can save lives, but also that social factors and racial inequities affect disease. The virus has also made it clear that the problems we face today are global and, therefore, that only global solutions will be effective.

Moreover, the pandemic has forced many people to reconsider what medicine is all about. But debate over what doctoring is — and what it is not — is nothing new. This year marks significant anniversaries of the births of two physicians who took a broad view of the role of medicine.

German physician Rudolf Virchow, born 200 years ago this October, was so certain that disease was a reflection of societal failures that he claimed, "medicine is a social science, and politics nothing but medicine at a larger scale."[1] Virchow saw physicians as "natural attorneys of the poor" and viewed social problems as their responsibility,[2] and he was willing to pay a price for his advocacy. When, during the März-revolution of 1848, he took his medical students to the barricades, the government fired him from the Charité of Berlin. Yet Virchow was undaunted. He rebuilt his reputation as the leader of European pathology, then won a seat in the Reichstag. During a

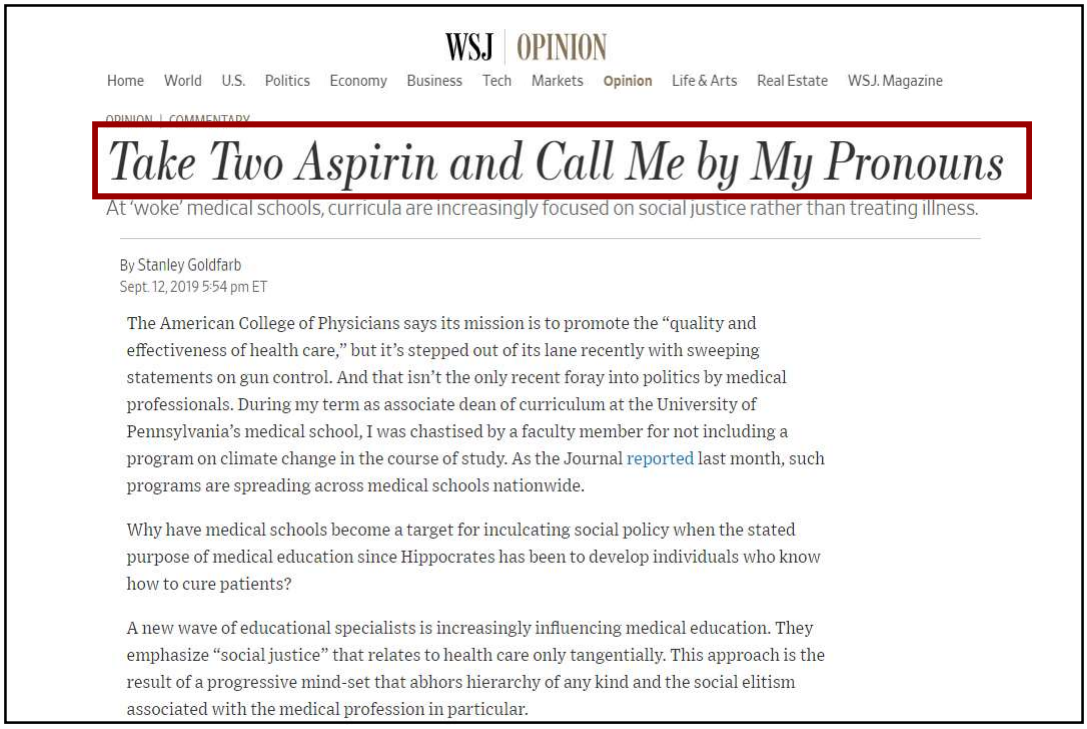


FALL 2019

"...I'm currently on a pediatric rotation at a clinic in Wilmington, DE. There is a wall where families can pin photos of their young children lost to gun violence. We speak at length on a day-to-day basis on the circumstances these patients were born into. We often ask ourselves if what we do makes much of an impact. For teenagers, we'll check A1C and run routine urine screenings for gonorrhea and chlamydia, but we do wonder if that really matters when the 15-year-old tells us he drinks a pint of vodka every Friday because he doesn't know how much longer he'll live and wants to enjoy his time while he's still here.

There's no medical fix for that, no treatment we can look for on *UpToDate* or in a pediatric textbook. Oftentimes, we accept the patient's decision and make them aware that they can make those choices while doing the most to keep themselves and those around them safe.

I hope to continue amplifying the voices of those who often feel drowned out while holding elected officials accountable for the change they claim to agree with…"



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Take Two Aspirin and Call Me by My Pronouns

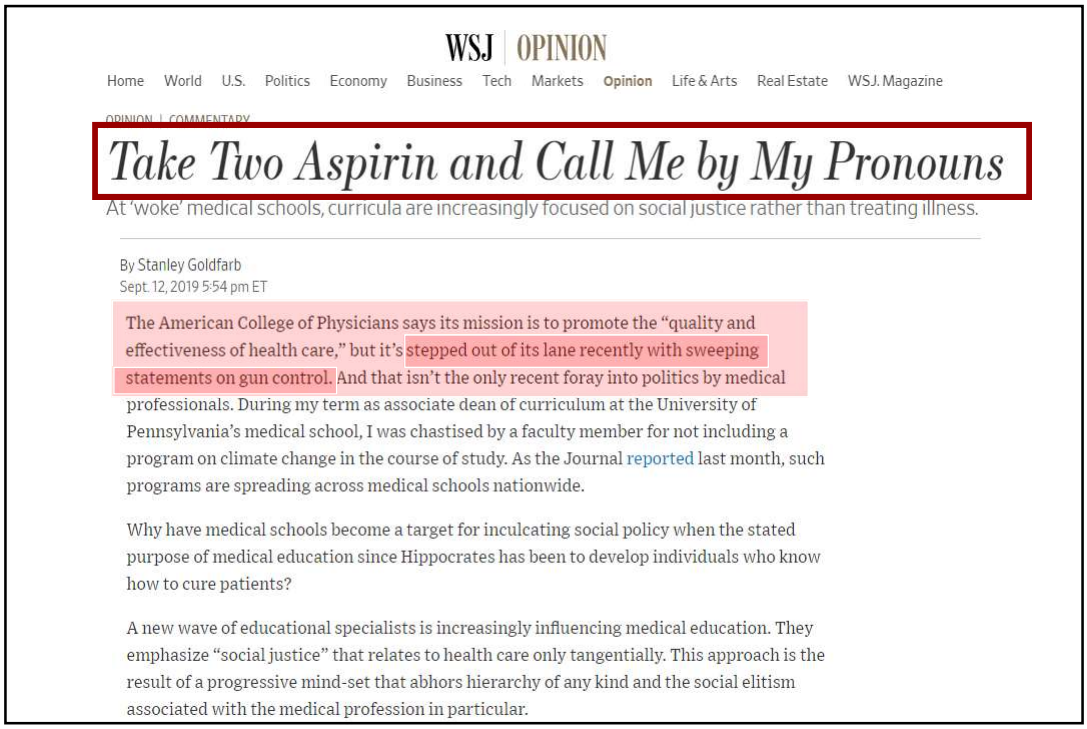
At 'woke' medical schools, curricula are increasingly focused on social justice rather than treating illness.

By Stanley Goldfarb
Sept. 12, 2019 5:54 pm ET

The American College of Physicians says its mission is to promote the "quality and effectiveness of health care," but it's stepped out of its lane recently with sweeping statements on gun control. And that isn't the only recent foray into politics by medical professionals. During my term as associate dean of curriculum at the University of Pennsylvania's medical school, I was chastised by a faculty member for not including a program on climate change in the course of study. As the Journal reported last month, such programs are spreading across medical schools nationwide.

Why have medical schools become a target for inculcating social policy when the stated purpose of medical education since Hippocrates has been to develop individuals who know how to cure patients?

A new wave of educational specialists is increasingly influencing medical education. They emphasize "social justice" that relates to health care only tangentially. This approach is the result of a progressive mind-set that abhors hierarchy of any kind and the social elitism associated with the medical profession in particular.



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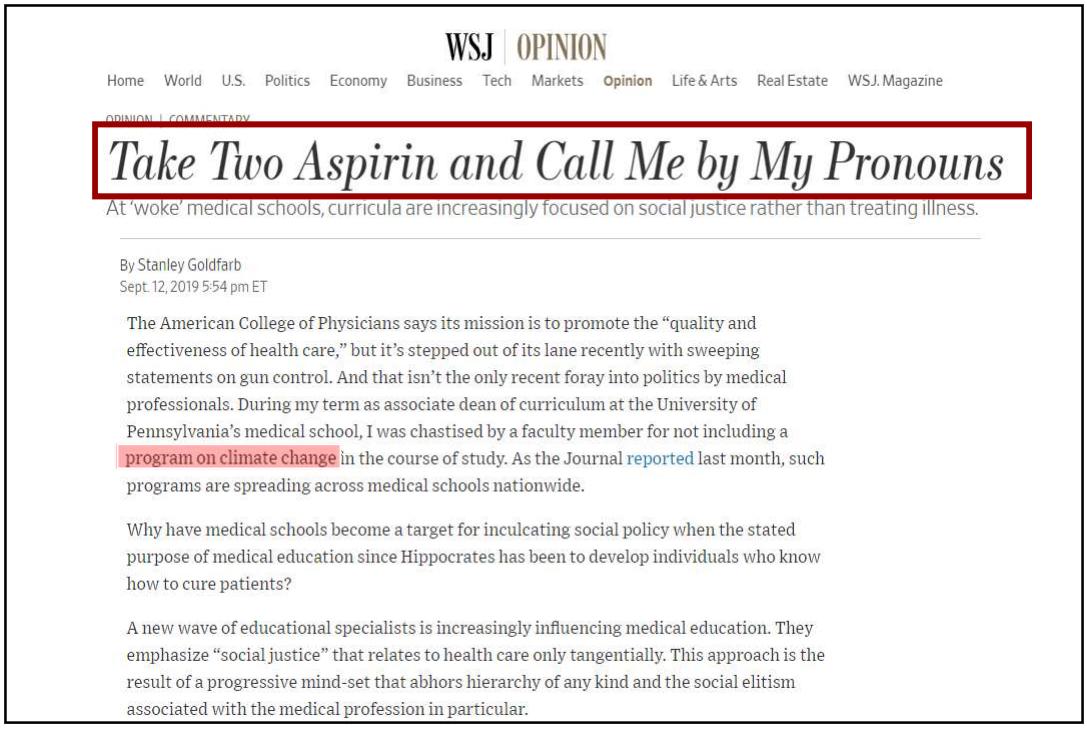

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"Teaching these issues comes at the expense of rigorous training in medical science.

The prospect of this 'new,' politicized medical education should worry all Americans..."

POSITION PAPER

Annals of Internal Medicine

Reducing Firearm Injuries and Deaths in the United States: A Position Paper From the American College of Physicians

College of Physicians*

For more than 20 years, the American College of Physicians (ACP) has advocated for the need to address firearm-related injuries and deaths in the United States. Yet, firearm violence continues to be a public health crisis that requires the nation's immediate attention. The policy recommendations in this paper build on, strengthen, and expand current ACP policies approved by the Board of Regents in April 2014, based on analysis of approaches that the evidence suggests will be effective in reducing deaths and injuries from firearm-related violence.

Ann Intern Med. 2018;169:704-707. doi:10.7326/M18-1530 Annals.org
For author affiliations, see end of text.
This article was published at Annals.org on 30 October 2018.

For more than 20 years, the American College of Physicians (ACP) has advocated for the need to address firearm-related injuries and deaths in the United States. In 2014, the ACP published a comprehensive set of recommendations (1). In 2015, it joined the American College of Surgeons, American College of Obstetricians and Gynecologists, American Public Health Association, American Psychiatric Association, American Academy of Family Physicians, American Academy of Pediatrics, American College of Emergency Physicians, and American Bar Association in a call to action to address gun violence as a public health threat, which was subsequently endorsed by 52 organizations that included clinician organizations, consumer organizations, organizations representing families of gun violence victims, research organizations, public health organizations, and other health advocacy organizations (2). Yet, firearm violence remains a problem—firearm-related mortality rates in the United States are still the highest among high-income countries (3).

Firearm violence continues to be a public health crisis in the United States that requires the nation's immediate attention. The ACP is concerned about not only the alarming number of mass shootings in the United States but also the daily toll of firearm violence in neighborhoods, homes, workplaces, and public and private places across the country. The policy recommendations in this paper build on, strengthen, and expand current ACP policies approved by the Board of Regents in April 2014 (1) and are based on an analysis of approaches that the evidence suggests will be effective in reducing deaths and injuries from firearm-related violence. The ACP has long advocated for policies to reduce the rate of firearm injuries and deaths in the United States and once again calls on its members, nonmember physicians, nonphysician clinicians, policymakers, and the public to take action on this important issue.

See also:
Related article 734
Editorial comments 723, 725

Methods

This policy paper was drafted by the Health and Public Policy Committee of the ACP, which is charged with addressing issues that affect the health care of the U.S. public and the practice of internal medicine and its subspecialties. The paper builds on, strengthens, and expands current ACP policies approved by the Board of Regents in April 2014 (1). The authors determined that many positions were still relevant and did not revisit those positions or the evidence supporting them. They identified gaps in policy and existing positions that needed to be strengthened, clarified, or expanded on the basis of emerging research and new initiatives on which the ACP did not have clear policy. The authors focused solely on evidence related to the new or modified recommendations and reviewed available studies, reports, and surveys related to firearm violence from PubMed, Google Scholar, relevant news articles, policy documents, Web sites, and other sources. Recommendations were based on reviewed literature and input from the ACP's Board of Governors, Board of Regents, Council of Early Career Physicians, Council of Resident/Fellow Members, Council of Student Members, and Council of Subspecialty Societies. The policy paper and related recommendations were reviewed and approved by the ACP Board of Regents on 21 July

* This paper, written by Renee Butkus, BA; Robert Doherty, BA; and Sue S. Bornstein, MD, was developed for the Health and Public Policy Committee of the American College of Physicians. Individuals who served on the Health and Public Policy Committee at the time of its approval were Sue S. Bornstein, MD (Chair); Jan K. Carney, MD (Vice Chair); Tom Cooney, MD; Lee Engel, MD; Heather E. Gardner, MD; Tracey L. Hemy, MD; Joshua D. Lenchus, DO; Bridget M. McCandless, MD; Jacob Quinton, MD, MPH; Molly Southworth, MD, MPH; Fatima Syed, MD; Alexandra Valdright, BA; and Mary Anderson Wallace, MD. Approved by the ACP Board of Regents on 21 July 2018.
† Author.
‡ Nonauthor contributor.

2:43 PM · Nov 7, 2018 ·

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NRA
@NRA

Someone should tell self-important anti-gun doctors to stay in their lane. Half of the articles in Annals of Internal Medicine are pushing for gun control. Most upsetting, however, the medical community seems to have consulted NO ONE but themselves.

NRA-ILA | Surprise: Physician Group Rehashes Same Tired Gun Control Policies
Everyone has hobbies. Some doctors' collective hobby is opining on firearms policy. Half of the articles in the "Latest from Annals" email from the Annals of ...
nraila.org

ACP Responds to WSJ Commentary on Social Justice Education in Medical School

"We have many lanes, and these are some of them," McLean said. "We are not looking to get into political space. These are important issues that affect public health and our objective to improve health care delivery so that it works better for patients."

In an opinion piece in the *Philadelphia Inquirer*, Robert B. Doherty, ACP's senior vice president for governmental affairs and public policy, wrote, "*Not* teaching medical students about such social issues, and *not* advocating to change them, is what should worry all Americans. We need more gun control and climate change activists, and medical schools are precisely the right place to produce them—along with teaching them basic science."

Goldfarb's column and response to it spurred the #GoldfarbChallenge on Twitter with scores of doctors and health care professionals citing examples of real-life patient interactions in which social justice issues were more important than basic physiology. The *Wall Street Journal* responded to the social media comments with an editorial in favor of Goldfarb's views and wrote that the response on "left-wing medical Twitter" proved Goldfarb's point.

ACP Responds to WSJ Commentary on Social Justice Education in Medical School

The College says social justice issues such as firearm violence and climate change represent the world in which physicians practice and care for patients

Oct. 4, 2019 (ACP) – The American College of Physicians (ACP) has strongly reaffirmed its position on medical school curriculums and social issues in response to a column published in the *Wall Street Journal* critical of ACP's stance on medical school education.

The commentary, published September 12, argued that medical school education should focus solely on disease processes and not include social justice issues such as firearms violence, climate change and population health.

"ACP feels very strongly that these issues are critical to physician education and training because of their impact on the health of the patients we serve," said Dr. Robert McLean, ACP's president. Firearm violence was responsible for about 40,000 deaths in 2017, making it a significant public health issue, while climate change increases the risk for respiratory diseases, vector-borne diseases, flooding, water-related illnesses and subsequent mental health consequences, he said.

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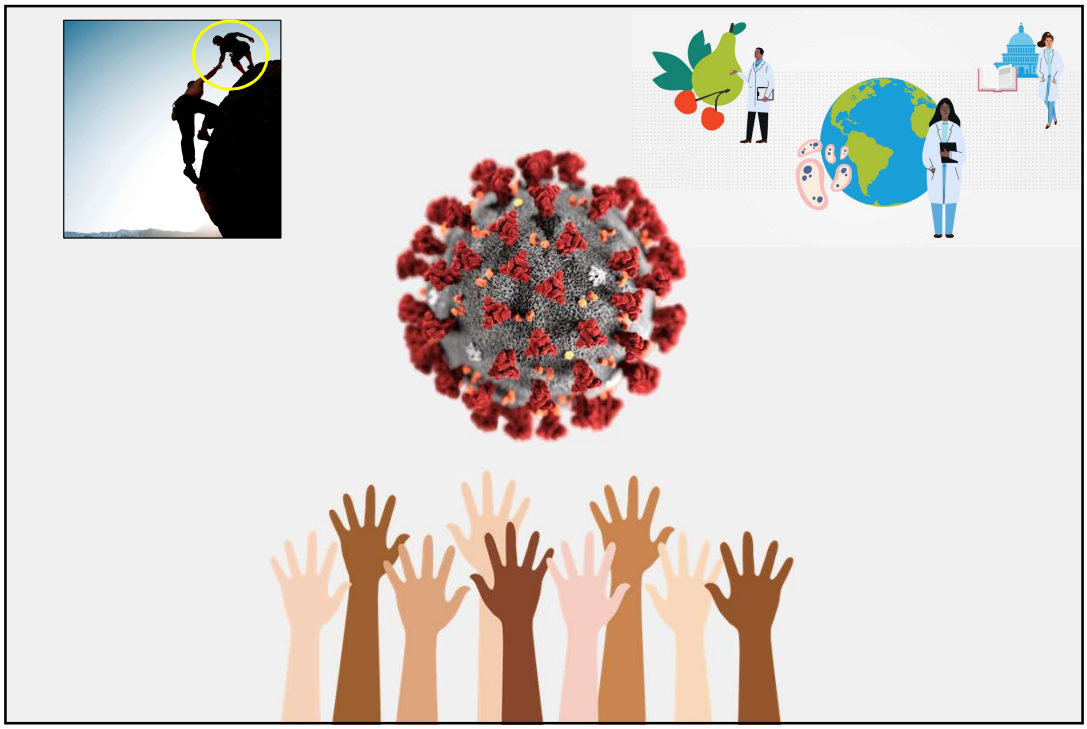
NATIONAL

After NRA Mocks Doctors, Physicians Reply: 'This Is Our Lane'

November 11, 2018 · 6:35 PM ET

The NRA was criticizing the American College of Physicians' new position paper, in which the physicians' group outlines its public health approach to reducing deaths and injuries from firearms.

"We are not anti-gun: we are anti-bullet holes in our patients," Esther Choo, a doctor and professor of emergency medicine at Oregon Health & Science University, replied on Twitter. "Most upsetting, actually, is death and disability from gun violence that is unparalleled in the world."



Opinion

VIEWPOINT

COVID-19 and Racial/Ethnic Disparities

Monica Webb Hooper, PhD
National Institute on Minority Health and Health Disparities (NIMHD), National Institutes of Health, Bethesda, Maryland.

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The novel SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) has led to a global pandemic manifested as coronavirus disease 2019 (COVID-19), with its most severe presentation being acute respiratory distress syndrome leading to severe complications and death. Select underlying medical comorbidities, older age, diabetes, obesity, and male sex have been identified as biological vulnerabilities for more severe COVID-19 outcomes.[1] Geographic locations that reported data by race/ethnicity indicate that African American individuals and, to a lesser extent, Latino individuals bear a disproportionate burden of COVID-19–related outcomes. The pandemic has shone a spotlight on health disparities and created an opportunity to address the causes underlying these inequities.[2]

The most pervasive disparities are observed among African American and Latino individuals, and where data exist, American Indian, Alaska Native, and Pacific Islander populations. Preliminary prevalence and mortality estimates in multiple geographic areas, which are being tracked daily, show a consistent pattern of racial/ethnic differences. In Chicago, Illinois, rates of COVID-19 cases per 100 000 (as of May 6, 2020) are greatest among Latino (1000), African American/black (925), "other" racial groups (865), and white (389) residents. Mortality rates are substantially higher among African American/black individuals (72 per 100 000) compared with Latino (36 per 100 000) and white (22 per 100 000) residents.[3] New York City (as of May 7, 2020) reported greater age-adjusted COVID-19 mortality among Latino persons (187 per 100 000) and African American individuals (184 per 100 000), compared with white (83 per 100 000) residents.[4]

The pandemic presents a window of opportunity for achieving greater equity in the health care of all vulnerable populations.

These reports signal that prevention efforts, such as shelter-in-place, might have less benefit among African American and Latino populations. Why would racial/ethnic minorities or economically disadvantaged people of any background be more susceptible to becoming infected or developing severe disease and dying? What are possible underlying causes of differential outcomes of a highly infectious respiratory illness in disadvantaged populations?

The underlying causes of health disparities are complex and include social and structural determinants of health, racism and discrimination, economic and educational disadvantages, health care access and quality, individual behavior, and biology. Examining possible precedents, mortality from influenza and pneumonia as causes of death for persons aged 65 years or older are lower among African American and Latino individuals compared with white persons.[5,6] In contrast, historically, pulmonary tuberculosis disproportionately affects persons of lower socioeconomic status, but there is no convincing evidence that rates of tuberculosis reactivation are influenced by socioeconomic status.

Understanding the reasons for the initial reports of excess mortality and economic disruption related to COVID-19 among health disparity populations may allow the scientific, public health, and clinical community to efficiently implement interventions to mitigate these outcomes, particularly if substantial disease emerges in the fall of 2020 or beyond.

The most common explanations for disproportionate burden involve 2 issues. First, racial/ethnic minority populations have a disproportionate burden of underlying comorbidities. This is true for diabetes, cardiovascular disease, asthma, HIV, morbid obesity, liver disease, and kidney disease, but not for chronic lower respiratory disease or COPD. Second, racial/ethnic minorities and poor people in urban settings live in more crowded conditions both by neighborhood and household assessments and are more likely to be employed in public facing occupations (eg, services and transportation) that would prevent physical distancing. As stated by Yancy,[2] "social distancing is a privilege" and the ability to isolate in a safe home, work remotely with full digital access, and sustain monthly income are components of this privilege. COVID-19–related exposures are also exacerbated by a greater propensity to be homeless and reside in neighborhoods with substandard air quality.[7]

The possibility that genetic or other biological factors may predispose individuals to more severe disease and higher mortality related to COVID-19 is an empirical question that needs to be addressed. These explanations must be considered in the full context of systemic factors such as historical and ongoing discrimination, and chronic stress and its effect on hypothalamic-pituitary-adrenal axis and immunologic functioning. As more data emerge, there will likely be evidence of racial/ethnic health disparities due to differential loss of health insurance, poorer quality of care, inequitable distribution of scarce testing and hospital resources, the digital divide, food insecurity, housing insecurity, and work-related exposures. There is an obligation to address these predictable consequences with evidence-based interventions.

Public policies have the power to enhance health and also exacerbate health disparities. Health interventions that are adapted for local contexts and community

When adjusted for age, Covid-19 death rates have been three times higher for Blacks, Hispanics and Native Americans than for Caucasians (M. T. Bassett et al. PLoS Med)

Opinion

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People of color are also three times more likely to be killed by the police than Caucasians

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The possibility that genetic or other biological factors may predispose individuals to more severe disease and higher mortality related to COVID-19 is an empirical question that needs to be addressed. These explanations must be considered in the full context of systemic factors such as historical and ongoing discrimination, and chronic stress and its effect on hypothalamic-pituitary-adrenal axis and immunologic functioning. As more data emerge, there will likely be evidence of racial/ethnic health disparities due to differential loss of health insurance, poorer quality of care, inequitable distribution of scarce testing and hospital resources, the digital divide, food insecurity, housing insecurity, and work-related exposures. There is an obligation to address these predictable consequences with evidence-based interventions.

Public policies have the power to enhance health and also exacerbate health disparities. Health interventions that are adapted for local contexts and community

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Black men in America live five fewer years than the average white man

Opinion

VIEWPOINT

COVID-19 and Racial/Ethnic Disparities

Monica Webb Hooper, PhD
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National Institute on Minority Health and Health Disparities (NIMHD), National Institutes of Health, Bethesda, Maryland.

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National Institute on Minority Health and Health Disparities (NIMHD), National Institutes of Health, Bethesda, Maryland.

Editorial page 2478

The novel SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) has led to a global pandemic manifested as coronavirus disease 2019 (COVID-19), with its most severe presentation being acute respiratory distress syndrome leading to severe complications and death. Select underlying medical comorbidities, older age, diabetes, obesity, and male sex have been identified as biological vulnerabilities for more severe COVID-19 outcomes.[1] Geographic locations that reported data by race/ethnicity indicate that African American individuals and, to a lesser extent, Latino individuals bear a disproportionate burden of COVID-19–related outcomes. The pandemic has shone a spotlight on health disparities and created an opportunity to address the causes underlying these inequities.[2]

The most pervasive disparities are observed among African American and Latino individuals, and where data exist, American Indian, Alaska Native, and Pacific Islander populations. Preliminary prevalence and mortality estimates in multiple geographic areas, which are being tracked daily, show a consistent pattern of racial/ethnic differences. In Chicago, Illinois, rates of COVID-19 cases per 100 000 (as of May 6, 2020) are greatest among Latino (1000), African American/Black (929), "other" racial groups (865), and white (389) residents. Mortality rates are substantially higher among African American/black individuals (73 per 100 000) compared with Latino (36 per 100 000) and white (22 per 100 000) residents.[3] New York City (as of May 7, 2020) reported greater age-adjusted COVID-19 mortality among Latino persons (187 per 100 000) and African American individuals (184 per 100 000), compared with white (93 per 100 000) residents.[4]

The pandemic presents a window of opportunity for achieving greater equity in the health care of all vulnerable populations.

These reports signal that prevention efforts, such as shelter-in-place, might have less benefit among African American and Latino populations. Why would racial/ethnic minorities or economically disadvantaged people of any background be more susceptible to becoming infected or developing severe disease and dying? What are possible underlying causes of differential outcomes of a highly infectious respiratory illness in disadvantaged populations?

The underlying causes of health disparities are complex and include social and structural determinants of health, racism and discrimination, economic and educational disadvantages, health care access and quality, individual behavior, and biology. Examining possible precedents, mortality from influenza and pneumonia as causes of death for persons aged 65 years or older are lower among African American and Latino individuals compared with white persons.[5,6] In contrast, historically, pulmonary tuberculosis disproportionately affects persons of lower socioeconomic status, but there is no convincing evidence that rates of tuberculosis reactivation are influenced by socioeconomic status.

Understanding the reasons for the initial reports of excess mortality and economic disruption related to COVID-19 among health disparity populations may allow the scientific, public health, and clinical community to efficiently implement interventions to mitigate these outcomes, particularly if substantial disease emerges in the fall of 2020 or beyond.

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Public policies have the power to enhance health and also exacerbate health disparities. Health interventions that are adapted for local contexts and community

Corresponding Author: Eliseo J. Pérez-Stable, MD, Office of the Director, National Institute on Minority Health and Health Disparities, National Institutes of Health, 6707 Democracy Blvd, Ste 800, Bethesda, MD 20892 (eliseo.perez-stable@nih.gov).

A newborn black boy in Washington, DC has a shorter life expectancy than a newborn boy in India

The New York Times

Declare Racism a Public Health Emergency

It would be more than just a symbolic gesture.

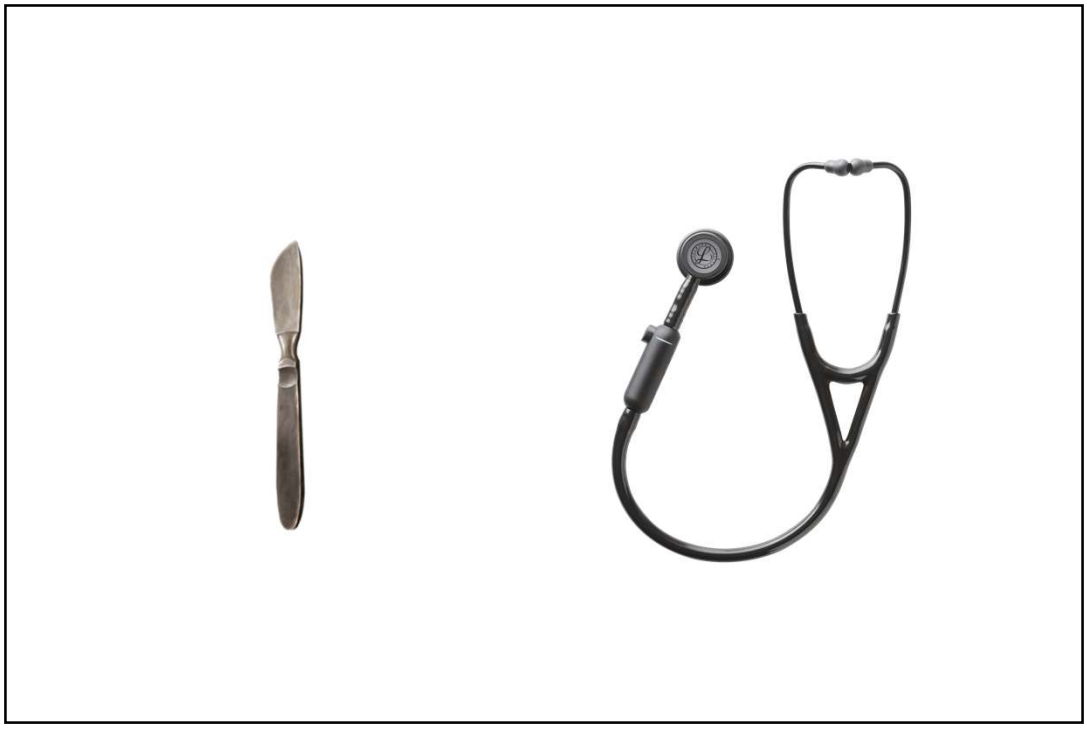
By Abdullah Shihipar

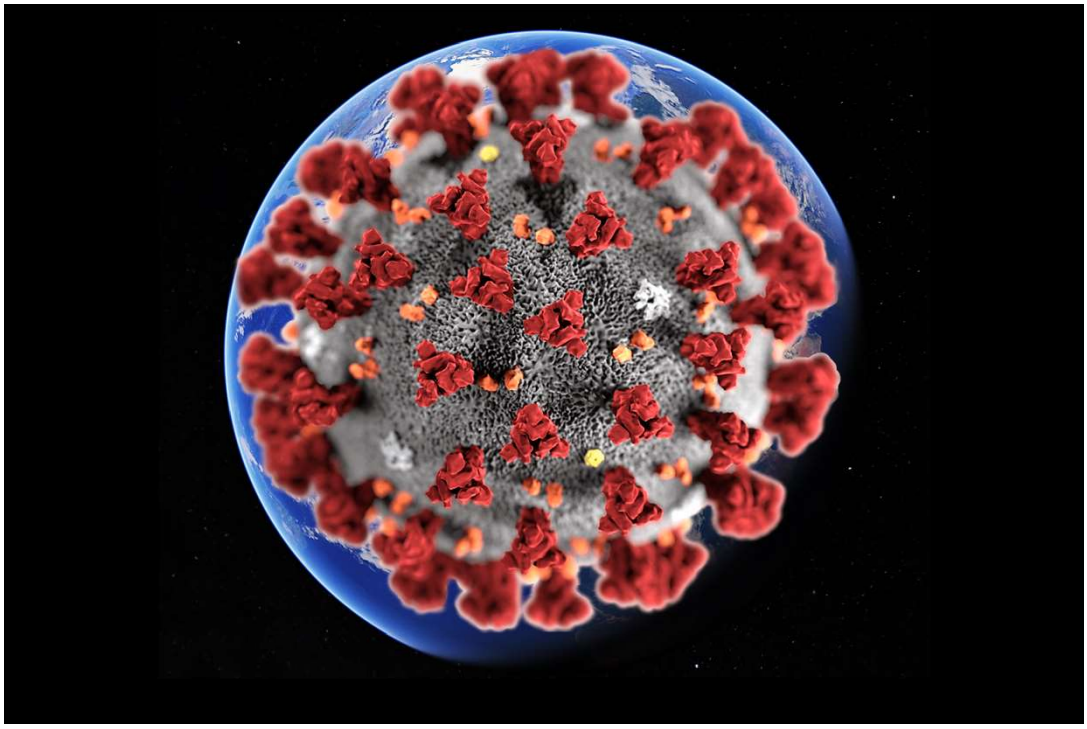
Mr. Shihipar is a public health researcher who leads Narrative Projects and Policy Impact Initiatives at the People, Place and Health Collective — a research laboratory in the Department of Epidemiology at the Brown University School of Public Health.

March 7, 2021

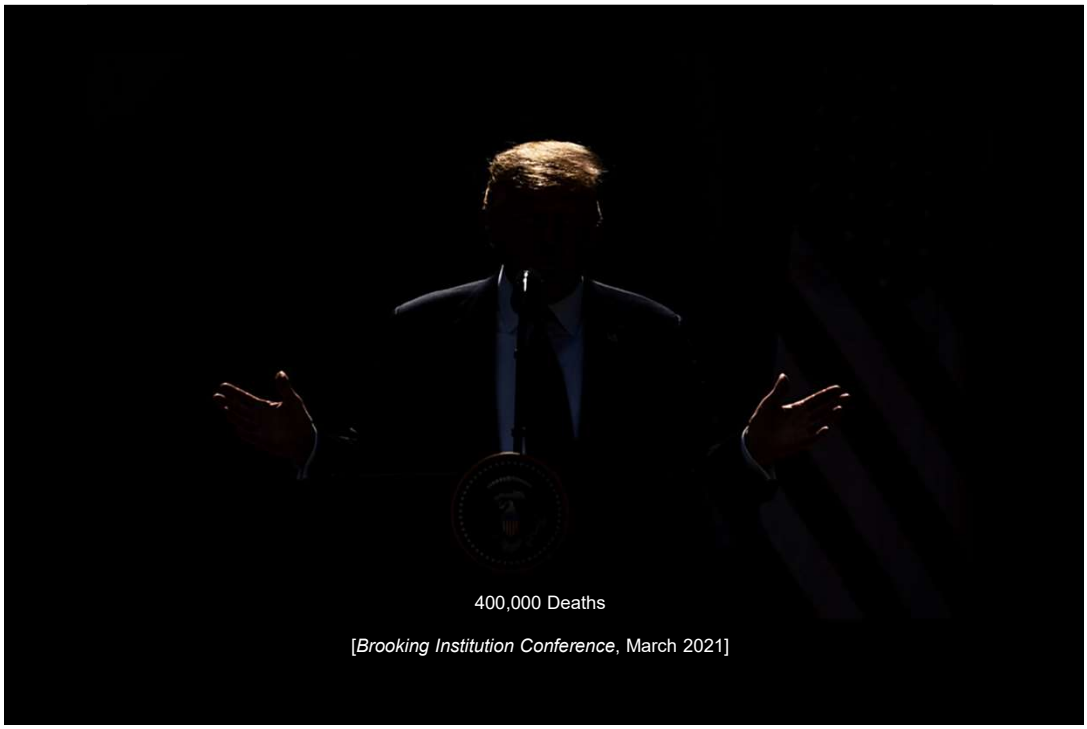
While Black and Latinx people make up only 13 and 18 percent of the U.S. population respectively, as of November they represent more than 50 percent of the country's Covid-19 hospitalizations. In Los Angeles County, deaths among Latinx people have increased more than 1,000 percent since November, nearly triple the rate for white residents. Native Americans have been nearly twice as likely as white people to die from Covid-19. The virus has killed a disproportionate number of Filipino nurses. To bring desperately needed relief to the communities of color that have been ravaged by the pandemic because of the effects of structural racism, the Department of Health and Human Services should declare racism a public health emergency.

Romelia Navarro is comforted by a nurse as she wept at the bedside of her dying husband, Antonio Navarro, in St. Jude Medical Center's Covid-19 unit in Fullerton,





None of us is safe until all of us are safe...

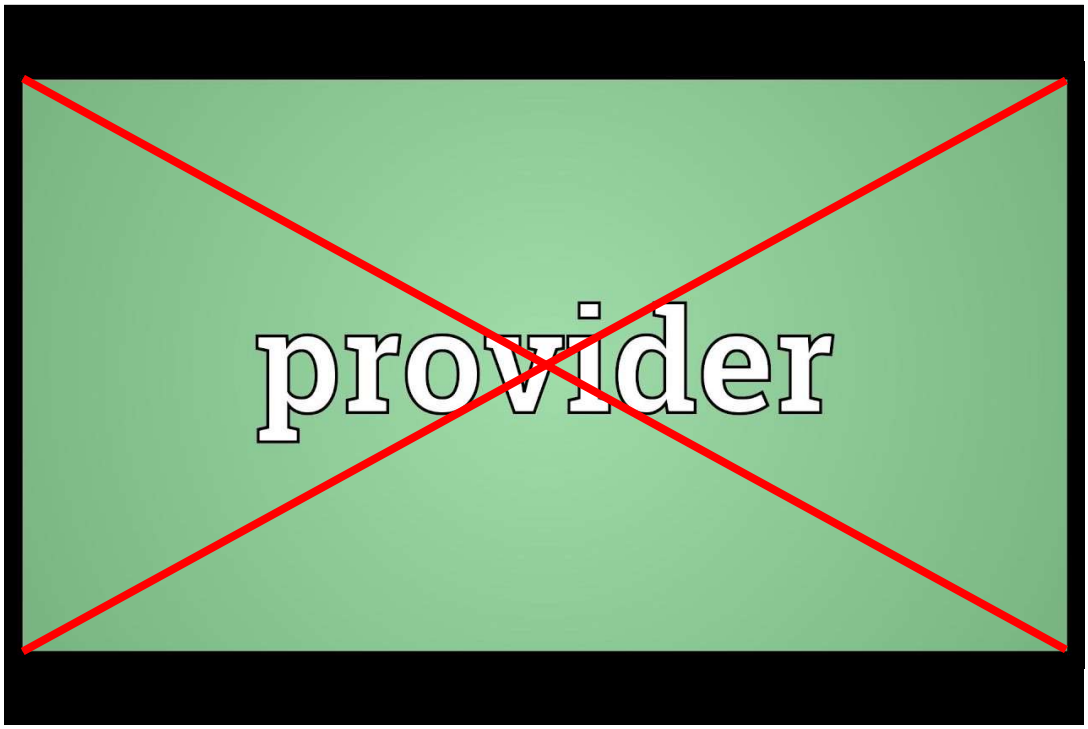


400,000 Deaths

[*Brooking Institution Conference*, March 2021]

We are dedicated to the relief of suffering...

... and we are the Ultimate Citizens of the World



ARTICLE IN PRESS

COMMENTARY

THE AMERICAN JOURNAL of MEDICINE®

The Language Game: We Are Physicians, Not Providers

I speak Spanish to God, Italian to women, French to men, and German to my horse.—Charles V

When Charles V spoke those words, political correctness was certainly a thing of the future. Yet, there was an important message in his quip: Words matter. Language is much more than a way of communicating; it is a reflection of the character of the people who created it. Italian, for example, does not have a word for "privacy" and, thus, had to adopt it from English. But it does have 34 different terms for "coffee,"[1] which says quite a bit about the Italians.

Words reflect how we think, but more importantly they *influence* how we think and, thus, shape how we ultimately act. This is why the recent shift in medical terminology warrants attention. Not only because it has introduced a new jargon but also because that jargon mirrors and, in turn, is likely to have influenced the downgrading of the patient-physician relationship. Concerningly, such lexicon is being accepted by younger physicians, thus threatening to make these changes a fait accompli.

We are referring to the adoption by medicine of the language and metrics of business, so that academic efforts have been transmogrified into relative value units; physicians into providers; and patients into clients, customers, and consumers. Virtual telemedicine visits have become desirable "billable encounters." Of course, practices must be organized and financially viable. But we must avoid anything that even subtly erodes the true purpose or perception of medicine's core mission.

One of these terms has a creepy past that, once recognized, should give serious pause to its ongoing use. The term "provider(s)" first appeared in *Medline* English-language articles only 55 years ago in 1965, primarily in reference to group practices, hospitals, and networks.[2] Yet, as of April 2021 we found 24,692 Medline entries that included "provider(s)" in their title. Of these, 193 were published in the 1970s; 1044 in the 1980s; 3049 in the 1990s; 4854 in the first decade of this century; and 12,256 in the second one. Curiously, it appears to have been accepted more in the United States than in the United Kingdom and more in internal medicine than in family medicine (Figure).

Some may salute "providers" as a neutral term of inclusivity, wrapping all members of a "health care team" in a cloak of equality in purpose, independent of specific functions within the team. But, as we shall describe, there is more to the history of this term than meets the eye.

Recently, organized medicine has removed eponyms linked to physicians who did not live up to the standards of their medical oath. And here is the irony of "providers." The term was first introduced by the Nazis in the 1930s when trying to debase German physicians of Jewish descent.[3] There were 1253 pediatricians in Hitler's Reich, and almost half were considered Jewish by the Nuremberg Laws of 1935. When the Nazis ascended to power in 1933, the German Society of Pediatries asked these physicians to resign. By 1938 the government simply revoked their licenses, so that instead of being called "Arzt" (ie, "doctors") they were demoted to "Krankenbehandler," that is, mere "practitioners" or "health care providers." The term 'Krankenbehandler' ultimately was applied to all German physicians of Jewish descent. Not only did they have to put it on their prescription pads, letterheads, and practice signs, but they also had to display it with a Star of David and the specification that they could only treat Jews. Soon after, mass deportations began. Words have societal implications.

Of course, Nazi propaganda went beyond medicine. The Third Reich was a master at mobilizing the German language for political gains. To better equivocate and confuse the public, it created an entire *Lingua Tertii Imperii*,[4] wherein deportation was turned into "evacuation," torture into "intensified interrogation," and executions into "special treatment." Orwell discussed these issues in "Politics and the English Language"[5] and then further expanded them into the "Newspeak" of *Nineteen Eighty-Four*. Needless to

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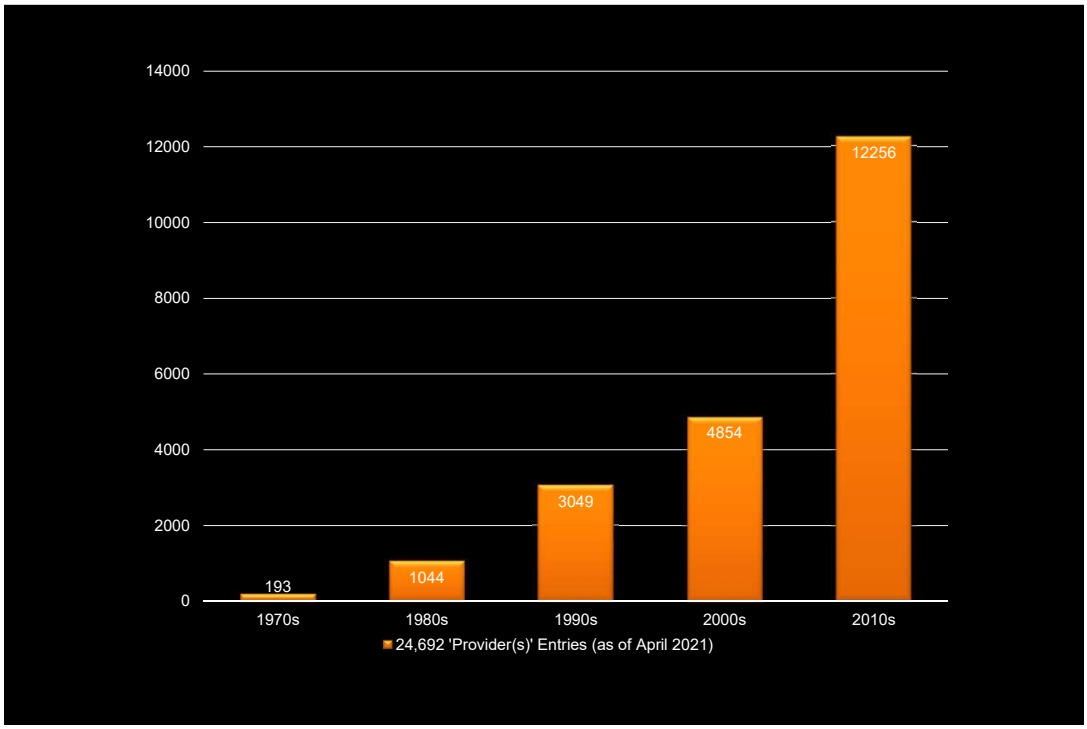
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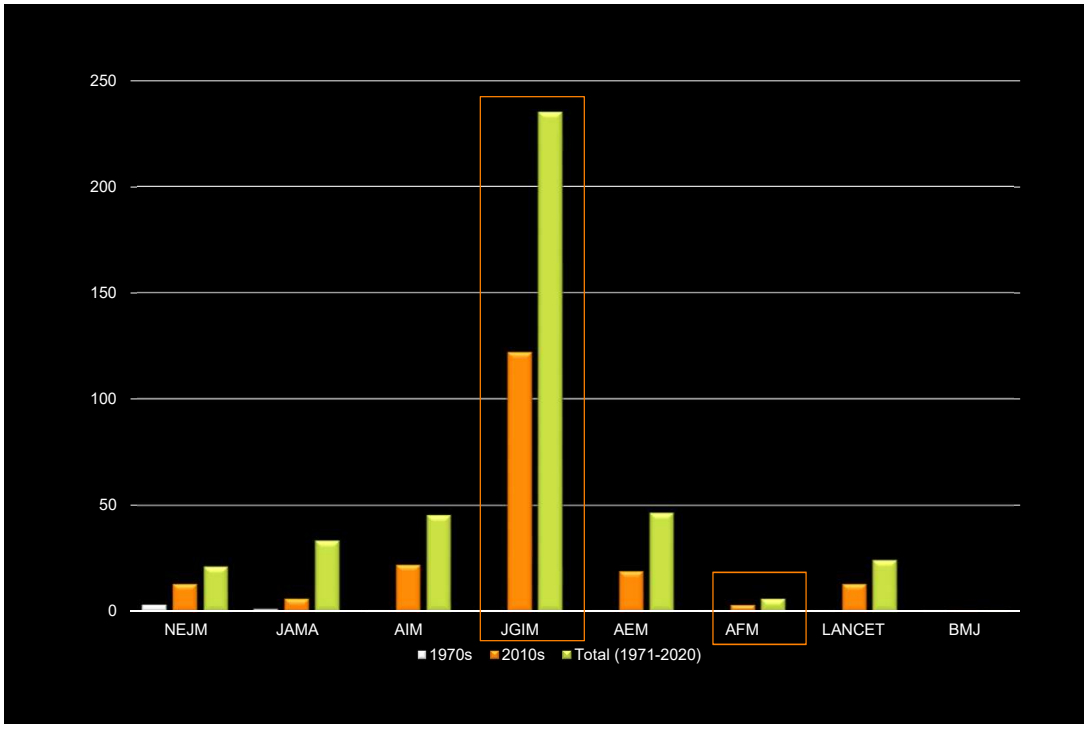
250
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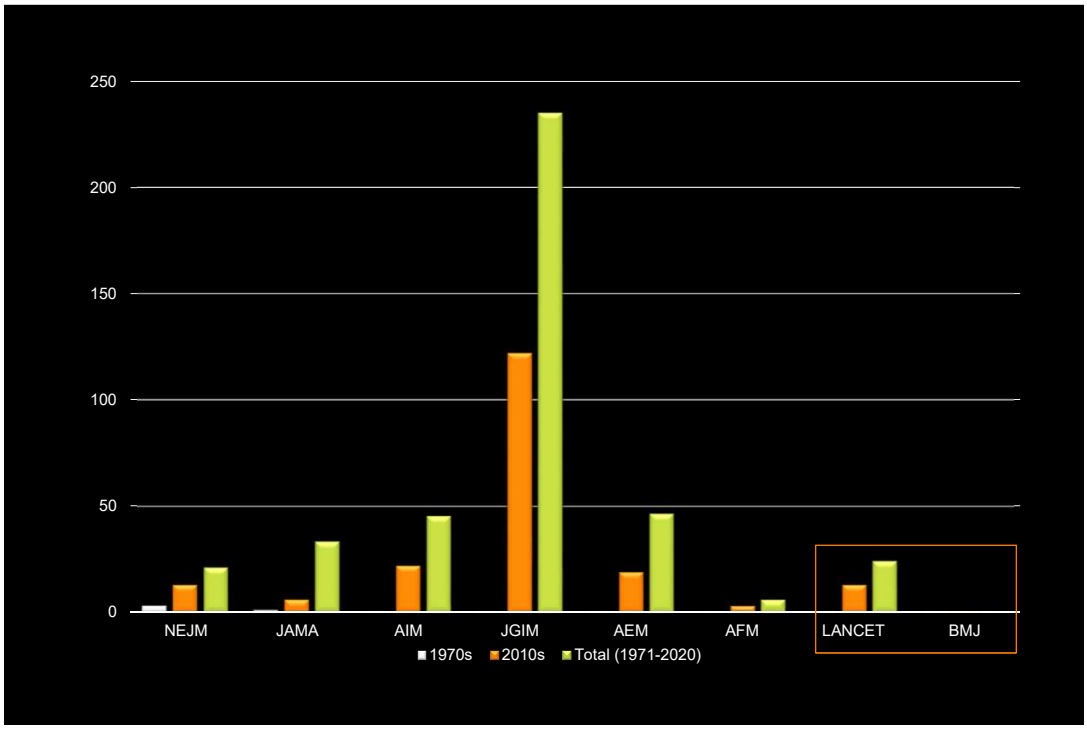


Focus

Jewish Pediatricians in Nazi Germany: Victims of Persecution*

Paul Saenger MD

Children's Hospital at Montefiore/Albert Einstein College of Medicine, Bronx, New York, USA

Key words: pediatrics, Nazi Germany

The plight and fate of German Jewish pediatricians during the Nazi period in Europe has not received much attention, yet the narratives of the victims still resonate today and they deserve to be remembered. The stories of two women serve as examples of the fateful turns taken by the lives of many German Jewish pediatricians between 1933 and 1945. The two women, Dr. Luci Adelsberger and Dr. Lilli Jahn, illustrate both the ordeals endured and the disparate ways the Nazi policies ultimately spared or ended lives.

IMAJ 2006;8:324–328

In the decree "*zum Schutze des deutschen Blutes und der deutschen Ehre*" (for the protection of German Blood and Honor), the Nuremberg Laws of September 1935 declared that German citizens were only those with German blood, or blood of a similar race who were suited to serve the German people and the Reich. Jews were wholly excluded. Denominational membership was not taken into consideration, and many of the victims had been assimilated for generations and were baptized as Christians.

The Nuremberg Laws defined "Jewish" as having three Jewish grandparents. According to current research data, 1% of all physicians in the German Reich in 1933 were considered to be Jewish by Nazi law. Considering the relatively low percentage of Jews in the German population (0.9%), this high quotient of medical specialists acquires an additional dimension when examined in light of their distribution across the spectrum of medical subspecialties. There were 1253 pediatricians practicing within the borders of the Reich. Of these, 611 (47%) were Jewish and therefore subject to the Racial Laws. Almost every second pediatrician was or was considered to be Jewish.

The particular affinity of Jewish German doctors for pediatrics was evident at the advent of the field and ran parallel to its development. One need only recall names like Eduard Henoch, Abraham Jacobi, Heinrich Finkelstein and Bela Schick to serve as examples [1,2]. There is no doubt that German pediatricians and the official representatives of their profession welcomed the seizure of power by the Nazis in 1933. They hoped that it would increase recognition of their field. The regime's political interest in creating racially and genetically pure offspring made pediatrics of particular importance to the state. Representatives of German pediatricians adopted National Socialist aims. Only a few months after the Nazi seizure of power on 30 January 1933, the German Society of Pediatrics asked their members of Jewish descent to resign voluntarily, or they would be stricken from the membership list. The Society rapidly embraced Nazi racial policy and by 1934 the remaining Society members were already gleefully holding their first fully Aryan National Pediatrics meeting.

In the 1937 issue of the Reichs *Medizinal Kalender*, a directory of doctors, the remaining Jewish doctors in Germany were stigmatized by a colon placed before their names [Figure 1]. Their medical licenses were finally revoked in 1938. They could no

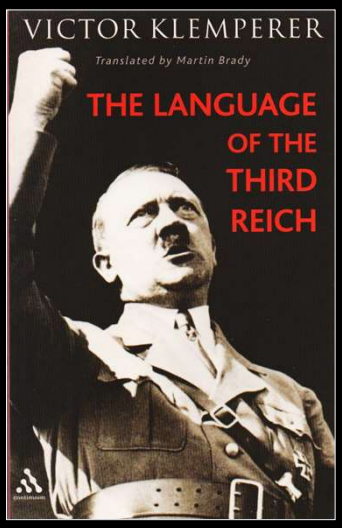
Figure 1. In the 1937 issue of the Reichs *Medizinal Kalendar*, a directory of doctors, the remaining Jewish doctors in Germany were stigmatized by a colon placed before their names.

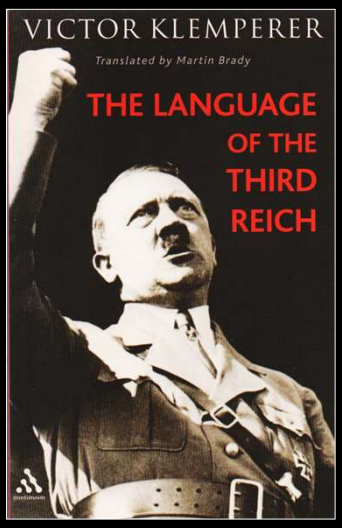
* Presidential address, Lawson Wilkins Pediatric Endocrine Society, San Francisco, 2004

LANGUAGE GAME

I speak Spanish to God, Italian to women, French to men and German to my horse.

(Charles V, Holy Roman Emperor)



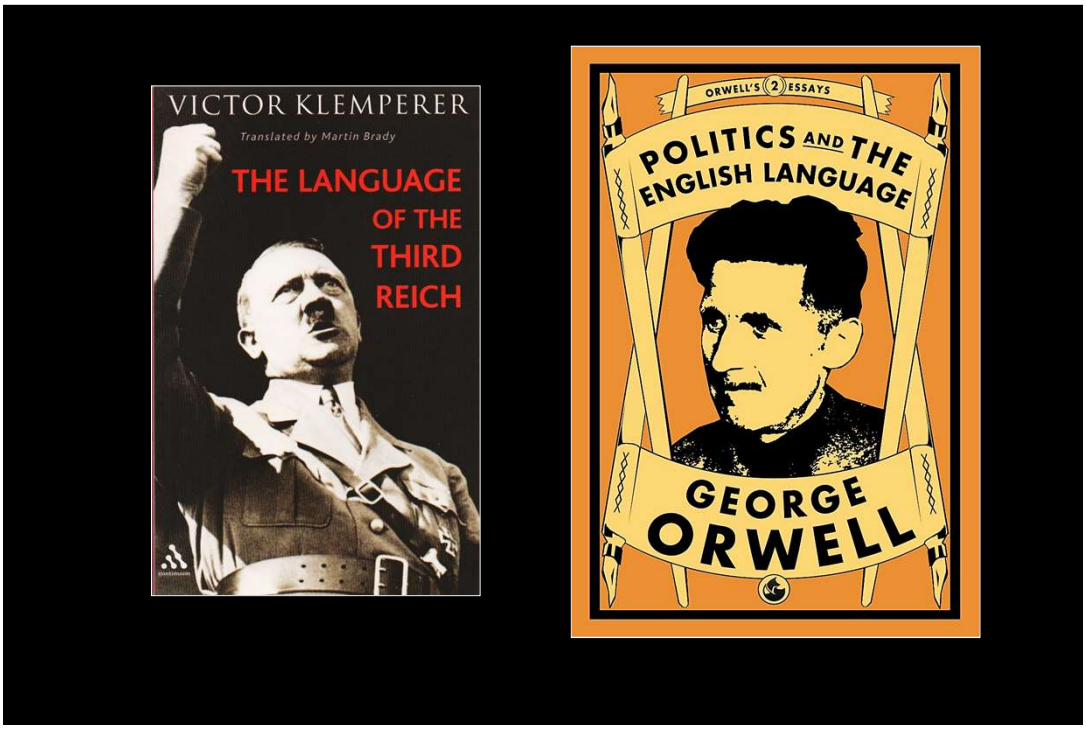


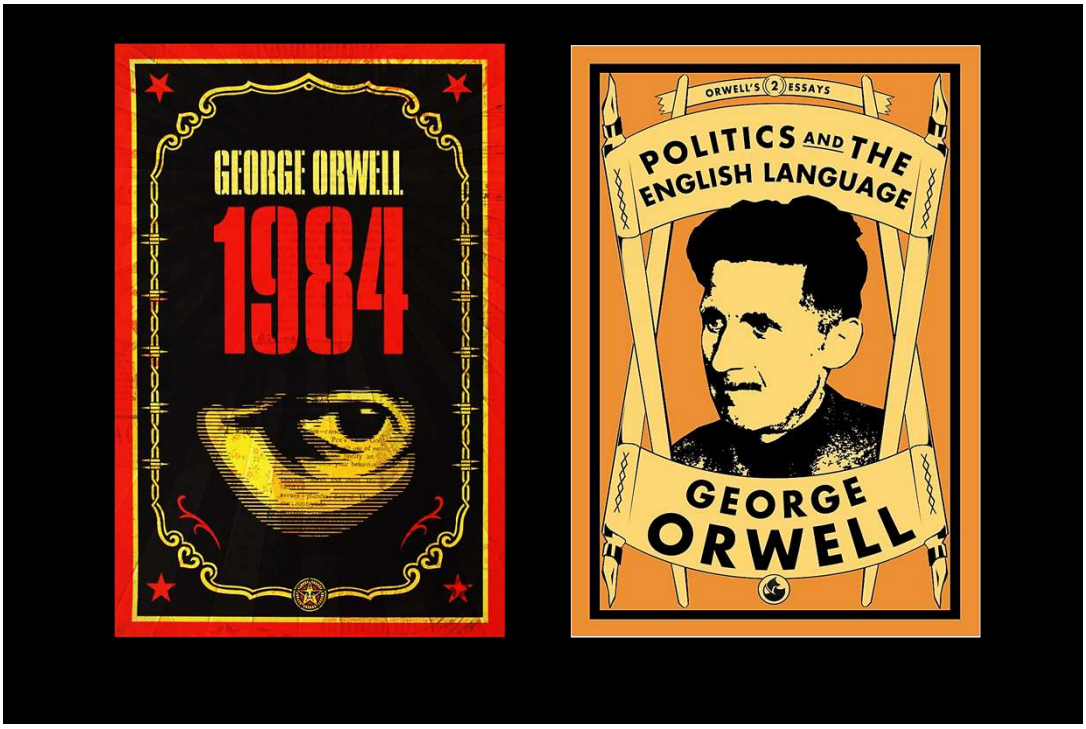
Deportation = "Evacuation"

Torture = "Intensified Interrogation"

Executions = "Special Treatment"

[Jewish] Physicians = "Providers"


VICTOR KLEMPERER
Translated by Martin Brady
THE LANGUAGE OF THE THIRD REICH
ORWELL'S 2 ESSAYS
POLITICS AND THE ENGLISH LANGUAGE
GEORGE ORWELL


GEORGE ORWELL
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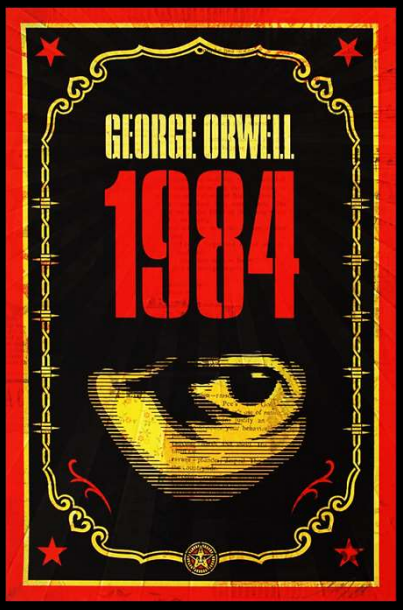
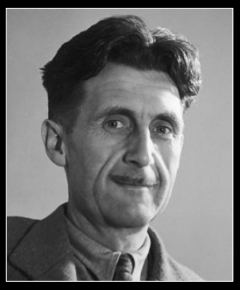


WAR IS PEACE
FREEDOM IS SLAVERY
AND IGNORANCE IS STRENGTH
1984



Today's Doublespeak

- Friendly Fire…
- Collateral Damage…
- Downsizing…

Medical (Corporate) Doublespeak

Medical-Industrial Complex

"Relative Value Units"

"Customer (patient) Satisfaction"

"Stakeholders"

Medical-Industrial Complex

"Enterprise"

"Templates"

"Documentation"

"Deliverables"

"Quality Assurance"

"Heroes"

"Wellness"(?)

"Burnout"

"Relative Value Units"

"Customer (patient) Satisfaction"

"Stakeholders"

Medical-Industrial Complex

"Enterprise"

"Templates"

"Documentation"

"Deliverables"

"Quality Assurance"

"Heroes"

"Wellness"(?)

"Burnout"/ Moral Injury

The New York Times

Opinion

Patients Are Not ~~Consumers~~ Clients/Customers

By Paul Krugman

April 21, 2011

Earlier this week, The Times reported on Congressional backlash against the Independent Payment Advisory Board, a key part of efforts to rein in health care costs. This backlash was predictable; it is also profoundly irresponsible, as I'll explain in a minute.

But something else struck me as I looked at Republican arguments against the board, which hinge on the notion that what we really need to do, as the House budget proposal put it, is to "make government health care programs more responsive to consumer choice."

The New York Times

Opinion

Patients Are Not ~~Consumers~~ Clients/Customers

By Paul Krugman

April 21, 2011

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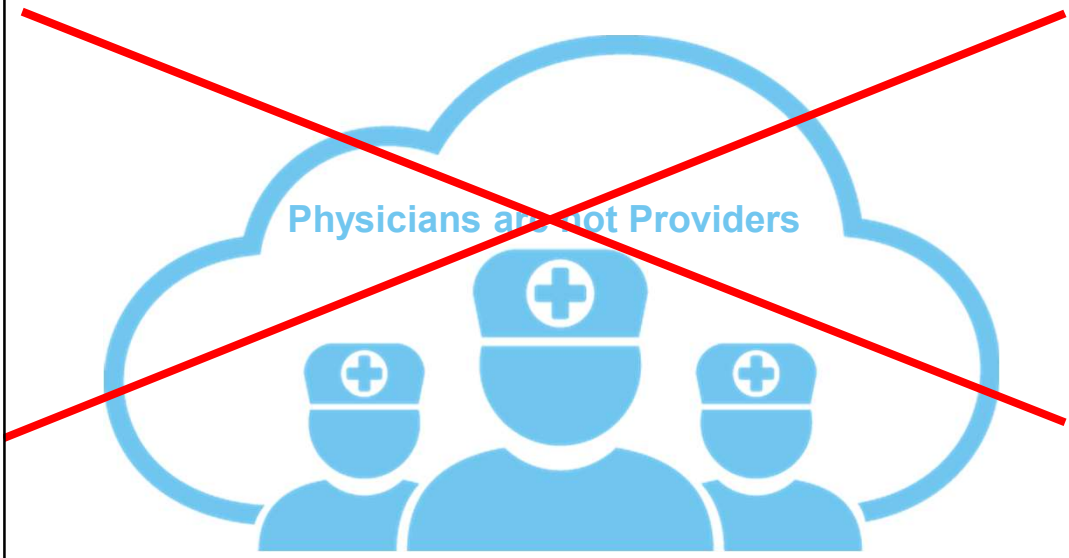
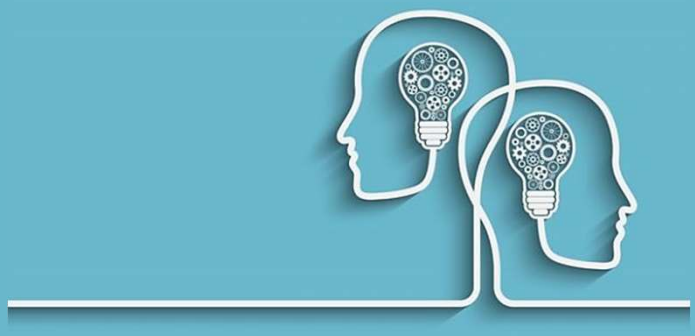
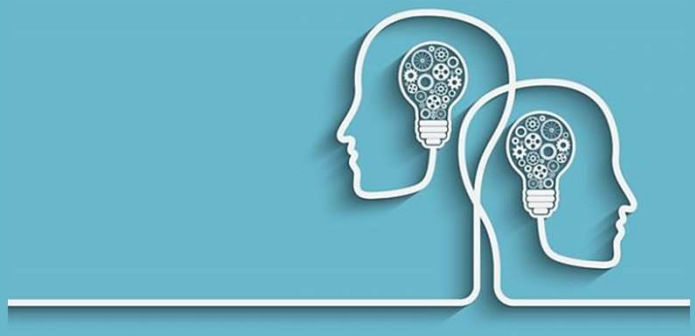
The idea that all this can be reduced to money — that doctors are just "providers" selling services to health care "consumers" — is, well, sickening. And the prevalence of this kind of language is a sign that something has gone very wrong not just with this discussion, but with our society's values.



Or at least, not *only* 'providers'...



“Doctor” (Latin: doceō, lit. 'I teach')



“Doctor” (Latin: doceō, lit. 'I teach') = **Teacher**

SPECIAL FEATURE

History of Medicine

The Archetypes of Medicine: A Job Description for the 21st Century

Salvatore Mangione, MD[1], Jennifer Fisher Wilson, MS[2] and Steven K. Hertine, MD[1]

[1] Sidney Kimmel Medical College; [2] The Writing Center, Scott Memorial Library, Thomas Jefferson University, Philadelphia, Pennsylvania

ABSTRACT

Medicine is facing an identity crisis, one that might find resolution by revisiting a past rich in multifaceted individuals who transcended the strict definition of "doctor", excelled in other fields of human endeavor, and showed us different ways of being physicians. This paper reviews 12 archetypes that have been part of the profession since its inception, but that, as of late, might have been forgotten. Our goal is to elicit discussion and introspection, with the premise that being a physician ought to be something larger than being a mere technician. If our premise is accepted, then the next step would be to identify those personal traits that made those archetypes possible, so that we can start both recruiting for them and then nurturing them during training.

Keywords: History of Medicine; Medical Humanities. **[Am J Med Sci 2019;357(2):87–92]**

"In the continual remembrance of a glorious past individuals and nations find their noblest inspiration" (William Osler)*

"We live forward, we understand backward." (Søren Kierkegaard)†

When James Agee titled his book, "Let us now praise famous men [and our fathers that begat us]" he was quoting Ecclesiasticus[1] as an inspiration to overcome the crisis of the Depression.[1] In medicine today we too are facing a crisis, one that might similarly benefit from revisiting our roots and the "four great features of [our] guild":[2]

"First, the emancipation […] from the shackles of priestcraft and of caste; secondly, the conception of medicine as an art based on accurate observation, and as a science, an integral part of the science of man and of nature; thirdly, the high moral ideals, expressed in that most 'memorable of human documents,' the Hippocratic oath; and fourthly, the conception and realization of medicine as the profession of a *cultivated gentleman*. No other profession can boast of the same unbroken continuity of methods and of ideals."

In the 100 years since Osler first penned these lines, much has undoubtedly changed. If he were to write today, for instance, Osler would surely include gentle ladies too, since close to half of all American medical students are now women, and women are actually expected to soon outnumber men in England.[3] Yet, other changes might not have been as equally beneficial. For example, being *cultured* is no longer a tenet of the profession, and medical schools have become less art-based and more technical.[4] The humanistic aspects have not been fully shed, of course—we are still caring for human beings—but they have become secondary in both undergraduate and postgraduate curriculum.[5,6] Not surprisingly, students whose main goal is admission feel increasingly pressured to forsake fields of learning that only decades ago would have been deemed essential for a well-rounded and sympathetic healer. At times, physicians' roles seem to have been reduced to that of assembly line workers,[7] small cogs in a medical-industrial complex over which they have little control or even understanding.[8,9] It is no wonder that empathy suffers[10] and burnout is epidemic.[11]

Ironically, medicine still offers plenty of freedom to become the physicians we want to be. One could even argue that medicine is like a Rorschach test, insofar as it says more about our individual values and choices than about the craft itself. Hence, the need for introspection.

Who is a doctor in the 21st century? What are the crucial ingredients for that unique mix of scientific, emotional, and personal traits that ultimately make a good physician? What selection and training are required in order to produce that kind of doctor? Clearly, competence, knowledge, and technical skills are a must. Yet, there are undoubtedly other traits that will eventually separate healers from technicians. If we can identify them, maybe we can not only change our selection process, but also ensure that those traits are nurtured rather than stifled. The answers to these questions may lie in the past.

To this end, we will revisit 12 archetypes that have been part of medicine since its inception, but as of late, might have been forgotten. Our models are multifaceted individuals who transcended the strict definition of

* Sir William Osler, The Leaven of Science, Philadelphia, May 21st 1894.
† Kierkegaard S. Journals IVA 164 (1843)

Special Communication

Educating The Humanist Physician

An Ancient Ideal Reconsidered

Edmund D. Pellegrino, MD

We must understand what man is, for he is the subject matter of the science of medicine for whom it is promulgated. To understand him is to understand the world, for he is similar to the world in his construction. He is the microcosm, the macrocosm in miniature.

—*The Caraka Samhita*

IN THE growing litany of criticism to which our profession is increasingly exposed, there is one that in many ways is more painful than all the rest. It is the assertion that physicians are no longer humanists and that medicine is no longer a learned profession. Our technical proficiency is extolled, but in its application we are said to be insensitive to human values. We are, in short, presumed to be wanting as educated men and as responsive human beings.

The assertion is painful because there is some truth in it. Moreover, it comes from those who experience our behavior—our students and our patients. And, in truth, our art is indeed in danger of being engulfed by its technological apparatus. But most painful of all, the assertion strikes at the reality that alone gives authenticity to our profession—our unique charge to answer the appeal of a sick and anxious person for help that is both competent and considerate.

The criticism is especially poignant for medical educators, at whose door much of the responsibility is laid. We are told that we neglect the teaching of human values and the *art* of medicine; that in our zeal for science we ignore liberal studies; and, most telling of all, that the patient care we provide in our teaching hospitals and clinics is itself dehumanizing.

Even our friendlier critics are alarmed by the recent trend to shorten medical education. They fear that our haste will further erode the liberal education of future physicians and thus accentuate the dehumanization of the student and the depersonalization of the patient. These anxieties reach crucial dimensions when viewed against the context of the erosion of personal elements inherent in medicine's increasing institutionalization and specialization.

The terms *humanism*, *compassion*, and *liberal education* are all shibboleths easily employed to advance one's own political, social, or educational ideologies. Without some clear display of the anatomy of these concepts, physicians will only respond with defensive denial, while their critics will yield to enraptured denunciations. As always, the patient will be victimized by an exchange of diatribes, rebuttals, and contumely. Worst of all, we will miss the opportunity to reexamine these terms and redefine them in their contemporary setting.

There is indeed a genuine and urgent dilemma. Society has the right to require that physicians be competent, that they practice with consideration for the integrity of the person, and that some of them also be educated men who can place medicine in its proper relationship to culture and society.

Medicine enjoys a unique position among disciplines—as a humane science whose technology must ever be person-oriented. Its practitioners are, therefore, under an extraordinary mandate to live and work within a humanistic frame. What does it mean to educate a humanist physician in contemporary society?

To answer this, we must first examine more closely what we mean today by this ancient ideal. The term *humanist* is too often appended to the term *physician* in an intuitive and altogether imprecise fashion. I suggest that the ideal encompasses two essential but distinct sets of components—one affective and one cognitive. These differ markedly in content; the one does not guarantee the other. In the best examples they are complementary, but they may also be in conflict. Each requires a different mode of learning and teaching.

The failure to make these distinctions leads to pretension, on the one hand, or unfilled expectations, on the other. In either case, the concept loses credibility, and this must be prevented in these times when medicine faces unprecedented demands on all its humane components.

The Physician as Humanist—a Bimodal Concept

So much feeling surrounds the idea of the physician as a humanist that it is somewhat precarious to attempt a clarification, for clarification requires

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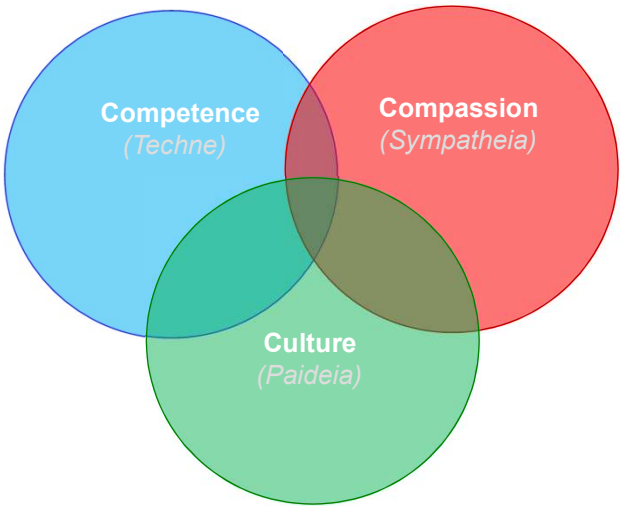

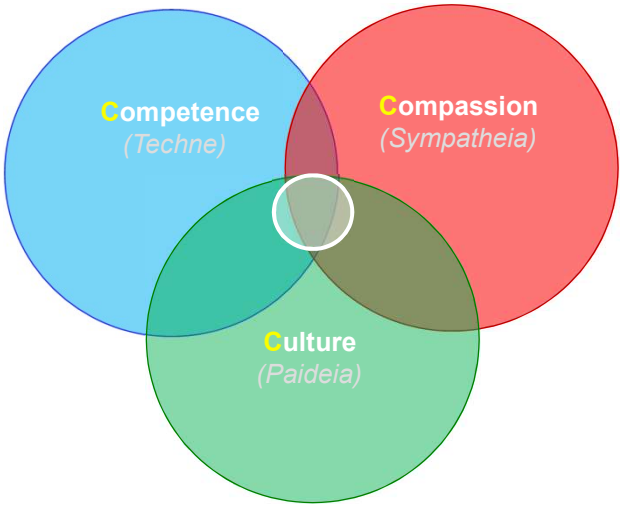
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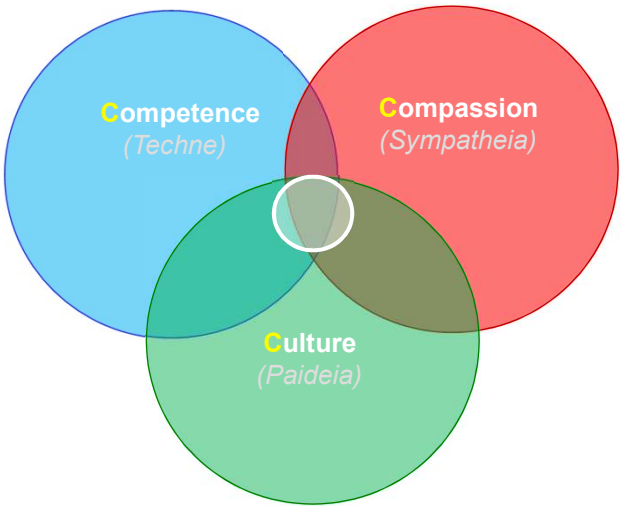
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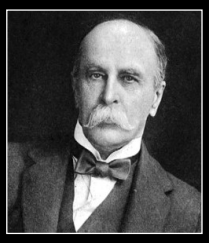
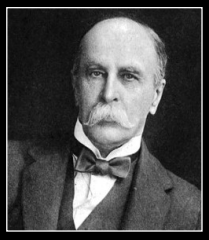
"Four great features of [our] guild"
[1902]



"First, the emancipation […] from the shackles of priestcraft and of caste; secondly, the conception of medicine as an *art* based on accurate observation, and as a *science*, an integral part of the science of man and of nature; thirdly, the high moral ideals, expressed in that most 'memorable of human documents', the Hippocratic oath.

And fourthly, the conception and realization of medicine as the profession of a *cultivated gentleman*."



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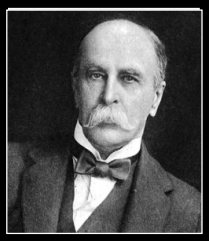
(W. Osler, 1902)



"First, the emancipation […] from the shackles of priestcraft and of caste; secondly, the conception of medicine as an *art* based on accurate observation, and as a *science*, an integral part of the science of man and of nature; thirdly, the high moral ideals, expressed in that most 'memorable of human documents', the Hippocratic oath.

And fourthly, the conception and realization of medicine as the profession of a *cultivated gentleman*."

… It goes without saying that this type of doctor is first of all an educated man."

(W. Osler, 1902)

…the practitioner deals with facts of *two categories*. Chemistry, physics, biology enable him to apprehend one set, yet, he needs a different apparatus to deal with other, more subtle elements. Specific preparation is in this way much more difficult, since one must rely on *a varied and enlarging cultural experience*. Such enlargement of the physician's horizon is very important, since scientific progress has greatly modified his ethical responsibility.

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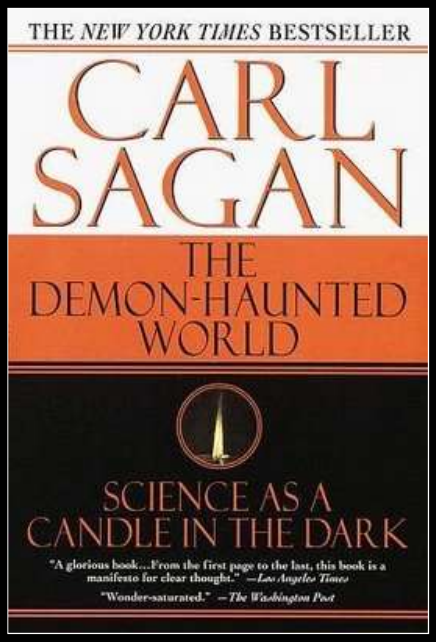
(A. Flexner, 1910)

Critical Thinking

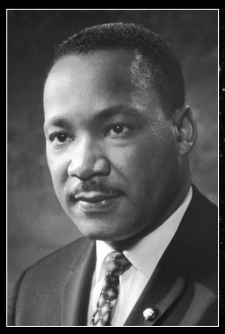


1995

"Science is more than a body of knowledge, *it is a way of thinking.*

I have a foreboding of an America in my children's or grandchildren's time — when the United States is a service and information economy; when nearly all the key manufacturing industries have slipped away to other countries; when awesome technological powers are in the hands of a very few, and no one representing the public interest can even grasp the issues; when people have lost the ability to set their own agendas or knowledgeably question those in authority; when, clutching our crystals and nervously consulting our horoscopes, our critical faculties in decline, unable to distinguish between what feels good and what's true, we slide, almost without noticing, back into superstition and darkness."

[*Carl Sagan, 1995*]



"The function of education is to teach someone to think intensively and to think *critically*."

[*Martin Luther King, 1947*]

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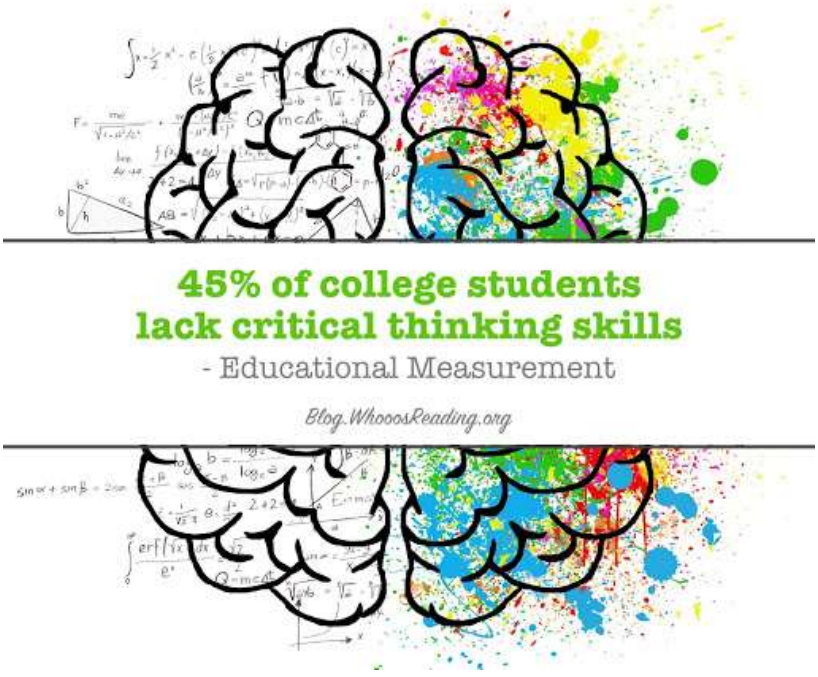

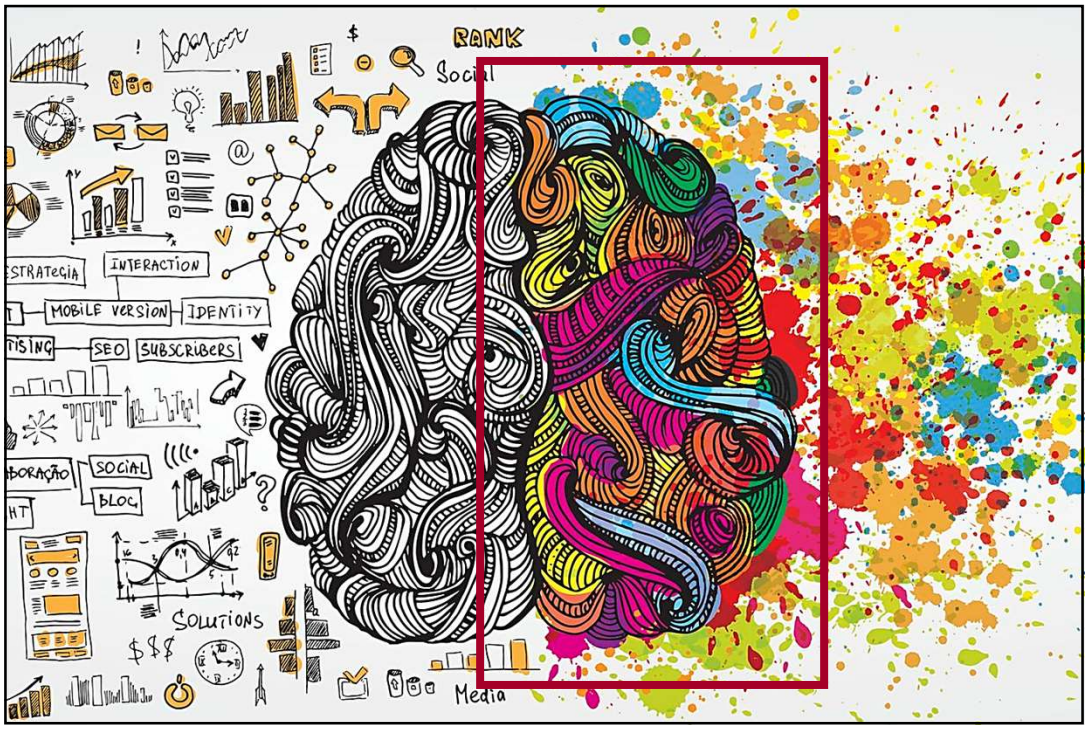
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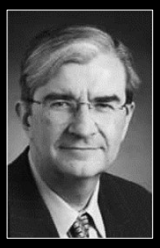
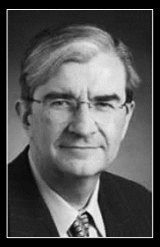


"We need doctors, all right, but not all doctors are the same.

If I were to choose between two equally knowledgeable doctors, I would go with the one who has read Chekhov, because he's a fuller human being and he's going to treat *me* like a fuller human being."

(Benito Cachinero-Sánchez, vice chair of the *Library of America*'s Board of Directors)



"We need doctors, all right, but not all doctors are the same.

"If a doctor only knows about medicine,
that doctor doesn't know *anything* about medicine."

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(Benito Cachinero-Sánchez, vice chair of the *Library of America*'s Board of Directors)

CrossMark

Medical Students' Exposure to the Humanities Correlates with Positive Personal Qualities and Reduced Burnout: A Multi-Institutional U.S. Survey

Salvatore Mangione, MD[1], Chayan Chakraborti, MD, FACP[2], Giuseppe Staffari, MD[3], Rebecca Harrison, MD FACP[4], Allan R. Tunkel, MD PhD[5], Kevin T. Liou, MD[6], Elizabeth Cerceo, MD[7], Megan Voeller, MA[8], Wendy L. Bedwell, PhD[9], Keaton Fletcher, BS[10], and Marc J. Kahn, MD, MBA, FACP[11]

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BACKGROUND: Literature, music, theater, and visual arts play an uncertain and limited role in medical education. One of the arguments often advanced in favor of teaching the humanities refers to their capacity to foster traits that not only improve practice, but might also reduce physician burnout—an increasing scourge in today's medicine. Yet, research remains limited.

OBJECTIVE: To test the hypothesis that medical students with higher exposure to the humanities would report higher levels of positive physician qualities (e.g., wisdom, empathy, self-efficacy, emotional appraisal, spatial skills), while reporting lower levels of negative qualities that are detrimental to physician well-being (e.g., intolerance of ambiguity, physical fatigue, emotional exhaustion, and cognitive weariness).

DESIGN: An online survey.

PARTICIPANTS: All students enrolled at five U.S. medical schools during the 2014–2015 academic year were invited by email to take part in our online survey.

MAIN MEASURES: Students reported their exposure to the humanities (e.g., music, literature, theater, visual arts) and completed rating scales measuring selected personal qualities.

KEY RESULTS: In all, 739/3107 medical students completed the survey (23.8%). Regression analyses revealed that exposure to the humanities was significantly correlated with positive personal qualities, including empathy ($p < 0.001$), tolerance for ambiguity ($p < 0.001$), wisdom ($p < 0.001$), emotional appraisal ($p = 0.01$), self-efficacy ($p = 0.02$), and spatial skills ($p = 0.02$), while it was significantly and inversely correlated with some components of burnout ($p = 0.01$). Thus, all hypotheses were statistically significant, with effect sizes ranging from 0.2 to 0.59.

CONCLUSIONS: This study confirms the association between exposure to the humanities and both a higher level of students' positive qualities and a lower level of adverse traits. These findings may carry implications for medical school recruitment and curriculum design.

"[Science and humanities are] twin berries on one stem, grievous damage has been done to both in regarding [them]... in any other light than complemental." (William Osler, Br Med J. 1919;2:1-7).

KEY WORDS: humanities; empathy; ambiguity; burnout; wisdom; medical education.

J Gen Intern Med 33(5):628–34
DOI: 10.1007/s11606-017-4275-8

INTRODUCTION

Medicine today finds itself caught in a paradox. It has undoubtedly enjoyed many successes, and yet it is also the profession with the highest rate of suicide,[1] a burnout rate greater than 50%,[2] rampant depression,[3] dwindling empathy,[4] a negative view by the public,[5] and a disturbing tendency for physicians to quit.[6] This conundrum has prompted a search for a more balanced way to train healing physicians who can maintain their ideals and better cope with the challenges of medical practice. It has also led to a revisiting of the relationship between medicine and the humanities.

The two fields have been diverging for more than 100 years, first as a result of the "two cultures" split between the arts and sciences,[7] and then because of medicine's increasing skepticism of the humanities as being slippery, non-metric, hard to define, and essentially incompatible with an evidence-based approach. Yet given the aforementioned difficulties faced by today's medicine, some educators have advocated a return to the humanistic roots of our craft.[8] Accordingly, some medical schools have incorporated the humanities in their curriculum, and a few have even attempted to broaden students'

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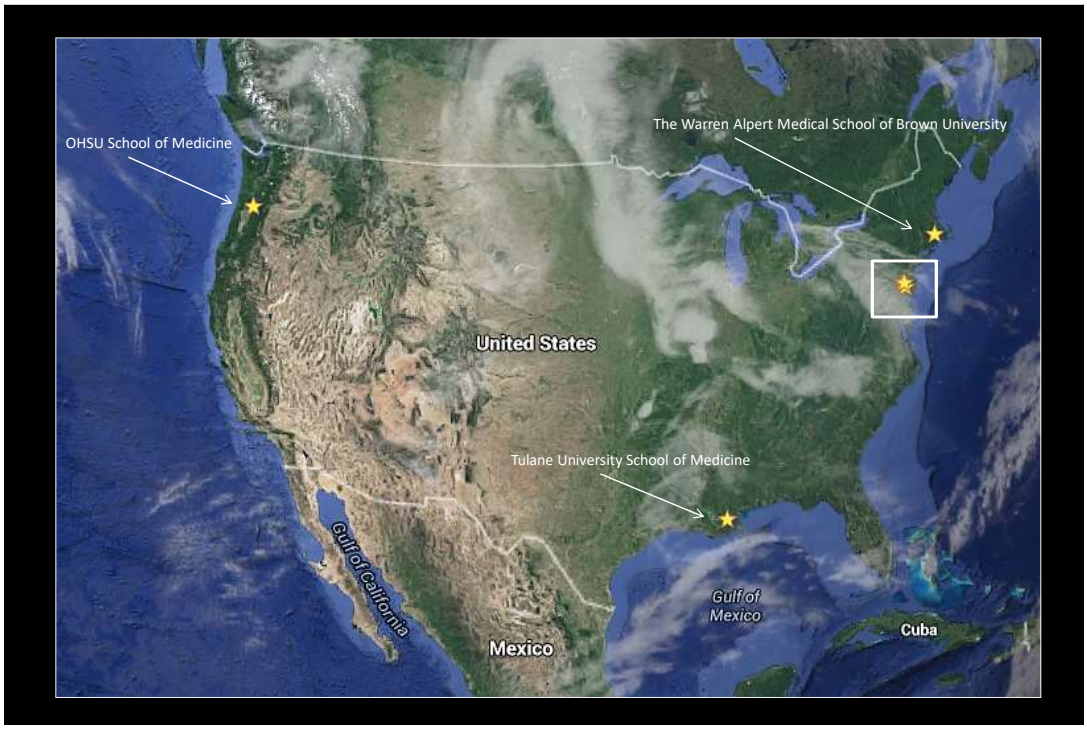
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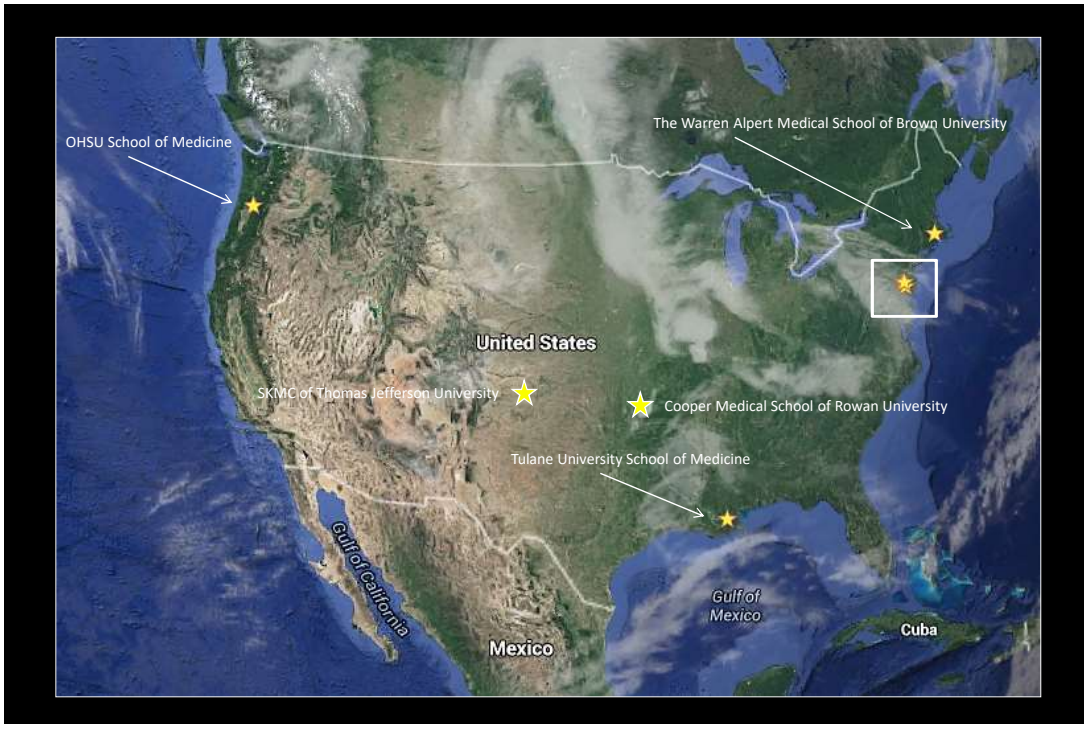
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Tulane University School of Medicine
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Gulf of Mexico
Mexico
Cuba

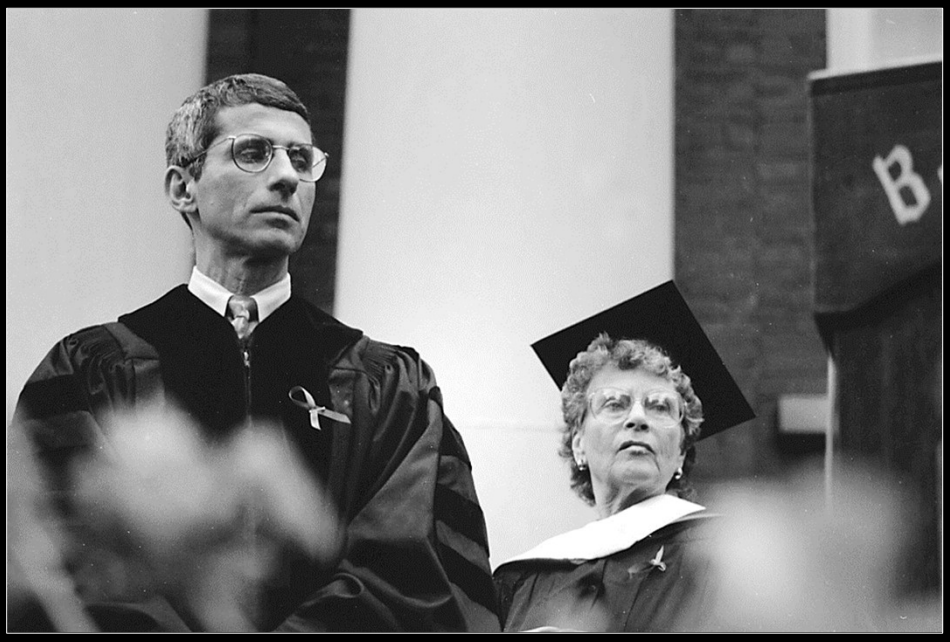
Association between Humanities Exposure and Medical Students' Personal Qualities: A Multi-Institutional Survey

739 students of five US medical schools

Greater exposure to humanities was associated with*:

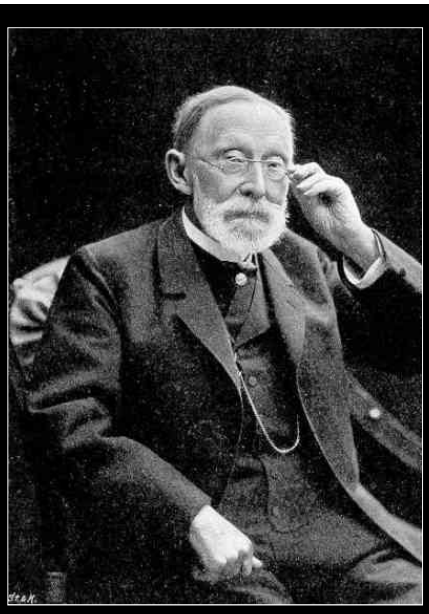
Psychosocial Domain	P Value
• Higher *empathy* scores	<0.0001
• Higher *tolerance of ambiguity*	<0.0001
• Higher *emotional appraisal*	<0.0001
• Lower indicators of *burnout*	<0.0001
• Higher scores on a measure of *wisdom*	<0.0001
• Higher scores in *visual-spatial thinking*	0.02

* Analyzed by multivariate statistical model



Antony Fauci majored in classics at Holy Cross…

… and so did Bernard Lawn at the University of Maine



Virchow spoke seven languages; read Latin, Greek, Arabic and Hebrew;
and published more works in anthropology and archeology than medicine itself

ECLECTICISM

ON BEING A DOCTOR

Curiosity

About 15 years ago, when I was dean of students at the University of California, Davis, School of Medicine, yet another of the periodic paroxysms of "holism" in medicine occurred. Several important politicians called to tell me that, in their opinion—which presumably reflected that of their constituents—medical students, by selection or by their isolation by the medical curriculum, were insensitive, mechanistic, technocratic, inhumane brutes. The solution, these politicians insisted, was the intercalation of humanities courses into an already crowded curriculum.

I had several concerns about this. The first was that the addition of required courses in literature, drama, sociology, music, and art might actually limit students' opportunities to read, go to the theater, be with friends and family, and attend a symphony or museum. Even if one argues that students would not have done these things anyway—possessed as they were by the intricacies of glucose metabolism—the addition of these courses would cut down on contemplative time, volunteerism in free clinics, hobbies, and sleep. Second, I wondered what evidence supported the idea that being well versed in the humanities made one more humane. I was encouraged in my skepticism by the knowledge that perhaps the most broadly educated of physicians at the beginning of this century practiced in Germany. Moreover, I could not understand why science—a most human pursuit, the exercise of which is one of the defining characteristics of our species—should make students "inhumane." I decided to do a "scientific" study of the effects of humanities courses on humaneness in medical students.

Several colleagues and I read more than 10 years' worth of the subjective descriptions of performance of third- and fourth-year medical students on their clinical clerkships. We looked for adjectives suggesting humane behavior: "caring," "warm," "concerned," "good with patients and families." Each of these descriptors got "nice" points. Words like "callous," "abrupt," and "arrogant" got subtraction points. Then we compared "nice" points to the total number of units taken in the humanities in the student's premedical career.

What a shock: We found a direct correlation. I still thought it did not make sense. These were adults, after all. Was fundamental character, which is usually well formed by adolescence, changed by a class? I did what confused scientists have done for centuries to nonconforming data: I reanalyzed them. This time I ran a correlation between "nice" points and premedical units taken in science. Surprise again! Another direct correlation. Those students who had taken the most units in science had the highest number of "nice" points. In fact, in this idiot-driven experiment, "niceness" correlated directly with the total number of course units taken, regardless of the category.

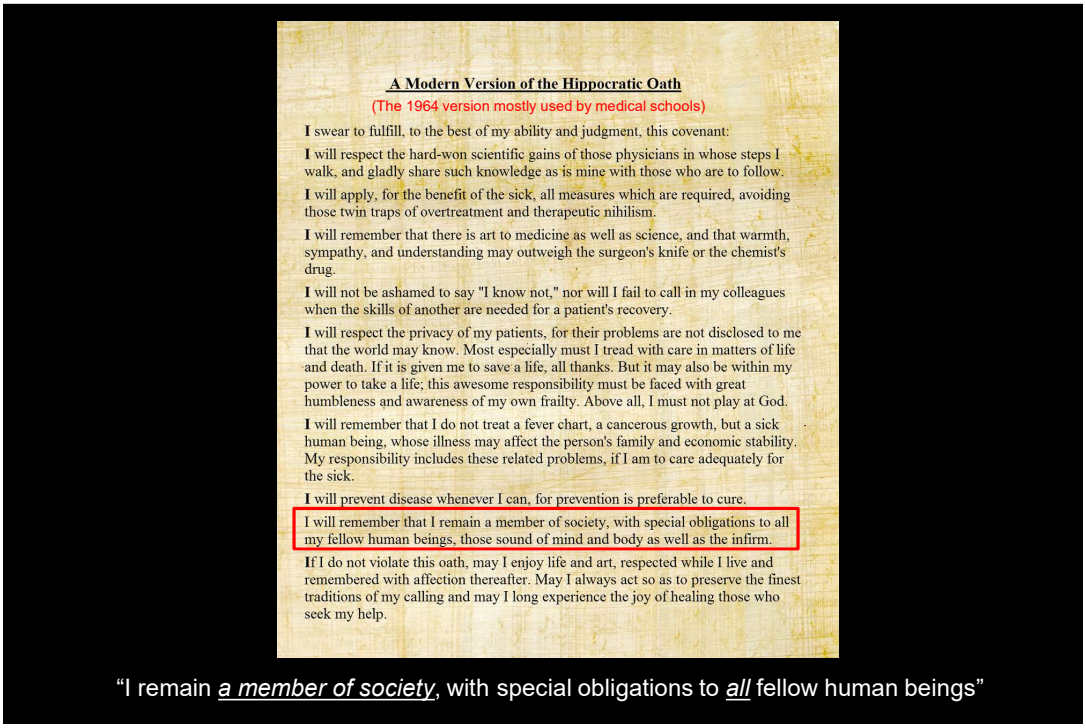
What did it all mean? I did not know, but I wondered: What is kindness, as perceived by patients? Perhaps it is curiosity: "How are you? Who are you? How can I help you? Tell me more. Isn't that interesting?" And patients say, "He asked me a lot of questions"; "She really seemed to care about what was going on with me." Is curiosity the same, in some cases, as caring?

Curiosity is the urge to investigate, to discover. It can be seen in all small mammals; just watch a kitten explore a paper bag. Evidently, although curiosity can be dangerous ("What's down this dark hole, I wonder? What does this bright pill taste like? What's the funny-looking black animal with the white stripe down its back?"), it also has a redemptive adaptive function that exceeds the risks. Otherwise, puppies and small children would be wiped out. Curiosity is how we learn about our world.

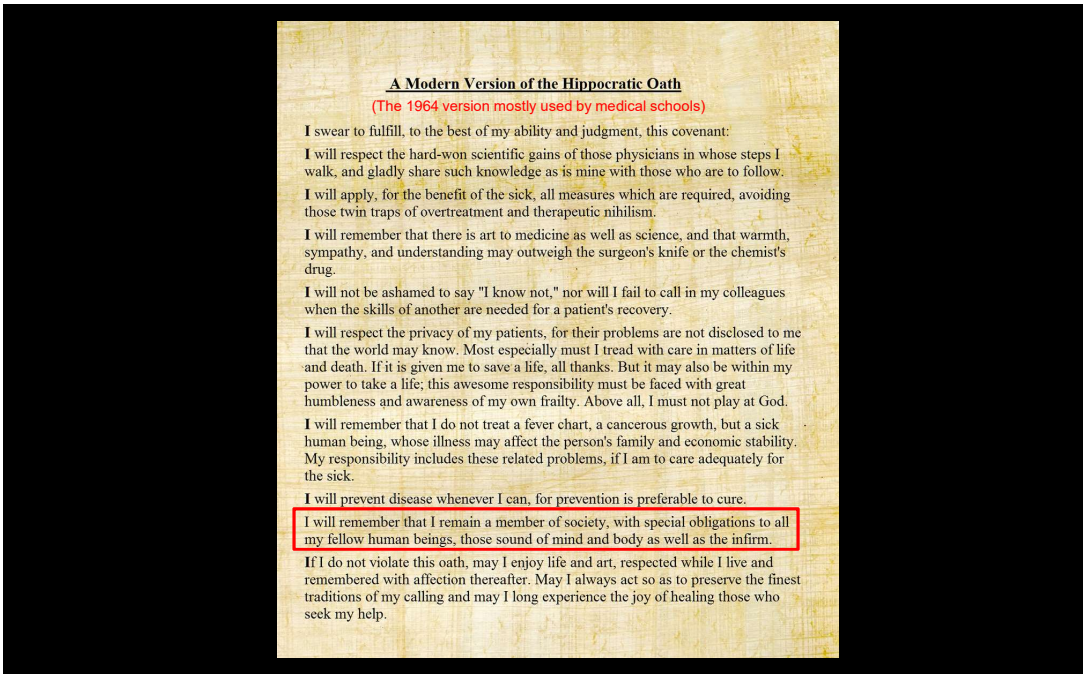
Dr. Erich Loewy, in an unpublished paper, points out that curiosity, this primal "wonderment" that stimulates exploration, engages both imagination (conceiving the alternative explanations of new phenomena) and intelligence (mapping out the best way to determine which explanation is likeliest). Both imagination and intelligence are integral to humanities, science, and the synthesis of the two, which is clinical medicine. Rather than stating that the study of humanities makes one humane, I propose that humane people are curious and therefore choose to explore the humanities as well as the sciences.

An endowed lectureship at my medical school allows us to invite Nobel Prize–winning scientists to visit and lecture for several days. What impressed me most about my conversations with these luminaries was the extraordinarily broad range of their interests, their enthusiasm, and their thought patterns. One thinks science has a sequential and controlled pattern of logical ideas, firmly grounded in antecedent principles and constantly cleansed of intellectual debris by the abrasion of skepticism. Listening to Nobel laureates in medicine was revela-

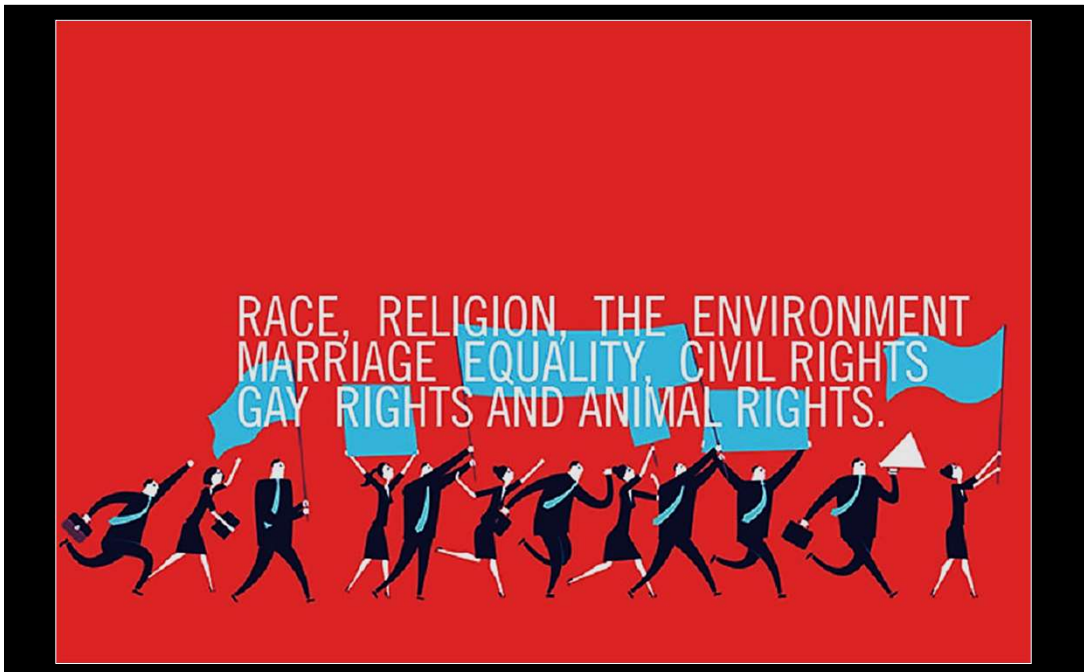
This paper is also available at http://www.acponline.org.



"I remain *a member of society*, with special obligations to *all* fellow human beings"



Medicine comes with social responsibilities



Advocacy, Activism, Legislation

Humanity's Greatest Existential Threat...

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PRESS RELEASE

SECRETARY-GENERAL » STATEMENTS AND MESSAGES

SG/SM/20267
22 SEPTEMBER 2020

COVID-19 Dress Rehearsal for World of Challenges to Come, Secretary-General Tells General Assembly

World Cannot Afford 'Great Fracture' between Two Largest Economies, He Warns

Following is UN Secretary-General António Guterres' address to the General Assembly, in New York today:

In a world turned upside down, this General Assembly Hall is among the strangest sights of all. The COVID-19 pandemic has changed our annual meeting beyond recognition. But, it has made it more important than ever.

In January, I addressed the General Assembly and identified "four horsemen" in our midst — four threats that endanger our common future. First, the highest global geostrategic tensions in years. Second, an existential climate crisis. Third, deep and growing global mistrust. And fourth, the dark side of the digital world.

EDITORIAL

Call for Emergency Action to Limit Global Temperature Increases, Restore Biodiversity, and Protect Health

The United Nations General Assembly in September 2021 will bring countries together at a critical time for marshalling collective action to tackle the global environmental crisis. They will meet again at the biodiversity summit in Kunming, China, and at the climate conference (COP26) in Glasgow, United Kingdom. Ahead of these pivotal meetings, we — the editors of health journals worldwide — call for urgent action to keep average global temperature increases below 1.5° C, halt the destruction of nature, and protect health.

Health is already being harmed by global temperature increases and the destruction of the natural world, a state of affairs health professionals have been bringing attention to for decades.[1] The science is unequivocal: a global increase of 1.5° C above the pre-industrial average and the continued loss of biodiversity risk catastrophic harm to health that will be impossible to reverse.[2,3] Despite the world's necessary preoccupation with Covid-19, we cannot wait for the pandemic to pass to rapidly reduce emissions.

Reflecting the severity of the moment, this editorial appears in health journals across the world. We are united in recognizing that only fundamental and equitable changes to societies will reverse our current trajectory.

The risks to health of increases above 1.5° C are now well established.[1] Indeed, no temperature rise is "safe." In the past 20 years, heat-related mortality among people over 65 years of age has increased by more than 50%.[4] Higher temperatures have brought increased dehydration and renal function loss, dermatological malignancies, tropical infections, adverse mental health outcomes, pregnancy complications, allergies, and cardiovascular and pulmonary morbidity and mortality.[5,6] Harms disproportionately affect the most vulnerable, including children, older populations, ethnic minorities, poorer communities, and those with underlying health problems.[2,4]

Global heating is also contributing to the decline in global yield potential for major crops, which has fallen by 1.8 to 5.6% since 1981; this decline, together with the effects of extreme weather and soil depletion, is hampering efforts to reduce undernutrition.[4] Thriving ecosystems are essential to human health, and the widespread destruction of nature, including habitats and species, is eroding water and food security and increasing the chance of pandemics.[3,7,8]

The consequences of the environmental crisis fall disproportionately on those countries and communities that have contributed least to the problem and are least able to mitigate the harms. Yet no country, no matter how wealthy, can shield itself from these impacts. Allowing the consequences to fall disproportionately on the most vulnerable will breed more conflict, food insecurity, forced displacement, and zoonotic disease — with severe implications for all countries and communities. As with the Covid-19 pandemic, we are globally as strong as our weakest member.

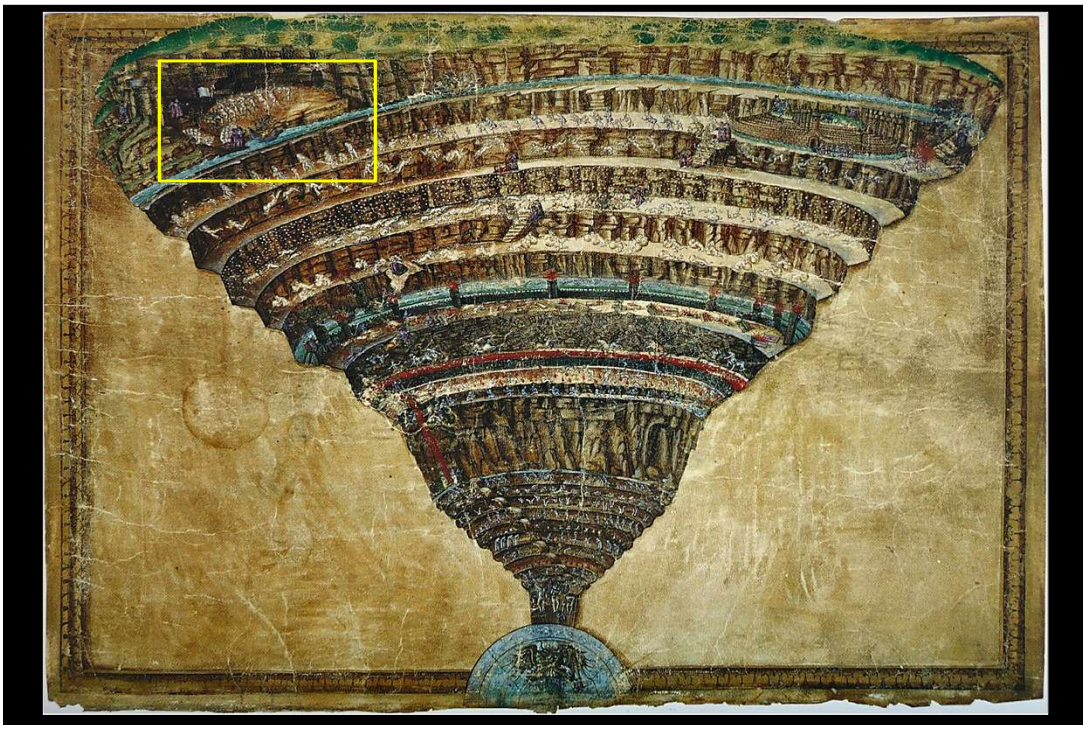
Rises above 1.5° C increase the chance of reaching tipping points in natural systems that could lock the world into an acutely unstable state. This would critically impair our ability to mitigate harms and to prevent catastrophic, runaway environmental change.[9,10]

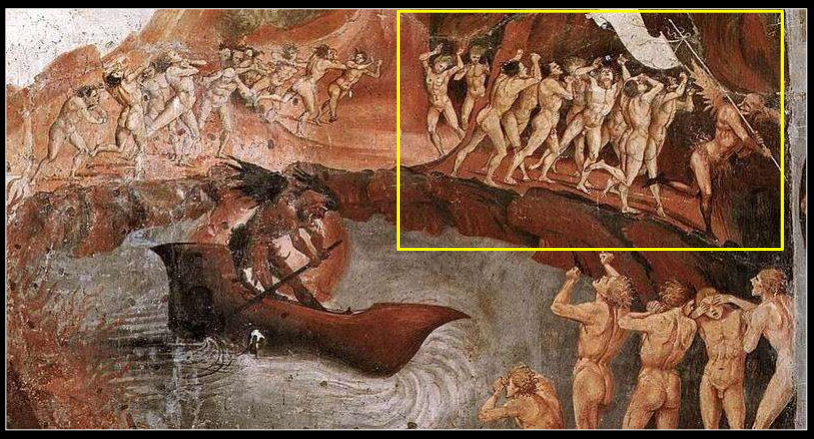
GLOBAL TARGETS ARE NOT ENOUGH

Encouragingly, many governments, financial institutions, and businesses are setting targets to reach net-zero emissions, including targets for 2030. The cost of renewable energy is dropping rapidly. Many countries are aiming to protect at least 30% of the world's land and oceans by 2030.[11]

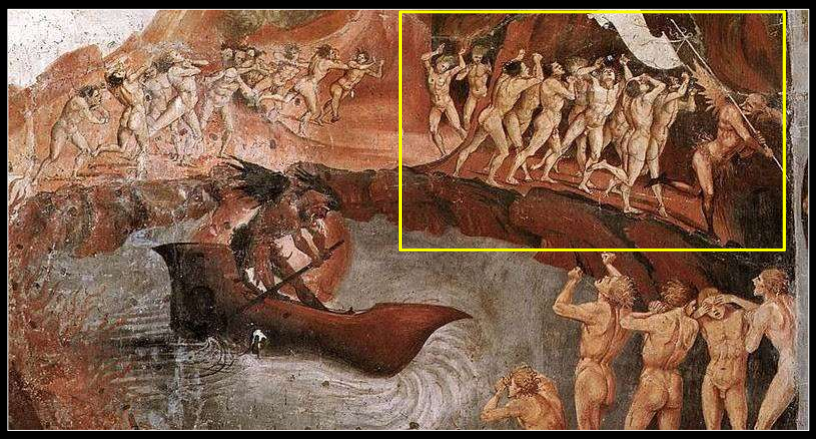
Signed by the Editors-in-Chief of 19 major and international health journals, and thus published simultaneously on all other journals...


INDIFFERENZA

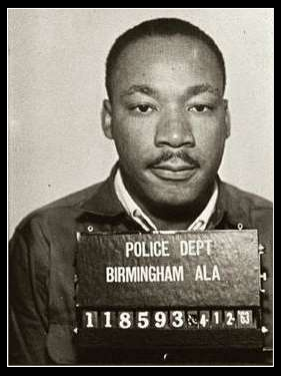




The *Ante-Inferno*

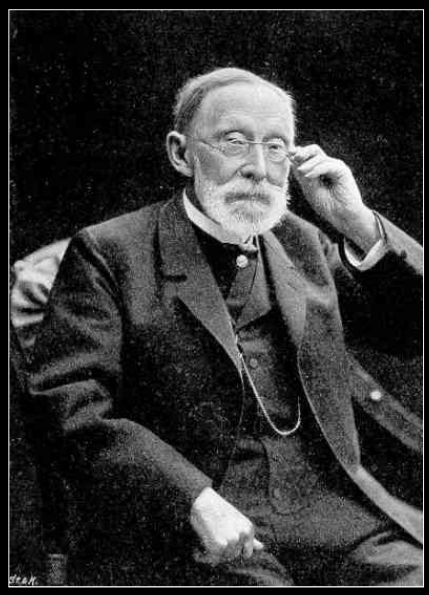


Indifference in times of challenge and controversy is akin to complicity

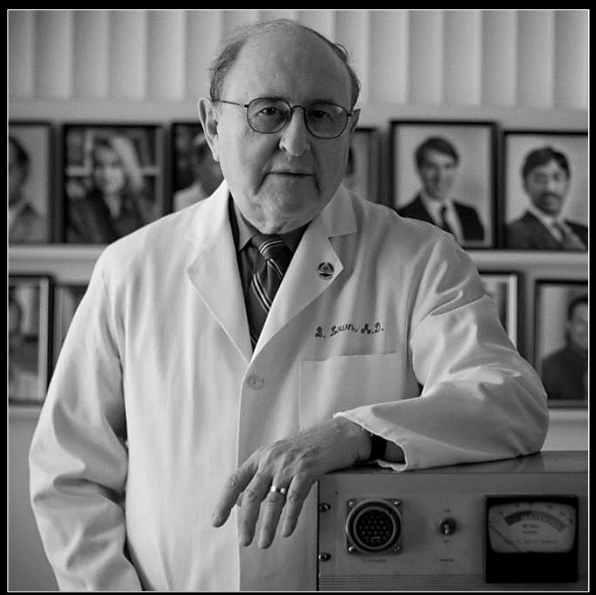


"The ultimate measure of a man is not where he stands in moments of comfort and convenience, but where he stands at times of challenge and controversy."

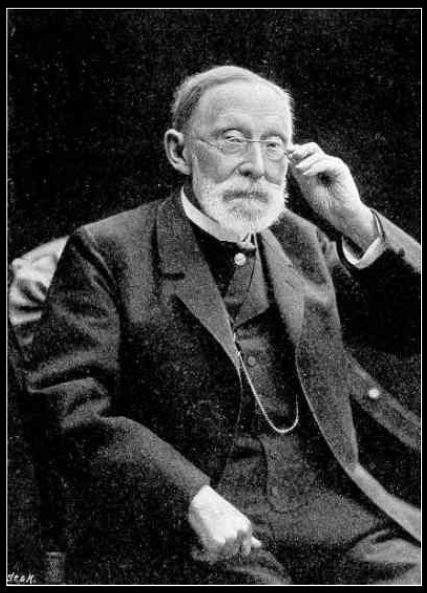
(Martin Luther King)



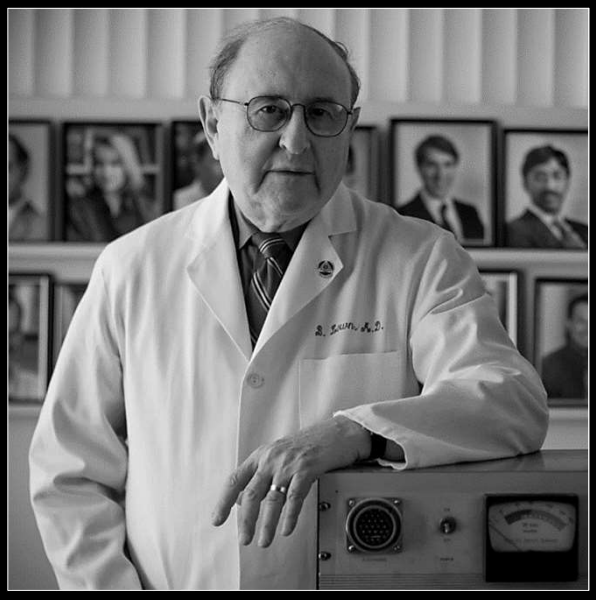
Rudolf Virchow



Bernard Lown



Rudolf Virchow (1821-1902)



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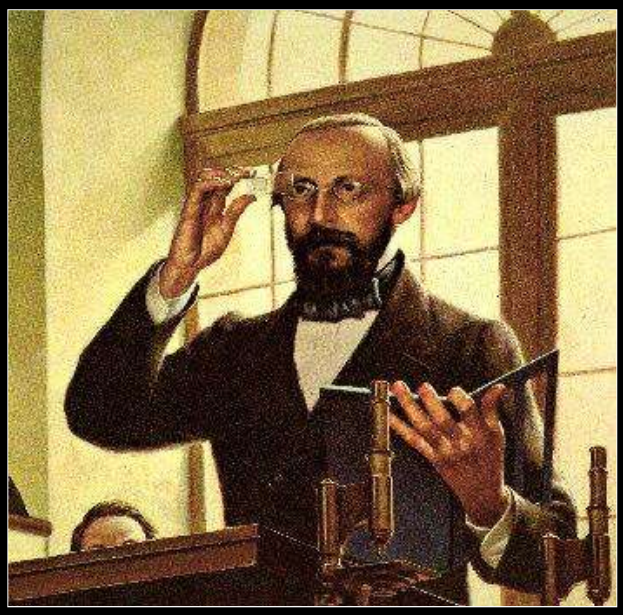
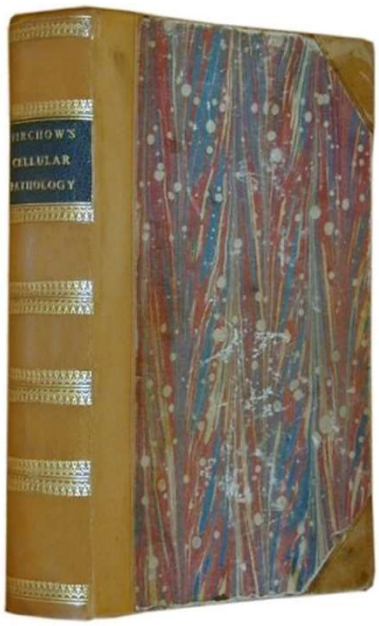


Rudolf Ludwig Carl Virchow (1821-1902)

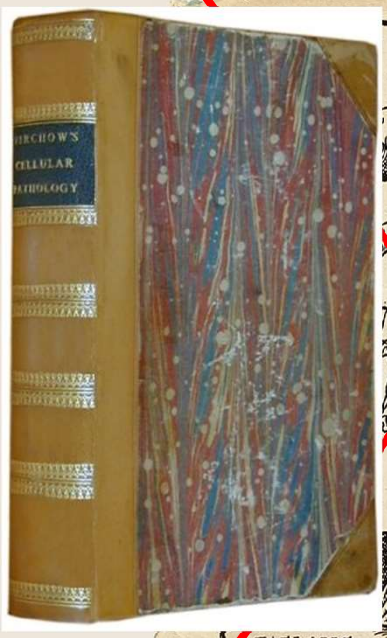


Cellular Pathology (1858)

"Omnis cellula e cellula"

"All cells come from other cells"

- There is no such a thing as *spontaneous generation*
- ***Changes in cells account for diseases in organs…***



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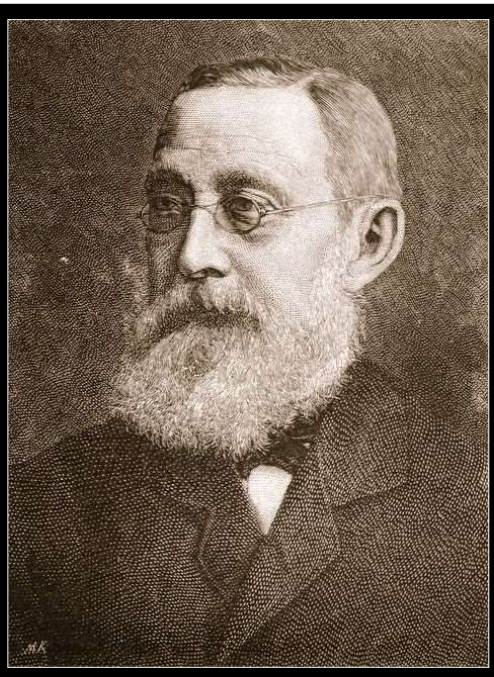

Rudolf Virchow (1821-1902)

1902

- Only child of poor farmers in a conservative community.
- Might have even had Polish blood, hence an *outsider*...
- Dad is often in financial trouble.
- Yet, Virchow is brilliant.
- By the time he's 13 he has already mastered Latin.
- Graduates head of his class in 1839.
- The title of his dissertation says it all:

"A Life Filled with Toil and Work Is No Burden, but a Blessing!"

Wohngebäude des medizinisch-chirurgischen Friedrich-Wilhelms-Instituts
Mittelbau und südlicher Flügel. Ansicht von der Straßenseite.

- From 1839 till 1843 studies medicine at the *Friedrich-Wilhelms-Instituts*, a military section of the University of Berlin dedicated to the training of medical officers.
- Tuition is free and teachers are excellent, including his mentor Johannes Mueller...

- Yet curriculum is daunting.
- In a letter to his father, 19-year-old Virchow writes:

  "…so it goes unceasingly every day from 6 AM to 11PM except Sunday, and how rapidly days and weeks fly you can see for yourselves. One becomes so tired that in the evening he sets his eyes toward the bed eagerly, from which he rises in the morning as tired as if he had slept in a half lethargy."
- Still, he finds the time to attend lectures on logic, history, and Arabic poetry.
- He also learns Greek and Hebrew, and soon becomes proficient in French, Dutch and Arabic (the previous summer he had taught himself Italian.)
- And he gets interested in politics, archeology and anthropology...

- After two years in Berlin he writes home to his father that his aim is to acquire "no less than a universal knowledge of nature from the God-head down to the stone."
- The father accuses him of being arrogant.
- Virchow replies:
- "…You say that I am selfish. That is possible. But you also accuse me of having an overweening opinion of myself, and that is *far* from being true."
- "…Real knowledge is conscious of its ignorance; how painfully do I feel the gaps in my knowledge! It is for this reason that I don't stand still in any branch of science."

- By this time, Virchow is an energetic 5’ 6” fellow, with blondish thin hair and a serious-looking face.

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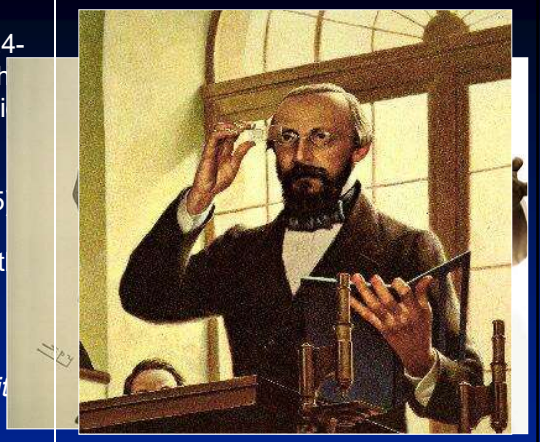
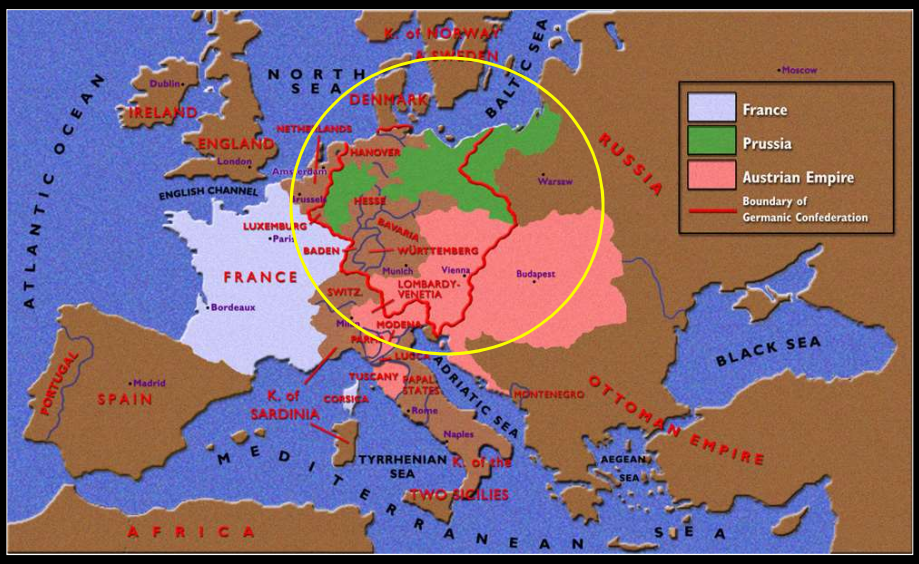
- Later in life he will resemble Yoda…

- Yet, within 3 years out of medical school, 24-year old Yoda makes (and *names*) two of th
- By this time, Virchow is an energetic 5’ 6” fellow, with blondish thin hair and a serious-looking face.
- The first is the discovery of *leukemia* (1845
- Vaguely reminiscent of Jiminy Cricket.
- Later in life he will resemble Yoda…
- The same year he’s appointed to the *Charit*



three major scientific breakthroughs for whi
he is still remembered.
The second year later (1846) he describes t
true nature of clotting, coining the terms *thrombosis* and *embolism*.



Horace Vernet-Barricade rue Soufflot
[The King is forced to abdicate]

From Paris, revolt spreads to:

- Milan
- Venice
- Rome
- Vienna
- Budapest
- …and Berlin!

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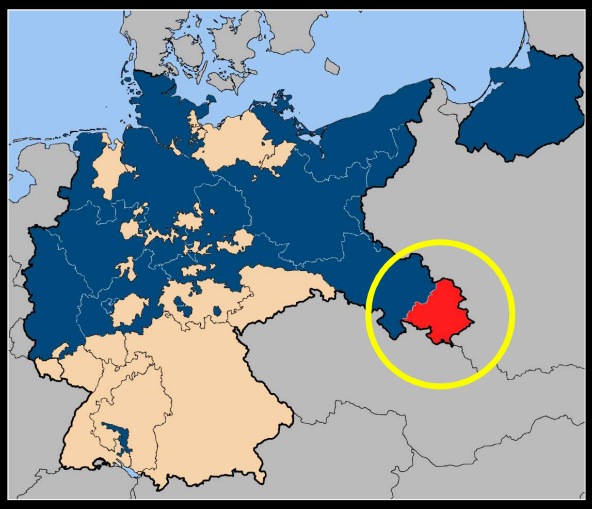
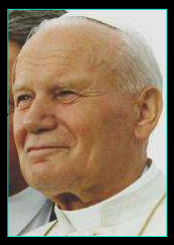


- Yet, just before the Paris revolt, the King had to deal with a severe typhus epidemic in the farflung province of Upper Silesia.



Silesia

"…from a medical standpoint the epidemic is so *interesting* that I want to see it up close. Such an opportunity will not be offered again!"

- On Feb 20, 1848, the 27-year-old firebrand is given a chance.
- Appointed medical officer on a government-sponsored expedition to upper Silesia he is to identify the causes behind typhus in local weavers.
- Virchow spends 3 weeks there, studying not only the medical aspects of the epidemic but also the *environmental* conditions that caused it.
- The report he publishes in the *Archiv* is a government indictment, even though Virchow is a full-time government employee at Charite'.

- Virchow starts with a discussion of the racial origin of the people afflicted.
- He then reviews the history of Silesia, torn between Poland, Germany and Bohemia, thus resulting in a mixed and poor population.

  "…to blame this epidemic on the Polish nation, on that high spirited people capable of the greatest sacrifices, would be a slanderous injustice... one dare not forget the conditions that made them groan beneath the weight of their burden."

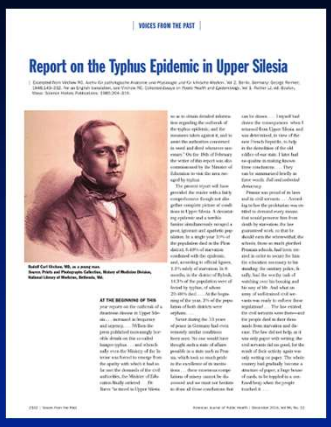
"…people here meet death with pleasure, since it releases them from a miserable existence and replace it with heavenly joys."

"...when help finally came to these poor folks, there were some Germans who feared they were actually being *pampered*. When those who had nothing to eat, absolutely nothing, were given a daily pound of flour there was talk of pampering!"

- He returns to Berlin eight days before the uprising, and offers a simple solution to the Silesian crisis:

"Democracy, Education, Freedom and Prosperity!"

- Then he spells out his program:
  - ✓ Tax the rich rather than the poor
  - ✓ Separate church and state
  - ✓ Build roads
  - ✓ Encourage cooperatives
  - ✓ Educate the populace
  - ✓ Let the Silesian Poles speak Polish



VOICES FROM THE PAST

Report on the Typhus Epidemic in Upper Silesia

- He concludes by saying:

"Medicine, *as a social science,* has the duty to recognize these problems as its own, *and to offer solutions*."

"The logical answer to how this may be prevented in the future, is simple: *culture* with its daughters, freedom and prosperity…

"Without our notice, medicine has carried us into the *social* sphere, there to meet up with the great problems of our time. Let us all be aware that we are *not* talking here of treating patients with medications or adjusting their home environment. No, we are dealing with an *entire culture of a million and a half of our fellow citizens who have been physically and morally depraved!* Palliative measures will fail.

Only *radical* action gives hope of success."

In fact, the word "radikal" returns frequently (and ominously) in his report.

- Virchow even argues that given Germany's incompetence, the Silesians should be allowed to join a great Slavic state.
- "And if their lethargy can't be dispelled by anything but war, let them fight!"

  "…I deeply regret that fire and sword must rage through a nation to bring the necessary social changes, but *mankind has not yet reached that stage in evolution wherein all its dealings are ruled by reason*."

Rudolf Virchow, 1848

- Pierre Cabanis, a French medical philosopher and personal friend of Benjamin Franklin, had already written that, "*Sickness is due to societal blunders."*

- Pierre Cabanis, a French medical philosopher and personal friend of Benjamin Franklin, had already written that, "*Sickness is due to societal blunders.*"
- Virchow rekindles that idea, and for much of his career will try to demonstrate a relation between diseases and social injustice.

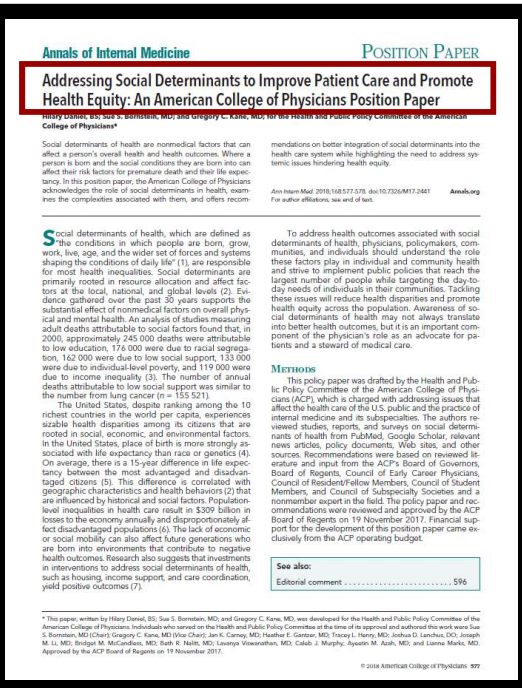
- He recurrently articulates his belief that unequal distribution of wealth is the main reason for disease, and that physicians ***must*** do all in their power to abolish the social conditions that cause disease.

"Disease is a reflection of societal failures"

"Physicians are the natural attorneys of the poor"

"Social problems should be their responsibility"

"Medicine is a social science"



Annals of Internal Medicine

POSITION PAPER

Addressing Social Determinants to Improve Patient Care and Promote Health Equity: An American College of Physicians Position Paper

Hilary Daniel, BS; Sue S. Bornstein, MD; and Gregory C. Kane, MD; for the Health and Public Policy Committee of the American College of Physicians*

Social determinants of health are nonmedical factors that can affect a person's overall health and health outcomes. Where a person is born and the social conditions they are born into can affect their risk factors for premature death and their life expectancy. In this position paper, the American College of Physicians acknowledges the role of social determinants in health, examines the complexities associated with them, and offers recommendations on better integration of social determinants into the health care system while highlighting the need to address systemic issues hindering health equity.

Ann Intern Med. 2018;168:577-578. doi:10.7326/M17-2441 **Annals.org**
For author affiliations, see end of text.

Social determinants of health, which are defined as "the conditions in which people are born, grow, work, live, age, and the wider set of forces and systems shaping the conditions of daily life" (1), are responsible for most health inequalities. Social determinants are primarily rooted in resource allocation and affect factors at the local, national, and global levels (2). Evidence gathered over the past 30 years supports the substantial effect of nonmedical factors on overall physical and mental health. An analysis of studies measuring adult deaths attributable to social factors found that, in 2000, approximately 245 000 deaths were attributable to low education, 176 000 were due to racial segregation, 162 000 were due to low social support, 133 000 were due to individual-level poverty, and 119 000 were due to income inequality (3). The number of annual deaths attributable to low social support was similar to the number from lung cancer ($n = 155\,521$).

The United States, despite ranking among the 10 richest countries in the world per capita, experiences sizable health disparities among its citizens that are rooted in social, economic, and environmental factors. In the United States, place of birth is more strongly associated with life expectancy than race or genetics (4). On average, there is a 15-year difference in life expectancy between the most advantaged and disadvantaged citizens (5). This difference is correlated with geographic characteristics and health behaviors (2) that are influenced by historical and social factors. Population-level inequalities in health care result in $309 billion in losses to the economy annually and disproportionately affect disadvantaged populations (6). The lack of economic or social mobility can also affect future generations who are born into environments that contribute to negative health outcomes. Research also suggests that investments in interventions to address social determinants of health, such as housing, income support, and care coordination, yield positive outcomes (7).

To address health outcomes associated with social determinants of health, physicians, policymakers, communities, and individuals should understand the role these factors play in individual and community health and strive to implement public policies that reach the largest number of people while targeting the day-to-day needs of individuals in their communities. Tackling these issues will reduce health disparities and promote health equity across the population. Awareness of social determinants of health may not always translate into better health outcomes, but it is an important component of the physician's role as an advocate for patients and a steward of medical care.

Methods

This policy paper was drafted by the Health and Public Policy Committee of the American College of Physicians (ACP), which is charged with addressing issues that affect the health care of the U.S. public and the practice of internal medicine and its subspecialties. The authors reviewed studies, reports, and surveys on social determinants of health from PubMed, Google Scholar, relevant news articles, policy documents, Web sites, and other sources. Recommendations were based on reviewed literature and input from the ACP's Board of Governors, Board of Regents, Council of Early Career Physicians, Council of Resident/Fellow Members, Council of Student Members, and Council of Subspecialty Societies and a nonmember expert in the field. The policy paper and recommendations were reviewed and approved by the ACP Board of Regents on 19 November 2017. Financial support for the development of this position paper came exclusively from the ACP operating budget.

See also:
Editorial comment 596

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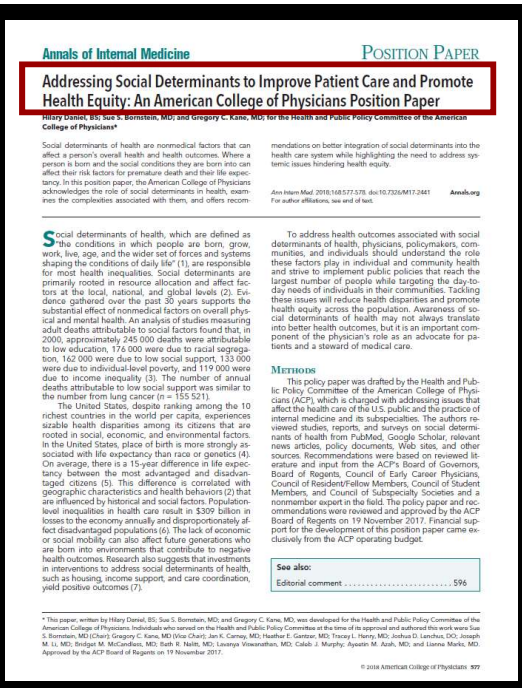
Social determinants of health account for 80 percent of health outcomes



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"Disease is a reflection of societal failure"

- Virchow concludes his report by saying that: “Every individual has the right of existence and health, and the state is responsible for ensuring it."
- This reflects Mazzini’s belief that we are on earth to *improve* ourselves, and that the only function of government is to provide us with the tools: *education and healthcare*.
- Hence, Virchow becomes increasingly aware that the stroke of a legislative pen can do much more for the common good than all microscopes and scalpels of this world.
- So, in 1848 he enters politics with a simple battle cry:

“Improvements in medicine will eventually prolong human life...

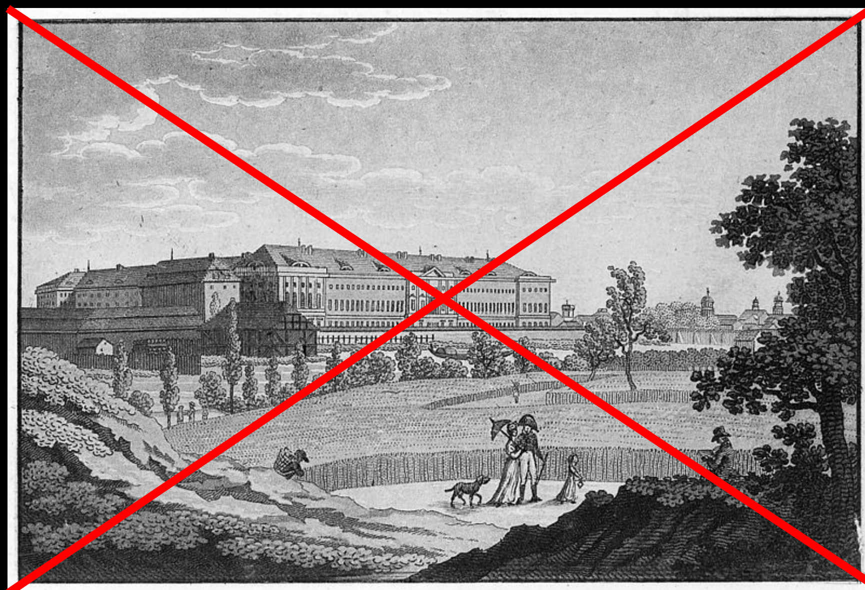
...but improvements of social conditions can do it faster and better!”

Märzrevolution - 19 März 1848, Berlin

- Virchow builds and mans barricades. He also gives impromptu speeches to large audiences of revolutionaries, thus discovering he is a *leader*.

He is eventually elected to the new Prussian Parliament...

- But being too young he can't take his seat...
- And so he founds a journal called *Medical Reform (Die Medizinische Reform)*, that becomes his bully pulpit.
- He fills it with his scientific and political ideas.
- He particularly loves to insult conservative authorities.
- But he also makes fun of the king, which infuriates royalists.
- And in a community of religious orthodoxy, he boasts about being agnostic.
- Hence, he self-combusts...



In April 1849 he is fired from his position at the *Charite' Hospital* of Berlin

Montag №. 1. den 10. Juli.

Berlin. 1848.

Die medicinische Reform.

Eine Wochenschrift

herausgegeben von

R. Virchow und R. Leubuscher.

Was die „medicinische Reform" will.

And in June1849 *The Medical Reform* is forced to suspends publication

- Students manage to get him reappointed to the *Charite*', but with neither board nor lodging plus the proviso that he signs the following statement:

  "I freely pledge that I will not give my political convictions, of whatever nature they may be, the remotest form of outward expression. This is particularly true of my relation with the Charite', its employees and physicians, and of the lectures I give in the morgue."

- Eventually, he accepts a chair of Pathology from the University of Wurzburg and leaves for Bavaria.

- Before leaving, he writes a letter to his mother...

- "…during time of great weakness in morale, when it seemed that all initiative had been lost, *I regarded it as a civic duty to place myself in the forefront of the agitation*.

- The King shall have *no will other than the will of the people*. Special privilege and class distinction *must* disappear. The rights of all will be equitable and we shall be a united people in which all men are the same before the law…

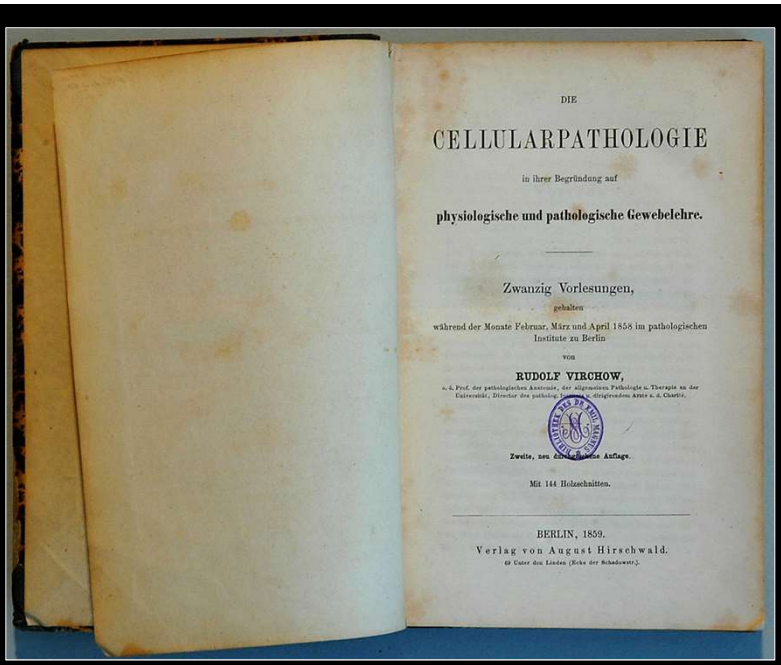
- If we achieve this, *then the cultural level of the people must be raised*… if people are educated and free, then they will recognize their special needs, know how best to meet them, and achieve some measure of happiness."

  "That is the goal of our present endeavor. Liberty and justice for all!"

Rudolf and Röschen (Rose)
[August 24, 1850]

On December 2,1849 he goes to the University of Wurzburg in Bavaria

He will stay there for seven productive years...



DIE

CELLULARPATHOLOGIE

in ihrer Begründung auf

physiologische und pathologische Gewebelehre.

Zwanzig Vorlesungen,

gehalten

während der Monate Februar, März und April 1858 im pathologischen Institute zu Berlin

von

RUDOLF VIRCHOW,

Zweite, neu durchgesehene Auflage.

Mit 144 Holzschnitten.

BERLIN, 1859.

Verlag von August Hirschwald.

“Die Cellularpathologie in Ihrer Begründung auf Physiologische und Pathologische Gewebelehre”

‘The Pope of European Medicine’

Goes back to Berlin with a vengeance...

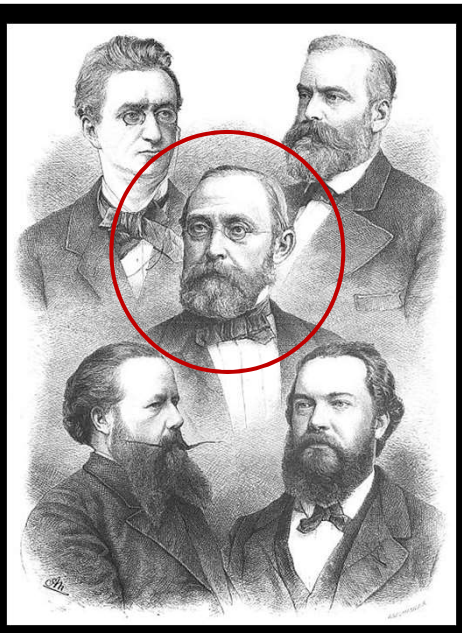
In 1859 he’s appointed to City Council

[A position he’ll keep until his death]

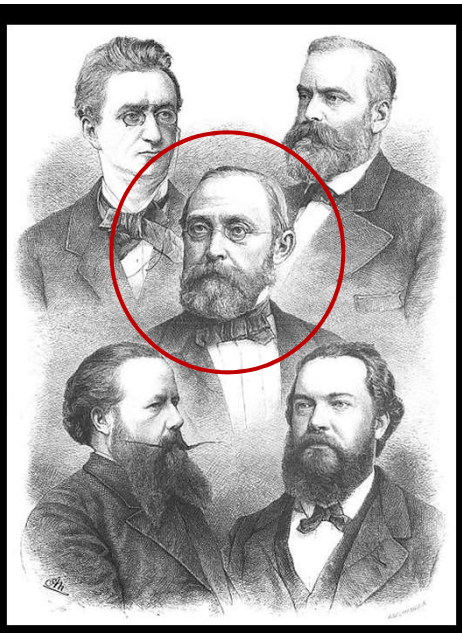
Immediately after he’s elected to the Prussian Parliament

And finally in 1880 he's elected to the Reichstag

He will stay there for 13 years and make Berlin a model city for hygiene & health



In 1861 he even co-founds the German Progressive Party
(*Deutsche Fortschrittspartei*)



[An anti-Bismarck liberal party and the first modern political party of Germany]

Otto Von Bismark 1st Chancellor of Germany
(21 March 1871 – 20 March 1890)

Otto Von Bismark 1st Chancellor of Germany
(21 March 1871 – 20 March 1890)

"Politics is not an exact science...

I fully recognize the prominence of the speaker in his field of expertise, [but] since [he] has amateurishly stepped out of his field and into *mine*, I must say that his politics strikes me as *lightweight*".

Otto Von Bismark 1st Chancellor of Germany
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"Physician, stay in your lane!"

Politics is not your lane...

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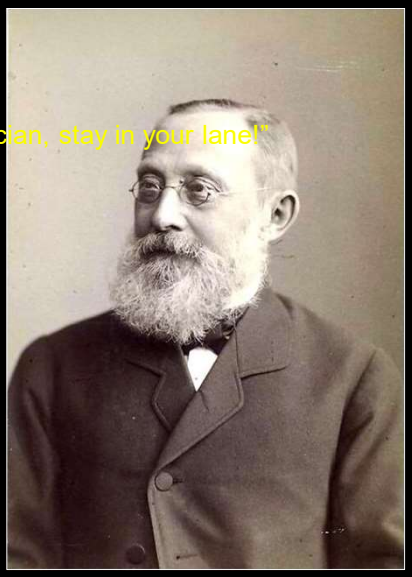

Otto Von Bismark 1st Chancellor of Germany
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In fact, an ***ethical*** right whose realization has to be pursued politically

Germany will eventually be the second country in Europe to grant Universal Health Care

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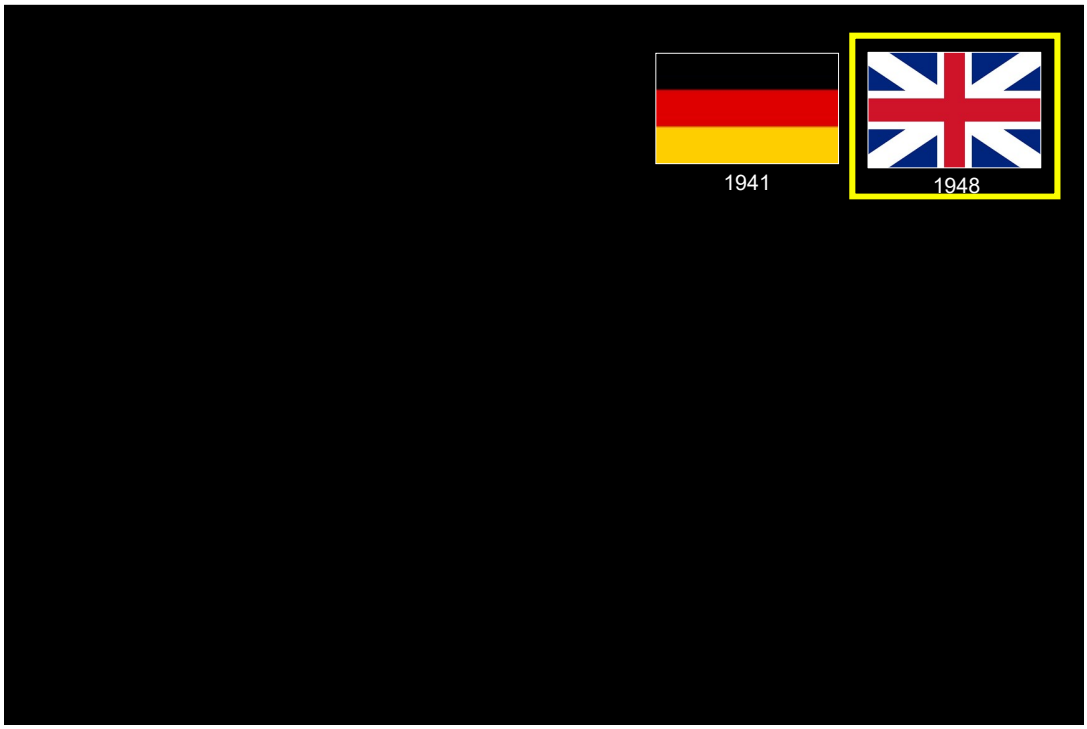
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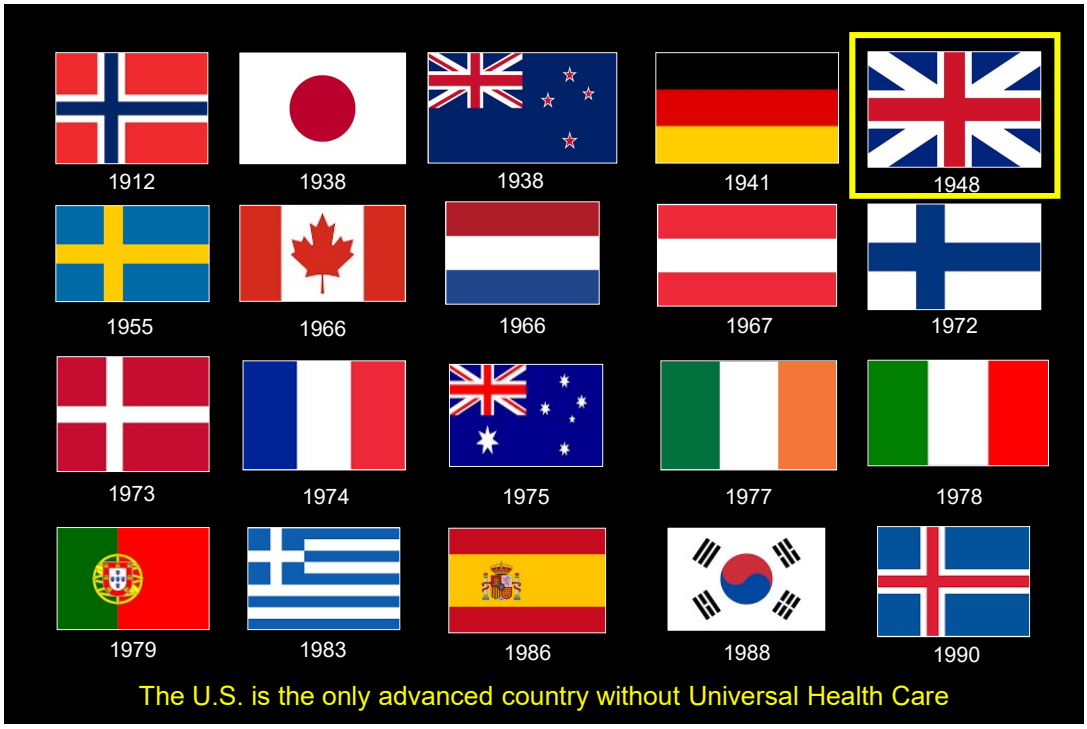
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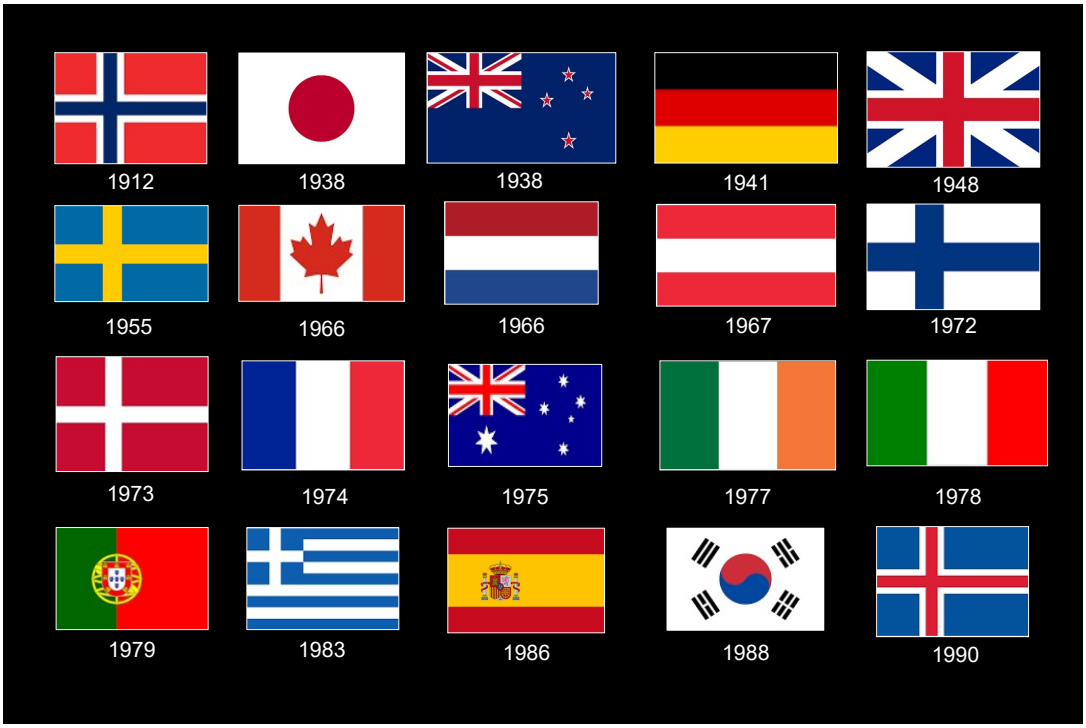
The U.S. is the only advanced country without Universal Health Care

Bill O'Reilly: Universal Healthcare Is Communist (Oct 23, 2013)



United States	**$11,072**
Switzerland	$7,732
Germany	$6,647
Netherlands	$5,765
Canada	$5,418
France	$5,376
Australia	$5,187
Japan	$4,823
United Kingdom	$4,653
Finland	$4,578
New Zealand	$4,204
Spain	$3,617
Singapore	$2,824

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Japan	84.6
Switzerland	83.8
Singapore	83.6
Spain	83.6
Australia	83.4
France	82.7
Canada	82.4
Netherlands	82.3
New Zealand	82.3
Finland	81.9
Germany	81.3
United Kingdom	81.3
United States	**78.9**

Two thirds of all American bankruptcies are caused by medical bills

SPECIAL ARTICLES

Rudolf Ludwig Karl Virchow, Where Are You Now That We Need You?

LEON EISENBERG, M.D.

If an excursion into medical history requires justification, I find it best expressed in William Henry Welch's homage at the Johns Hopkins celebration of Virchow's 70th birthday in 1891:

> To appreciate the character and extent of an advance made by scientific discovery, it is necessary to know something about the ideas which have been displaced or overthrown by the discovery. The younger generation of students are in dangor of forgetting that facts which are taught to them and which seem to them the simplest and the most natural, may have cost years of patient investigation and hard controversy, and possibly have taken the place of doctrines, very different or even contradictory, which long held sway, and which seemed to other generations equally simple and natural [1].

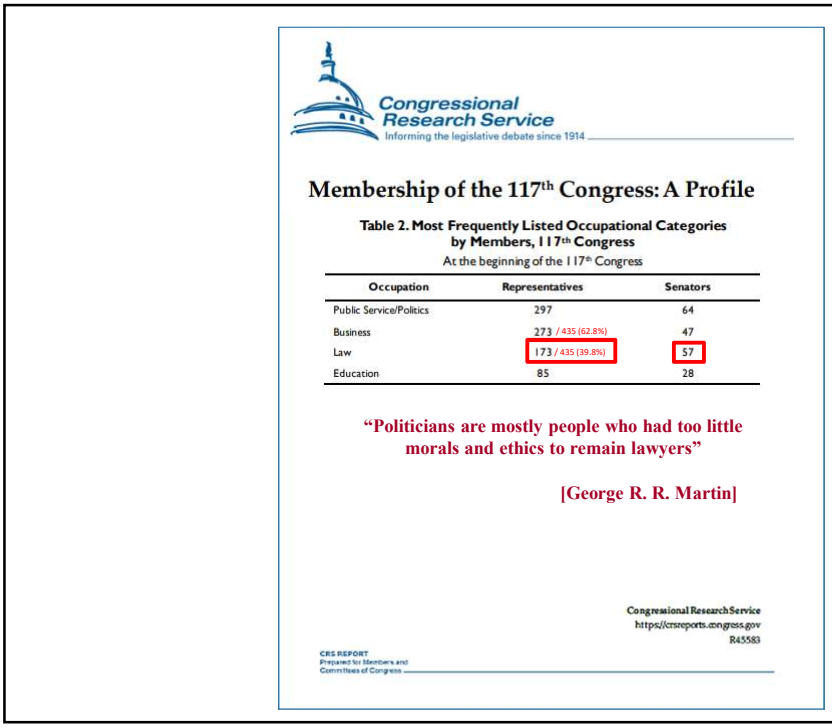
The Virchow honored by Welch and Osler [2] did not lack for enemies during his lifetime (1821 to 1902). Indeed, he almost seemed to seek them out when they opposed scientific progress or human rights. At 25, barely three years out of medical school, Virchow attacked the theories of Rokitansky, then the dominant figure in pathology [3,4]. At 27, he was an activist in the German Revolution of 1848; in consequence, he lost his state salary at the Charite, he was obliged to vacate his office, and he found it prudent to accept an invitation from Wurzburg. At 44, he earned a place on Otto von Bismarck's "enemies list." Having been elected to the Prussian Landtag (Parliament) as a member of the Progressive party, Virchow led the opposition to Bismarck's 1865 proposal for a military budget. The chancellor chose to interpret Virchow's speech as an insult to his honor and sent a formal note demanding satisfaction by a retraction or by a duel [5]. The duel did not occur; it was averted by behind-the-scenes negotiations through Bismarck's intermediaries, General Manteuffel and Count Roon, the Prussian Minister of War, who were determined that it not happen [6]. Nonetheless, Virchow received such worldwide recognition for his contributions to medical science, to anthropology, and to public health that, as a senior statesman, the physician who had manned the barricades in 1848 was offered a title of nobility. A committed democrat to the end, he refused to become "von" Virchow.

None of us can hope to match Virchow's achievements. But his courage and conviction can inspirit us to speak out in defense of values no less essential now than they were a century ago. Virchow, at one and the same time, helped to found modern biomedicine, advanced the thesis that medicine is as much a social as a biologic science, and applied the fruits of his scientific investigation to the improvement of public health. Yet, it is the irony of history that his name, if it is recalled at all, is invoked only as the father of a biomedicine that has become so blinkered that it is indifferent to the public health relevance of its own findings and excludes from its purview the social determinants of health and disease! Thus, it has seemed to me useful to provide a brief sketch of his contributions as prologue to an assessment of current health policy.

It is no exaggeration to herald Virchow as the principal architect of the foundations of scientific medicine. It was he who established the pathophysiology of thrombosis, pulmonary embolism, leukocytosis, leukemia, the mycoses, abnormal heme pigments, amyloid bodies, Echinococcus liver tumors, and trichinosis, among others. Still, even these major contributions pale

From the Department of Social Medicine and Health Policy and the Department of Psychiatry, Harvard Medical School, Boston, Massachusetts. This work was the Invited Address at the National Meeting of the Robert Wood Johnson Clinical Scholars Program, Honey-in-the-Hills, Florida, November 7, 1983. Requests for reprints should be addressed to Dr. Leon Eisenberg, Harvard Medical School, 25 Shattuck Street, Boston, Massachusetts 02115.


SOLUTION
PROBLEM



Congressional Research Service
Informing the legislative debate since 1914

Membership of the 117th Congress: A Profile

Table 2. Most Frequently Listed Occupational Categories by Members, 117th Congress

At the beginning of the 117th Congress

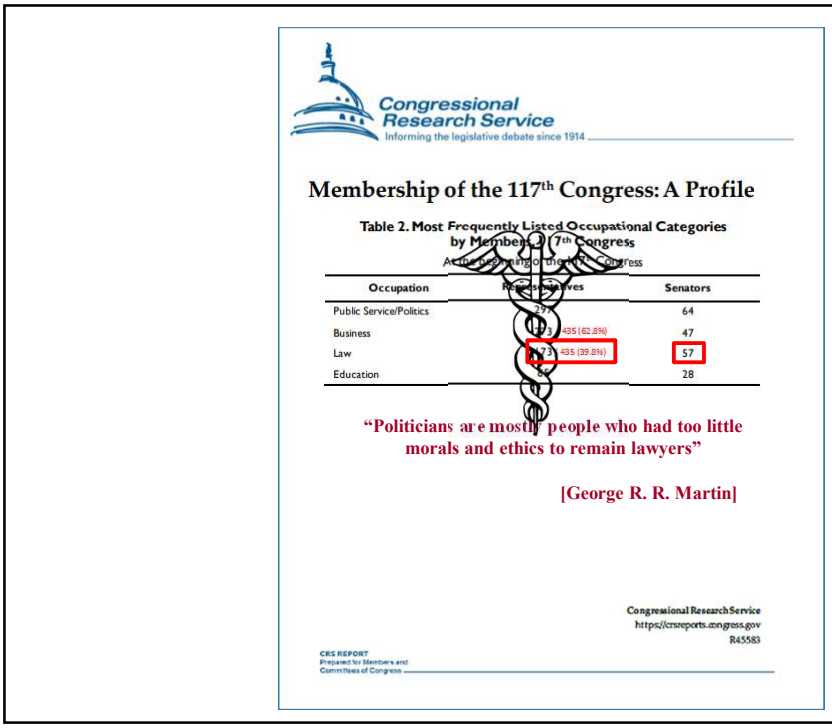
Occupation	Representatives	Senators
Public Service/Politics	297	64
Business	273 / 435 (62.8%)	47
Law	173 / 435 (39.8%)	57
Education	85	28

"Politicians are mostly people who had too little morals and ethics to remain lawyers"

[George R. R. Martin]

Congressional Research Service
https://crsreports.congress.gov
R45583

CRS REPORT
Prepared for Members and Committees of Congress



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- There are now 17 physicians in Congress, 13 in the House and 4 in the Senate (3.2%)*

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* As of March 2020, there were just over one million professionally active physicians in the United States (0.03)

Congressional Research Service
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Membership of the 117th Congress: A Profile

- There are now 17 physicians in Congress, 13 in the House and 4 in the Senate (3.2%)*
- 15/17 of these physicians are Republicans.
- 9/15 Republicans voted on January 6, 2021 not to ratify Joe Biden's election.

"Natural attorneys of the poor"

CRS REPORT
Prepared for Members and Committees of Congress

The New York Times

Nov. 6, 2020

On Masks and Clinical Trials, Rand Paul's Tweeting Is Just Plain Wrong

Scientists know masks limit the coronavirus's spread, but it's impossible for randomized trials to prove that.

Senator Rand Paul of Kentucky recently tweeted what seemed to be a striking finding from a randomized study about the use of masks in the pandemic:

"To the scolds blaming @realDonaldTrump infection on not wearing masks: the only published randomized clinical study of cloth masks shows 97% penetration of particles & higher infection rate than control. But never mind, it's all about submission …."

The randomized clinical trial that Senator Paul and others have cited as a cautionary argument against mask-wearing did seem to reach a definite conclusion. "This study is the first RCT of cloth masks, and the results caution against the use of cloth masks," its abstract proclaims.

First member of the U.S. Senate to test positive (March 22, 2020)

Kept attending Senate lunches and using the Senate gym while awaiting test results

The New York Times

What to Do About Doctors Who Push Misinformation?

They have crossed the line from free speech to medical practice — or in this case, something akin to malpractice.

And on Dec. 8, Ron Johnson, the Republican senator of Wisconsin, known for his allegiance to fringe theories, called two doctors with such beliefs to testify before his committee.

One was Ramin Oskoui, a cardiologist in Washington who said that "masks do not work" and that "social distancing doesn't work." In fact, there is indisputable scientific evidence that both are effective in preventing or limiting the spread of coronavirus.

The other was Jane M. Orient, a doctor who has cast doubt on vaccines and, like President Trump, promotes hydroxychloroquine, an antimalarial drug, to treat coronavirus. But hydroxychloroquine is considered either ineffective or possibly even harmful in this setting.

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"When doctors use the language and authority of their profession to promote false medical information, they are not simply expressing their own misguided opinions. They have also crossed the line from free speech to medical practice — or, in this case, *mal*practice.

But where is the outcry from medical leaders and various professional organizations in the face of this betrayal of public trust? Where was Stanford University when its faculty member Scott Atlas was telling Americans that they could forget face masks?"

(Richard A. Friedman, MD)

Opinion

VIEWPOINT

When Physicians Engage in Practices That Threaten the Nation's Health

Philip A. Pizzo, MD
Departments of Pediatrics and Microbiology and Immunology, Stanford University School of Medicine, Stanford, California.

David Spiegel, MD
Department of Psychiatry and Behavioral Sciences, Stanford University School of Medicine, Stanford, California.

Michelle M. Mello, JD, PhD
Department of Medicine, Stanford University School of Medicine, Stanford, California, and Stanford Law School, Stanford, California.

Multimedia

In December 2020, less than a year after severe acute respiratory syndrome coronavirus 2 was identified as the cause of the coronavirus pandemic, an extraordinary collaboration between scientists, the pharmaceutical industry, and government led to 2 highly efficacious, safe vaccines being approved by the US Food and Drug Administration to prevent coronavirus disease 2019 (COVID-19) infection.[1,2] Had the US been in its expected role as a global leader in medicine and public health, this would have been a fitting capstone of US commitment to science and how that can change the course of morbidity and mortality related to a frightening new disease.

However, a less flattering story emerged about the inadequate US response to COVID-19. A number of leaders in federal, state, and local government, guided by political exigency and recommendations from a small number of physicians and scientists who ignored or dismissed science, refused to promote sensible, effective policies such as mask wearing and social distancing. This contributed to the US having more infections and deaths than other developed nations in proportion to population size, with disproportionate effects of COVID-19 on already disadvantaged racial and socioeconomic groups.[3] In contrast, countries like Taiwan, South Korea, and New Zealand, where respect for science and truth and a collaborative relationship between public health and government leaders prevailed, were far more successful at controlling the pandemic.[3]

> [T]o take the view that respecting freedom of speech requires institutional silence when science is being subverted is to misunderstand the concept.

Among the ways in which science-based public health evidence has been dismissed in the US is the replacement of highly experienced experts advising national leaders with persons who appear to have been chosen because of their willingness to support government officials' desire to discount the significance of the pandemic. A leading example was the elevation of Scott Atlas, MD, a neuroradiologist, who left a position in academic medicine in 2012 to become a senior fellow at the Hoover Institution (a public policy think tank affiliated with Stanford University), to the White House Coronavirus Task Force. In his short tenure on the task force, Atlas disputed the need for masks; argued that many public health orders aimed at increasing social distancing could be forgone without ill effects; maintained that allowing the virus to spread naturally will not result in more deaths than other strategies; stated that young people are not harmed by the virus and cannot spread the disease; reportedly pressured the Centers for Disease Control and Prevention to issue guidance (later reversed) stating that asymptomatic individuals need not be tested[4]; and made unsupported claims about the immunity conferred by surviving infection. Nearly all public health experts were concerned that his recommendations could lead to tens of thousands (or more) of unnecessary deaths in the US alone.

History is a potent reminder of tragic circumstances when physicians damaged the public health, from promoting eugenics to participating in the human experiments that took place in Tuskegee to asserting erroneously that vaccines cause autism. It can be difficult to hold physicians accountable, especially when they are acting in policy roles in which malpractice lawsuits will not succeed. Professional self-regulation serves as the primary vehicle for accountability and is critical if trust in science and medicine is to be maintained.

To that end, action from within the medical profession is an important but underused strategy. The Hippocratic Oath binds physicians to "do no harm," an injunction that transcends individual patient-physician encounters to situations in which physicians make medical recommendations for populations. For instance, the American Medical Association's Code of Ethics states that physicians making media statements should ensure that the information they provide is accurate, appropriately conveys known risks and benefits, is "commensurate with their medical expertise" and confined to their area of expertise, and is "based on valid scientific evidence and insight gained from professional experience."[5] It "is ethically inappropriate for physicians to publicly recommend behaviors or interventions that are not scientifically well grounded."[5] These directives reflect an awareness that physicians' words are often assigned great importance, even for areas in which physicians lack expertise.

There is precedent for both medical professional societies and boards of medical licensing to take action when physicians violate their ethical responsibilities in nonclinical contexts. The Federation of State Medical Boards defines competence as possessing the requisite abilities to perform effectively within the scope of professional practice while adhering to ethical standards, and defines the practice of medicine to include using the designation "Doctor" "in the conduct of any occupation or profession pertaining to the prevention, diagnosis, or treatment of human disease or condition."[6] Accordingly, many state licensing boards and professional societies have adopted policies providing for

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A personal take on science and society

World view

By Mary T. Bassett

Tired of science being ignored? Get political

The idea that competent researchers are apolitical is false, and it costs lives.

During the COVID-19 pandemic, like many public-health experts, I have been asked to advise people to wear a mask, meet outdoors, wash their hands, keep 2 metres apart, stay home and get tested if they have symptoms, and participate in contact tracing. But researchers are expected to ignore societal structures that mean some people are less able to follow this advice. We are expected to account for individual risk factors that might explain who gets infected, who dies and how fully someone recovers, but not to imagine what public-health and health-care policies could make for better, more equitable health. It is time for researchers to change tack and step into politics.

Compared with some other countries, the United States underinvests in public health. And yet its health expenditures approach 20% of its gross domestic product, with higher per-capita health spending than any other nation. Clinical medicine glitters with technology and innovation. Perhaps that is partly why, in trying to keep up, public-health professionals tend to stress the technical nature of their field, its evidence base and its rigour. By 'staying in our lane' and out of politics and advocacy, did US researchers unwittingly help pave an open highway for COVID-19?

The presidents of the non-partisan US National Academy of Medicine and the National Academy of Sciences have publicly expressed alarm at the growing political interference in science. Working researchers' relative silence about such larger societal issues, often under the guise of professionalism, doesn't make for good science, although it might make for safer scientific careers. In the middle of a pandemic, good science identifies how to save lives.

The United States is not winning at saving lives. More than one million people globally have died from COVID-19; the United States, one of the wealthiest and most medically advanced countries, accounts for less than 5% of the world's population but for 20% of deaths. When adjusted for age, death rates are more than three times higher for Black, Latino/Latina and Native American than for white Americans (M. T. Bassett *et al. PLoS Med.*; in the press).

For health professionals, COVID-19 has revealed how epidemics are political, tracking through the fissures of society. Many health workers, some for the first time, are breaking the unspoken 'commitment to neutrality' and criticizing President Donald Trump's administration for its failures and its attacks on science. They are drawing attention to inequitable social policies, segregated neighbourhoods and inadequate labour protections as root causes of this tragedy.

A minority of researchers are working with activists on racial justice, but many avoid doing so out of worry that an 'activist' label could have negative implications for their careers. This is typically self-censorship, enforced by norms of 'professional' behaviour, but I think recent White House moves against providing racial-sensitivity training and acknowledging the impacts of racism will have a further, chilling effect. I have been cautioned more than once that my talking about racism was 'off-putting'.

> "The label 'activist' should be an honour, not a slur."

As a former health commissioner for New York City, my hope is that this new 'political awakening' will endure and transform how scientists participate in political life. The label 'activist' should be an honour, not a slur or reproach.

This is why, in April, I was thrilled to get a call from Natalia Linos, the executive director of the FXB Center for Health & Human Rights at Harvard University in Cambridge, Massachusetts – the centre that I lead. She told me that she wanted to run for a vacant congressional seat in Massachusetts. In the middle of the pandemic, she felt that the attacks on science in Washington DC and the disastrous national response required people with her skill set to step up. Although she was ultimately not selected as candidate, she is right that we need more public-health experts in politics. Some will say that scientists entering electoral races will undermine other worthy candidates with more established political networks. Although this is understandable, the presence of scientific expertise elevates the understanding of science for all candidates, along with the public more generally. This is the best way to have a seat at the table when policy is made.

Germany and Taiwan, which have had successful responses to COVID-19, have leaders who are trained in science. The United States has equivalents in leaders such as Virginia governor Ralph Northam, a former physician, who expanded access to Medicaid (the health-insurance programme for those on low incomes) once elected to office. We need more such elected officials, and we should be encouraging when those from our community take that step.

At a minimum, let's ensure that we researchers apply our expertise to political advocacy. I am not saying that expertise in one area of science makes us experts overall. Still, when we decide that issues such as structural racism, climate change or income inequality are 'outside our lane', we betray both the professional reputation of our field and the health of the people we serve.

It is inconceivable that the COVID-19 death toll would be as high as it is today if the US political leadership believed in evidence, or had enacted egalitarian social and health policies comparable to those in other wealthy countries. Lack of affordable housing, universal health coverage and job protections are all public-health issues. So are low wages. Building the political will to address these issues will save lives. That's worth risking a job or a promotion. Let's use this public-health crisis to organize.

Mary T. Bassett is the director of the FXB Center for Health and Human Rights at Harvard University in Cambridge, Massachusetts.
e-mail: mbassett@hsph.harvard.edu

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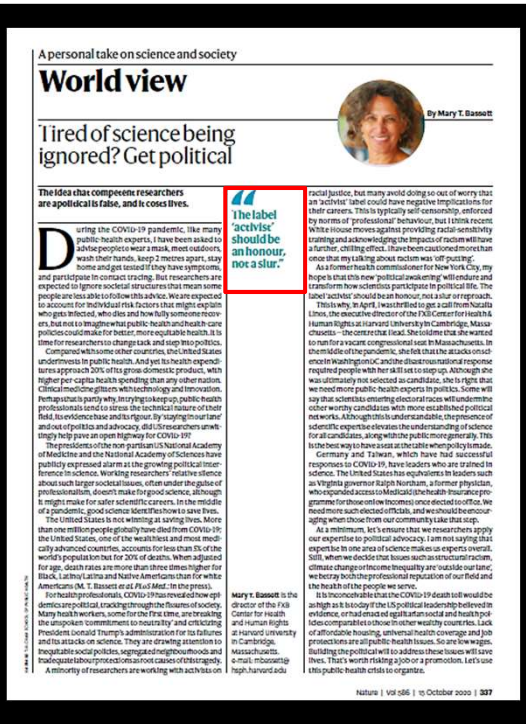
Nature | Vol 586 | 15 October 2020 | 337



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The idea that competent researchers are apolitical is false, and it costs lives.

> "The label 'activist' should be an honour, not a slur."

During the COVID-19 pandemic, like many public-health experts, I have been asked to advise people to wear a mask, meet outdoors, wash their hands, keep 2 metres apart, stay home and get tested if they have symptoms, and participate in contact tracing. But researchers are expected to ignore societal structures that mean some people are less able to follow this advice. We are expected to account for individual risk factors that might explain who gets infected, who dies and how fully someone recovers, but not to imagine what public-health and health-care policies could make for better, more equitable health. It is time for researchers to change tack and step into politics.

Compared with some other countries, the United States underinvests in public health. And yet its health expenditures approach 20% of its gross domestic product, with higher per-capita health spending than any other nation. Clinical medicine glitters with technology and innovation. Perhaps that is partly why, in trying to keep up, public-health professionals tend to stress the technical nature of their field, its evidence base and its rigour. By 'staying in our lane' and out of politics and advocacy, did US researchers unwittingly help pave an open highway for COVID-19?

The presidents of the non-partisan US National Academy of Medicine and the National Academy of Sciences have publicly expressed alarm at the growing political interference in science. Working researchers' relative silence about such larger societal issues, often under the guise of professionalism, doesn't make for good science, although it might make for safer scientific careers. In the middle of a pandemic, good science identifies how to save lives.

The United States is not winning at saving lives. More than one million people globally have died from COVID-19; the United States, one of the wealthiest and most medically advanced countries, accounts for less than 5% of the world's population but for 20% of deaths. When adjusted for age, death rates are more than three times higher for Black, Latino/Latina and Native American than for white Americans (M. T. Bassett *et al. PLoS Med.*; in the press).

For health professionals, COVID-19 has revealed how epidemics are political, tracking through the fissures of society. Many health workers, some for the first time, are breaking the unspoken 'commitment to neutrality' and criticizing President Donald Trump's administration for its failures and its attacks on science. They are drawing attention to inequitable social policies, segregated neighbourhoods and inadequate labour protections as root causes of this tragedy.

A minority of researchers are working with activists on racial justice, but many avoid doing so out of worry that an 'activist' label could have negative implications for their careers. This is typically self-censorship, enforced by norms of 'professional' behaviour, but I think recent White House moves against providing racial-sensitivity training and acknowledging the impacts of racism will have a further, chilling effect. I have been cautioned more than once that my talking about racism was 'off-putting'.

As a former health commissioner for New York City, my hope is that this new 'political awakening' will endure and transform how scientists participate in political life. The label 'activist' should be an honour, not a slur or reproach.

This is why, in April, I was thrilled to get a call from Natalia Linos, the executive director of the FXB Center for Health & Human Rights at Harvard University in Cambridge, Massachusetts — the centre that I lead. She told me that she wanted to run for a vacant congressional seat in Massachusetts. In the middle of the pandemic, she felt that the attacks on science in Washington DC and the disastrous national response required people with her skill set to step up. Although she was ultimately not selected as candidate, she is right that we need more public-health experts in politics. Some will say that scientists entering electoral races will undermine other worthy candidates with more established political networks. Although this is understandable, the presence of scientific expertise elevates the understanding of science for all candidates, along with the public more generally. This is the best way to have a seat at the table when policy is made.

Germany and Taiwan, which have had successful responses to COVID-19, have leaders who are trained in science. The United States has equivalents in leaders such as Virginia governor Ralph Northam, a former physician, who expanded access to Medicaid (the health-insurance programme for those on low incomes) once elected to office. We need more such elected officials, and we should be encouraging when those from our community take that step.

At a minimum, let's ensure that we researchers apply our expertise to political advocacy. I am not saying that expertise in one area of science makes us experts overall. Still, when we decide that issues such as structural racism, climate change or income inequality are 'outside our lane', we betray both the professional reputation of our field and the health of the people we serve.

It is inconceivable that the COVID-19 death toll would be as high as it is today if the US political leadership believed in evidence, or had enacted egalitarian social and health policies comparable to those in other wealthy countries. Lack of affordable housing, universal health coverage and job protections are all public-health issues. So are low wages. Building the political will to address these issues will save lives. That's worth risking a job or a promotion. Let's use this public-health crisis to organize.

Mary T. Bassett is the director of the FXB Center for Health and Human Rights at Harvard University in Cambridge, Massachusetts.
e-mail: mbassett@hsph.harvard.edu

European Commissioner Dr. Ursula von der Leyen

European Commissioner Dr. Ursula von der Leyen: Politician or Activist?

and should collect long-term mortality data. Similarly, the FDA now routinely reviews longer-term data for PCEs for which market authorization is being sought when they are intended to treat patients with PAD, and the agency requests that trials capture information on adjunctive antithrombotic therapy and medications indicated for patients with atherosclerosis.

We are fortunate to live in an era when numerous beneficial treatment options are available for patients with PAD. These patients should receive the best available medical therapy and guidance to promote healthy lifestyles, including weight control, smoking cessation, and exercise. For patients requiring further treatment to relieve symptoms, we know that PCEs improve blood flow to the legs and are more likely than uncoated devices to avert the need for repeat procedures to reopen blocked blood vessels. The benefits and risks associated with available PAD treatment options should be carefully considered and discussed with individual patients. The use of a PCD may be the best treatment for some patients, particularly those judged to be at particularly high risk for restenosis and repeat femoropopliteal interventions. Additional data are needed to further refine optimal treatment strategies for patients on the basis of their risk profile for restenosis, incorporating patient-specific factors (e.g., presence of diabetes, endothelial dysfunction, increased platelet activity, or systemic inflammation) and lesion-specific factors (e.g., small-diameter vessels, long lesions, high plaque burden, or reduced distal runoff).

The FDA will continue to work with investigators, medical professional societies, and the device industry to facilitate data development and to communicate with the public as new information becomes available.

Disclosure forms provided by the authors are available at NEJM.org.

From the Center for Devices and Radiological Health, Food and Drug Administration, Silver Spring, MD.

This article was published on January 9, 2021, at NEJM.org.

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DOI: 10.1056/NEJMp2031360

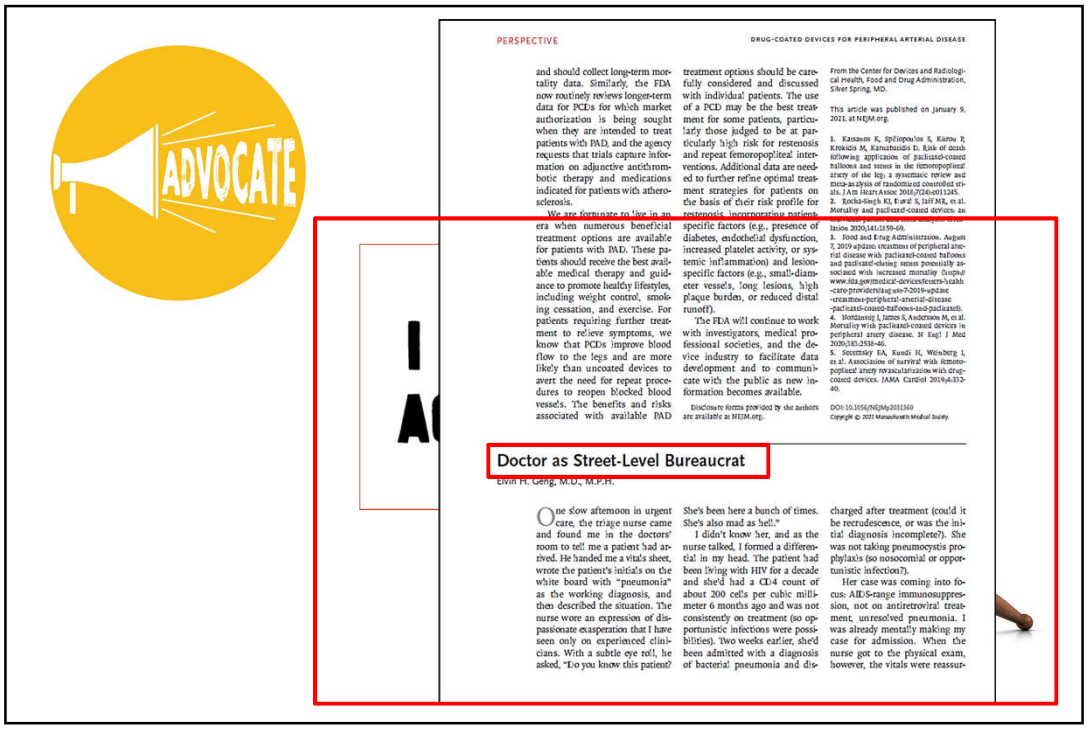
Doctor as Street-Level Bureaucrat

Elvin H. Geng, M.D., M.P.H.

One slow afternoon in urgent care, the triage nurse came and found me in the doctors' room to tell me a patient had arrived. He handed me a vitals sheet, wrote the patient's initials on the white board with "pneumonia" as the working diagnosis, and then described the situation. The nurse wore an expression of dispassionate exasperation that I have seen only on experienced clinicians. With a subtle eye roll, he asked, "Do you know this patient? She's been here a bunch of times. She's also mad as hell."

I didn't know her, and as the nurse talked, I formed a differential in my head. The patient had been living with HIV for a decade and she'd had a CD4 count of about 200 cells per cubic millimeter 6 months ago and was not consistently on treatment (so opportunistic infections were possibilities). Two weeks earlier, she'd been admitted with a diagnosis of bacterial pneumonia and discharged after treatment (could it be recrudescence, or was the initial diagnosis incomplete?). She was not taking pneumocystis prophylaxis (so nosocomial or opportunistic infection?).

Her case was coming into focus: AIDS-range immunosuppression, not on antiretroviral treatment, unresolved pneumonia. I was already mentally making my case for admission. When the nurse got to the physical exam, however, the vitals were reassur-



The politician may be popular, but the activist will rarely be.

The politician can unify, but the activist often divides.

The politician seeks to unify people around a set of beliefs. The activist seeks to right a wrong that has been held up by a set of beliefs.

In short, the politician navigates the system, while the activist defies it.

The politician builds a coalition by using middling philosophy and policies that appeal to the most and offend the fewest. The activist is driven more by purpose, morality and righteousness.

There is a reason most of our greatest activists in America never became politicians: they would have had to compromise too much of themselves and their causes. But it's also often true that the presence of an extremist wing is what makes successes of the moderate position possible...

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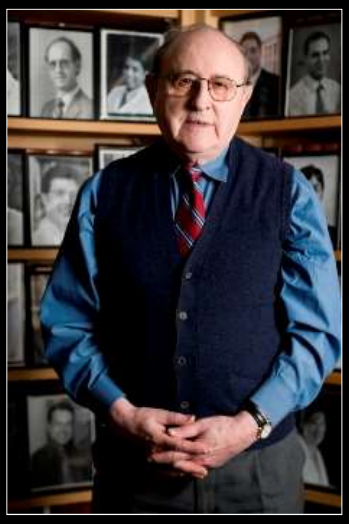
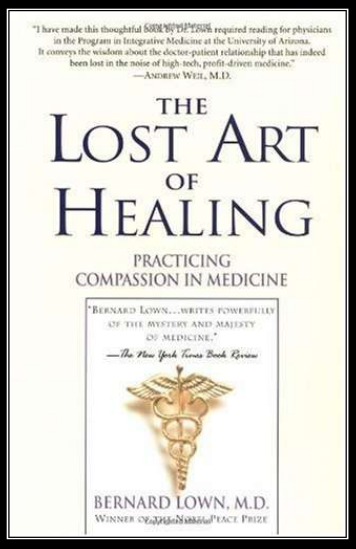
Our moment needs radical young activists."

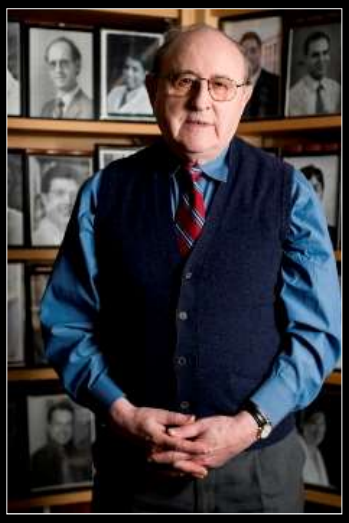
Activism

Bernard Lown (1921-2021)

Newton, MA (2017)







"…Toda be
more p n
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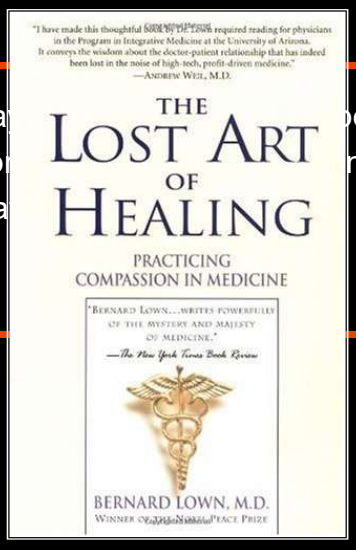
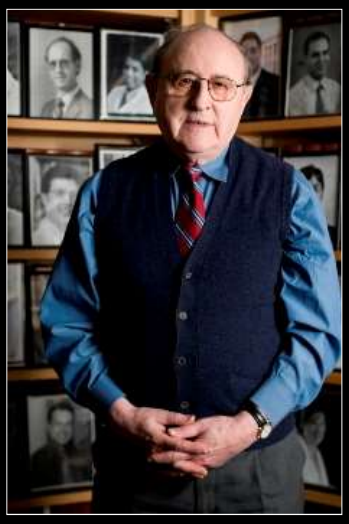
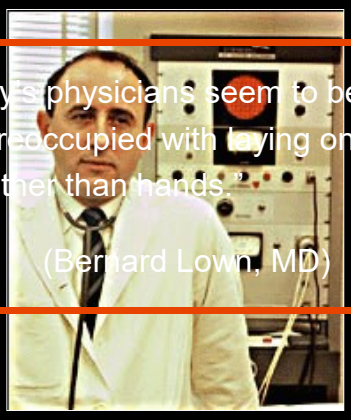


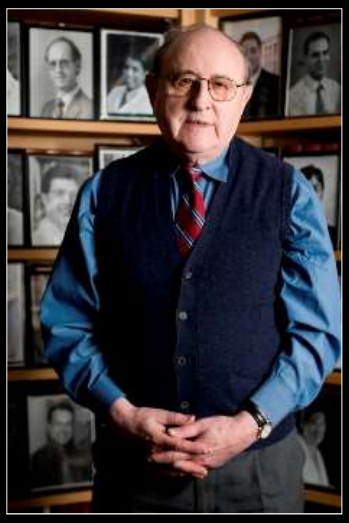


"…Today's physicians seem to be more preoccupied with laying on *tools* rather than hands."

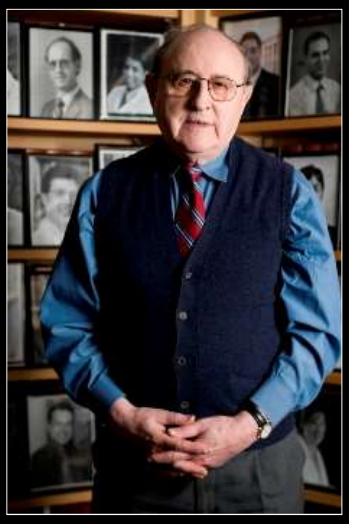
(Bernard Lown, MD)



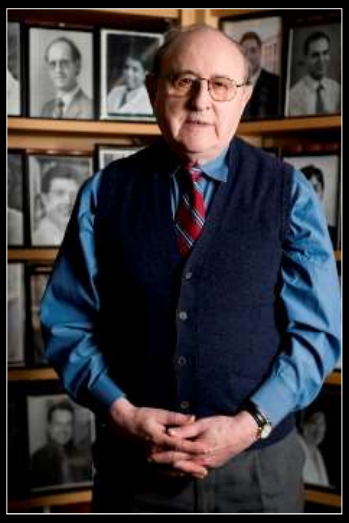
1961 – External DC Defibrillator
("Cardioverter")



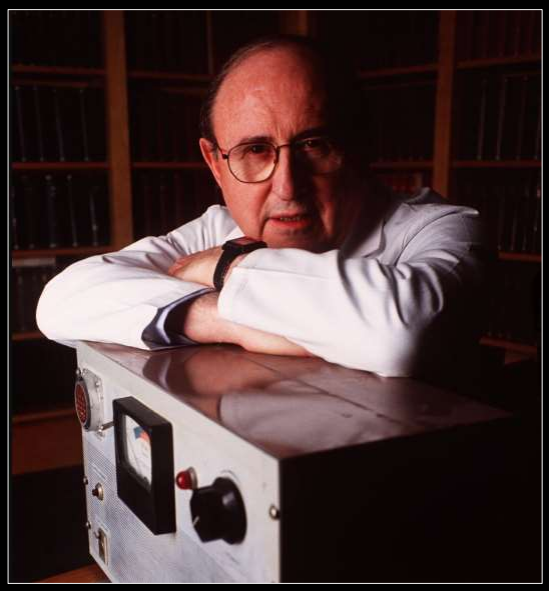
Refused to patent it...



- Born in Lithuania exactly 100 years after Virchow, Lown lost his family to the Holocaust.
- Including his much beloved grandfather, a rabbi.
- Not suprisingly, Lown's lifelong motto became, "Never whisper in the presence of wrong!"



- Lown moved to the U.S. in 1935, when he was already 14 years old.
- He graduated *summa cum laude* in the classics from the University of Maine, before eventually moving to Hopkins and Harvard.



Bernard Lown, MD

"We go into medicine to make a difference and we are in a unique position to do so..."

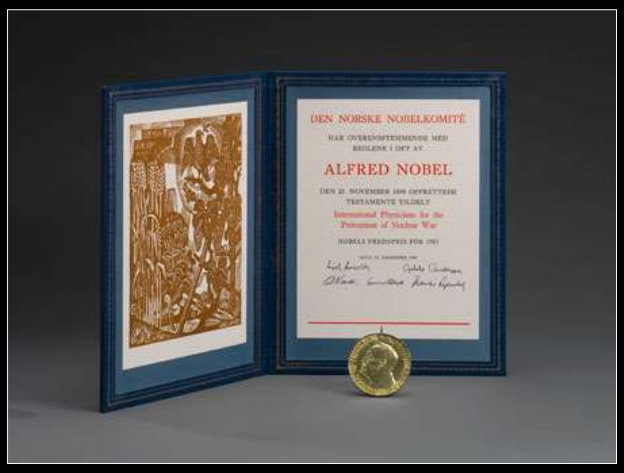
"... one cannot be committed to health without being engaged in *the social struggle for health*."

PSR

1985 NOBEL PEACE PRIZE

PHYSICIANS FOR SOCIAL RESPONSIBILITY

Dr. Evgueni Chazov and Dr. Bernard Lown
(A Russiand and an American Cardiologist)



Plaque announcing the award of the 1985 Nobel Peace Prize to *International Physicians for the Prevention of Nuclear War* (IPPNW)

- Dr. Chazov (administering CPR) and Dr. Lown (standing nearby) tended to a Russian journalist who suffered a cardiac arrest during the press conference.
- The journalist was eventually defibrillated and survived...

"….We have just witnessed what doctoring is all about. When faced with a dire emergency of sudden cardiac arrest, doctors don't inquire whether the patient was a good person or a criminal. We don't delay treatment to learn the politics or character of the victim. We respond not as ideologues, nor as Russians or Americans, but as *doctors*. The only thing that matters is saving a human life...

We work with doctors everywhere to save our endangered home."

"….We have just witnessed what doctoring is all about. When faced with a dire emergency of sudden cardiac arrest, doctors don't inquire whether the patient was a good person or a criminal. We don't delay treatment to learn the politics or character of the victim. We respond not as ideologues, nor as Russians or Americans, but as *doctors*. The only thing that matters is saving a human life...

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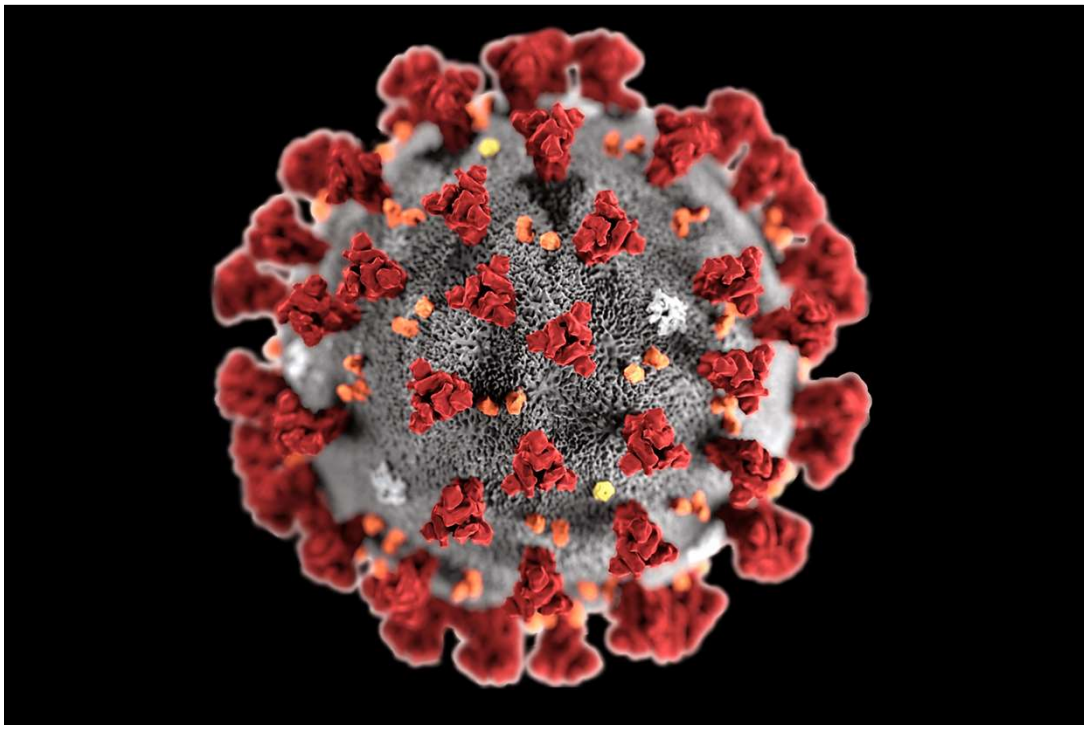
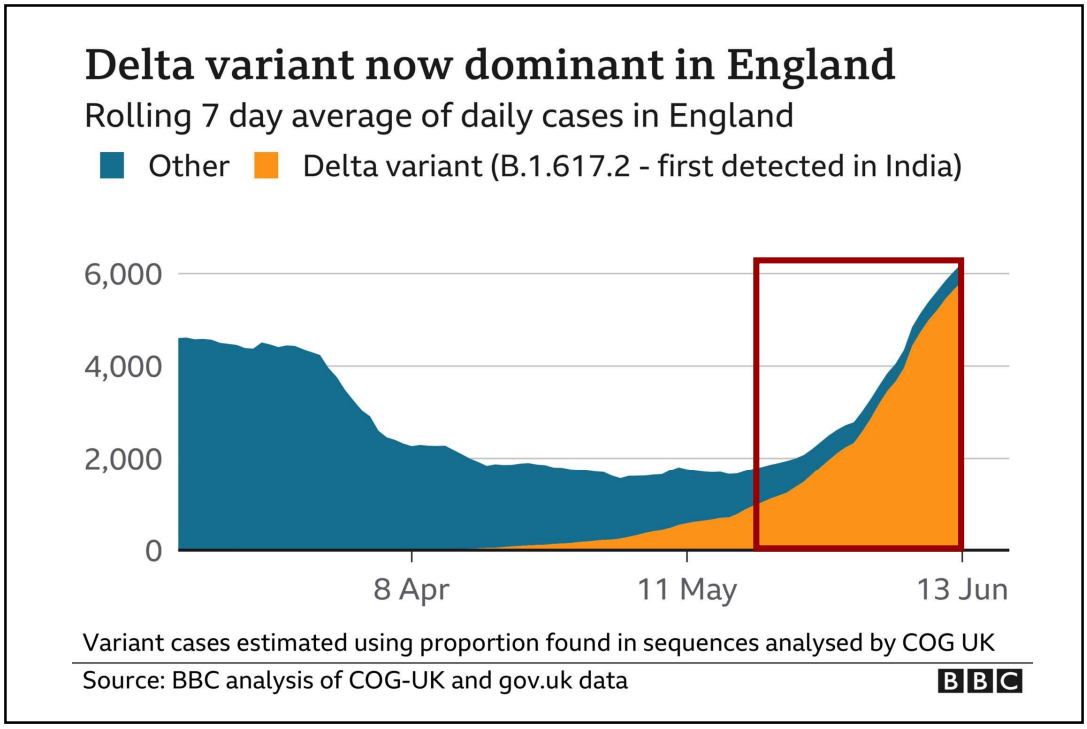


"The nation-state standing alone has no future" [May 18, 2020]

Narendra Modi

“By effectively controlling coronavirus, India has saved the world...” [Jan. 2021]


Delta variant now dominant in England
Rolling 7 day average of daily cases in England
Other
Delta variant (B.1.617.2 - first detected in India)
6,000
4,000
2,000
0
8 Apr
11 May
13 Jun
Variant cases estimated using proportion found in sequences analysed by COG UK
Source: BBC analysis of COG-UK and gov.uk data
BBC

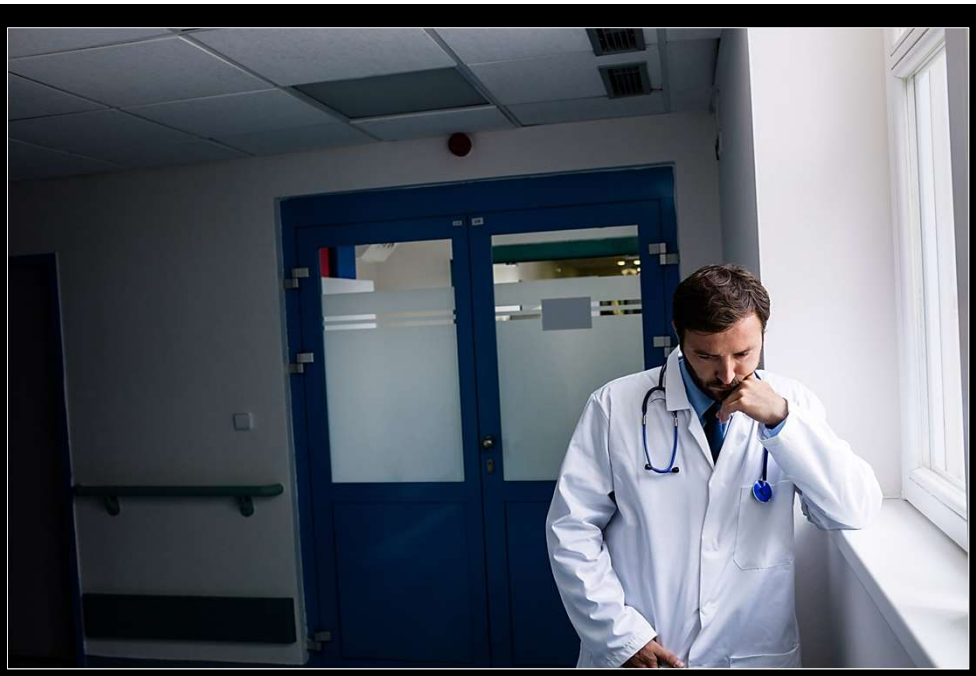
Lined up for guns and ammo…

Resisted lockdown…

Resisted vaccines…

Resisted masks…

January 6, 2021



Remained guardians of integrity…

We demanded greater protection for our patients…

… and for ourselves

In Peru' we even went on hunger strikes...

And in Myanmar we walked out of hospitals to protest the military coup...


TOO POLITICAL?

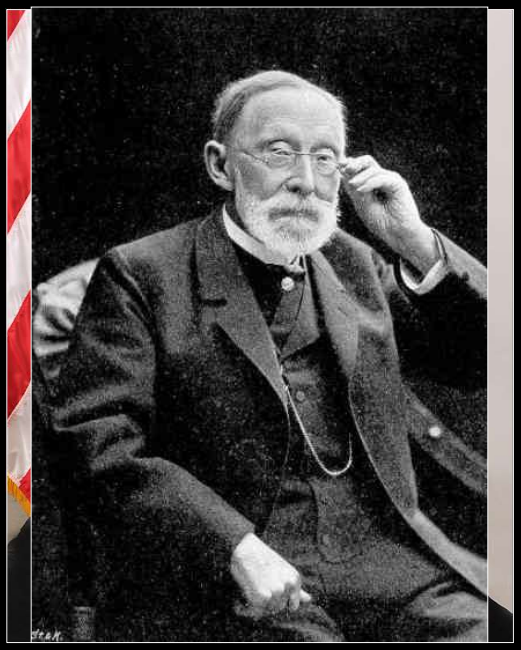

Anthony S. Fauci, M.D.
LABORATORY OF
NIAID
IMMUNOREGULATION

"Man is a political animal"

ΙΔΙΩΤΗΣ
[ἰδιώτης…idiōtēs]

Vivek Murty, MD

"People will accuse you of being political, but if people accuse you of being political because you're standing up for people who can't stand up for themselves, then you should do it anyway, because that is at the heart of our profession."



Vivek Murty, MD

He was convinced that thanks to their intimate knowledge of how societal problems impact on health, physicians are uniquely suited to be better statesmen and women...

"People will accuse you of being political, but if people accuse you of being political because you're standing up for people who can't stand up for themselves, then you should do it anyway, because that is at the heart of our profession."

"Natural attorneys of the poor" (Virchow)

"Advocates for the sick, the poor, and the afflicted" (Lown)

The New York Times

Doctors, Revolt!

By Rich Joseph

Feb. 24, 2018

Boston — The 96-year-old patient with pneumonia in Bed 11 was angry. "Do you really need to check my vital signs every four hours?" he asked.

Checking things like temperature, blood pressure and respiratory rate every four hours on hospitalized patients has been the standard of care since the 1890s, yet scant data indicates that it helps. In fact, data shows that close to half of patients are unnecessarily awakened for such checks, perhaps to the detriment of their recovery. My patient wanted to know how, with all that poking and prodding, he was supposed to rest and get better.

"I understand your frustration," I replied, "and wish I could help to change the situation."

I may have been a lowly intern, but it was a feeble reply. And he knew it. "Understanding is not enough," he said. "You should be doing something to help fix this system."

The Guardian

Mon 25 Jan 2021

Global ice loss accelerating at record rate, study finds

Rate of loss now in line with worst-case scenarios of the Intergovernmental Panel on Climate Change

▲ The rate of ice loss accelerated by 65% between 1994 and 2017, the paper found. Photograph: Education Images/Universal Images Group/Getty Images

The melting of ice across the planet is accelerating at a record rate, with the melting of the Greenland and Antarctic ice sheets speeding up the fastest, research has found.

Climate crisis

Four in 10 young people fear having children due to climate crisis

Global survey finds most 16-25 year olds worry a lot about the future, and many feel failed by governments

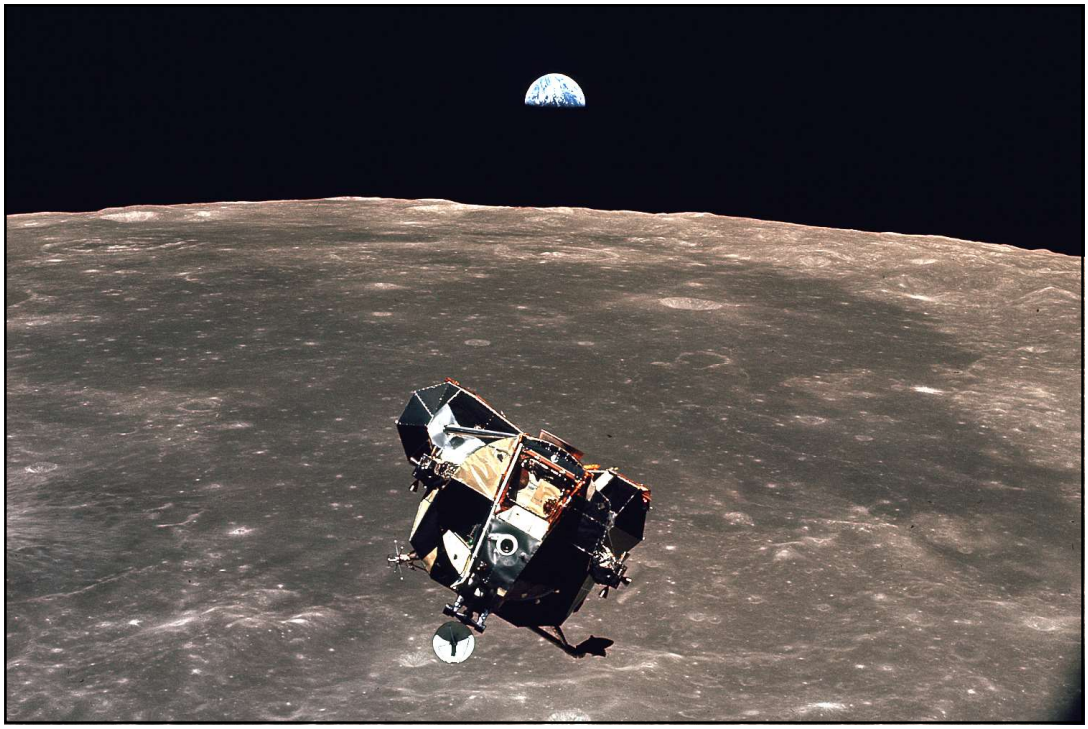
Fiona Harvey *Environment correspondent*

Tue 14 Sep 2021 01.00 EDT

▲ A Sunrise Movement demonstration in Washington DC last June seeking more action from the Biden administration on the climate crisis. Photograph: Allison Bailey/Rex/Shutterstock

Four in 10 young people around the world are hesitant to have children as a result of the climate crisis, and fear that governments are doing too little to prevent climate catastrophe, a poll in 10 countries has found.


Fragile
Earth



The moon certainly sticks in my memory but barely, compared with the vision of the itsy-bitsy sphere just outside my window, motionless, cradled in black velvet...

That sight—the Earth, tiny, shiny, blue of sky and water, white of clouds, with only a brown trace of land—haunts me. If allowed only one word to describe Earth, I would say *fragile*.

We lunar crews looked back at 3 billion earthlings. Almost fifty years later, the number is approaching 8 billions, ever increasing, with predictions of 10 billions or more by mid-century. This growth alarms some people, but not too many; they have more pressing problems close to home...

I wrote in 2009 that we need a *new economic paradigm* to produce prosperity without growth. Ten years later I believe this even more firmly.

Gaia is saying “Ouch!”

European Journal of Internal Medicine 26 (2015) 1–6

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journal homepage: www.elsevier.com/locate/ejim

Review Article

Impact on human health of climate changes

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Air pollution
Mortality

ABSTRACT

There is increasing evidence that climate is rapidly changing. These changes, which are mainly driven by the dramatic increase of greenhouse gas emissions from anthropogenic activities, have the potential to affect human health in several ways. These include a global rise in average temperature, an increased frequency of heat waves, of weather events such as hurricanes, cyclones and drought periods, plus an altered distribution of allergens and vector-borne infectious diseases. The cardiopulmonary system and the gastrointestinal tract are particularly vulnerable to the adverse effects of global warming. Moreover, some infectious diseases and their animal vectors are influenced by climate changes, resulting in higher risk of typhus, cholera, malaria, dengue and West Nile virus infection. On the other hand, at mid latitudes warming may reduce the rate of diseases related to cold temperatures (such as pneumonia, bronchitis and arthritis), but these benefits are unlikely to rebalance the risks associated to warming.

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1. Introduction

Climate change, defined by significant variations of regional or global climates over long periods, includes major changes in average and peak temperature, humidity, atmospheric pressure, precipitations, wind patterns and water salinity, as well as a decrease in the size of mountain and polar glaciers [1]. The supply of safe water is also endangered by climate changes. Although the average climate conditions have been relatively stable for millennia, the last 50 years have witnessed an acceleration of changes [2,3], so that the average global temperature has increased by 0.7 °C and is expected to further increase between 1.8 and 4.0 °C by the year 2100 [4–6]. The main cause of the ongoing warming of the earth must be sought in the increasing emissions into the lower atmosphere of carbon dioxide (CO_2) and other greenhouse gases resulting from human activities (mainly methane and nitrous oxide) [6]. Greenhouse gases absorb some of the radiation emitted from the earth, trapping more heat in the lower atmosphere and thereby increasing temperatures [6]. Climate experts strongly believe that climate changes will lead to increasingly frequent and severe heat waves and extreme weather events, as well as to a rise in sea levels [6]. Accordingly, it is becoming clearer and clearer that climate changes over relatively short time periods pose serious threats to human well-being and health [7].

This narrative review summarizes the most relevant actual and potential effects on human health of climate changes.

2. Methods

We performed an electronic search on PubMed using the following terms without time limits: "climate change", "climate variability", "global warming", "meteorological factors", "weather", "atmosphere", "heat waves", "extreme weather", "ambient air pollution", "outdoor", "particulate matter", "PM", "air pollutants", "mortality", "human health", "health effects", "infectious disease", "diarrheal disease", "cardiovascular disease", "ischemic heart disease", "cancer", and "respiratory disease". The date of the last search was November 30, 2014. The references of all retrieved original articles and reviews were assessed for additional relevant items. We also reviewed recent reports on the relationship between climate and human health from non-biomedical journals, as well as from regulatory documents produced by environmental and health agencies.

3. Climate effects on health

Effects of global climate change on human health may be direct or indirect. Until now investigators were mainly focused on the direct effects of extreme weather events, such as heat waves, droughts, cyclones and tropical storms, for which empirical data are readily available and correlations are easily demonstrable [8]. Secondary effects related to climate changes, such as the worsening of ambient air quality and the

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The NEW ENGLAND JOURNAL of MEDICINE

Perspective

MARCH 25, 2010

Global Climate Change and Infectious Diseases

Emily K. Shuman, M.D.

The 2009 United Nations Climate Change Conference in Copenhagen ended on December 18 without passage of a binding resolution for tackling global climate change. With the debate over U.S. health care reform raging, this event went largely unnoticed by the U.S. health care community. However, climate change will have enormous implications for human health, especially for the burden of vectorborne and waterborne infectious diseases.

Climate change is occurring as a result of an imbalance between incoming and outgoing radiation in the atmosphere.[1] As solar radiation enters the atmosphere, some of it is absorbed by the earth's surface and reemitted as infrared radiation, which is then absorbed by greenhouse gases — primarily carbon dioxide, methane, and nitrous oxide — which result from the combustion of fossil fuels and which cannot be effectively removed from the atmosphere because of deforestation. This process generates heat. As the concentrations of greenhouse gases in the atmosphere have reached record levels, global temperatures have risen at a faster rate than at any time since records began to be kept in the 1850s, and temperatures are expected to increase by another 1.8 to 5.8°C by the end of this century. The hydrologic cycle will be altered, since warmer air can retain more moisture than cooler air. Some geographic areas will have more rainfall, and some more drought, and severe weather events — including heat waves and storms — are expected to become more common. For these reasons, the term "climate change" is now preferred over the term "global warming." Because of rising temperatures and changing rainfall patterns, climate change is expected to have a substantial effect on the burden of infectious diseases that are transmitted by insect vectors and through contaminated water.

Insect vectors tend to be more active at higher temperatures. For example, tropical mosquitoes such as anopheles species, which transmit malaria, require temperatures above 16°C to complete their life cycles.[2] Some vectorborne diseases such as malaria are also thought of as water-vectored diseases, since mosquitoes typically thrive in aquatic habitats, where they lay their eggs in water-filled containers. Thus, epidemics of malaria tend to occur during rainy

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Short Communication

Shifts in global bat diversity suggest a possible role of climate change in the emergence of SARS-CoV-1 and SARS-CoV- 2

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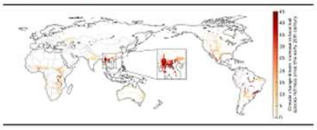
HIGHLIGHTS

- Bats are the likely zoonotic origin of SARS-CoV-1 and SARS-CoV-2.
- The local number of coronaviruses is correlated with bat species richness.
- Climate change has shifted the global distributions of bats.
- Bat richness has strongly increased in the likely origin of SARS-CoV-1 and 2.
- Climate change may have been an important factor in the outbreaks of the two viruses.

GRAPHICAL ABSTRACT



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ABSTRACT

Bats are the likely zoonotic origin of several coronaviruses (CoVs) that infect humans, including SARS-CoV-1 and SARS-CoV-2, both of which have caused large-scale epidemics. The number of CoVs present in an area is strongly correlated with local bat species richness, which in turn is affected by climatic conditions that drive biogeographical distributions of species. Here we show that the southern Chinese Yunnan province and neighbouring regions in Myanmar and Laos form a global hotspot of climate change-driven increase in bat richness. This region coincides with the likely spatial origin of bat-borne ancestors of SARS-CoV-1 and SARS-CoV-2. Accounting for an estimated increase in the order of 1000 s-borne CoVs across the region, climate change may have played a key role in the evolution or transmission of the two SARS CoVs.

1. Introduction

Over 60% of emerging infectious disease events worldwide can be traced back to zoonoses, most of which originate in wildlife (Jones et al., 2008). Bats have a special place amongst animal pathogen hosts in that they carry the highest proportion of zoonotic viruses of all mammalian orders (Olival et al., 2017; Luis et al., 2013). Coronaviruses (CoVs) account for over a third of the sequenced bat virome (Rasche et al., 2019), corresponding to an estimated more than 3000 different CoVs carried by the world's bats (Anthony et al., 2017a). Several CoVs known to infect humans have very likely originated in bats (Reusken et al., 2010; Cui et al., 2019), including the three types associated with

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Will we address Humanity's Greatest Existential Threat?

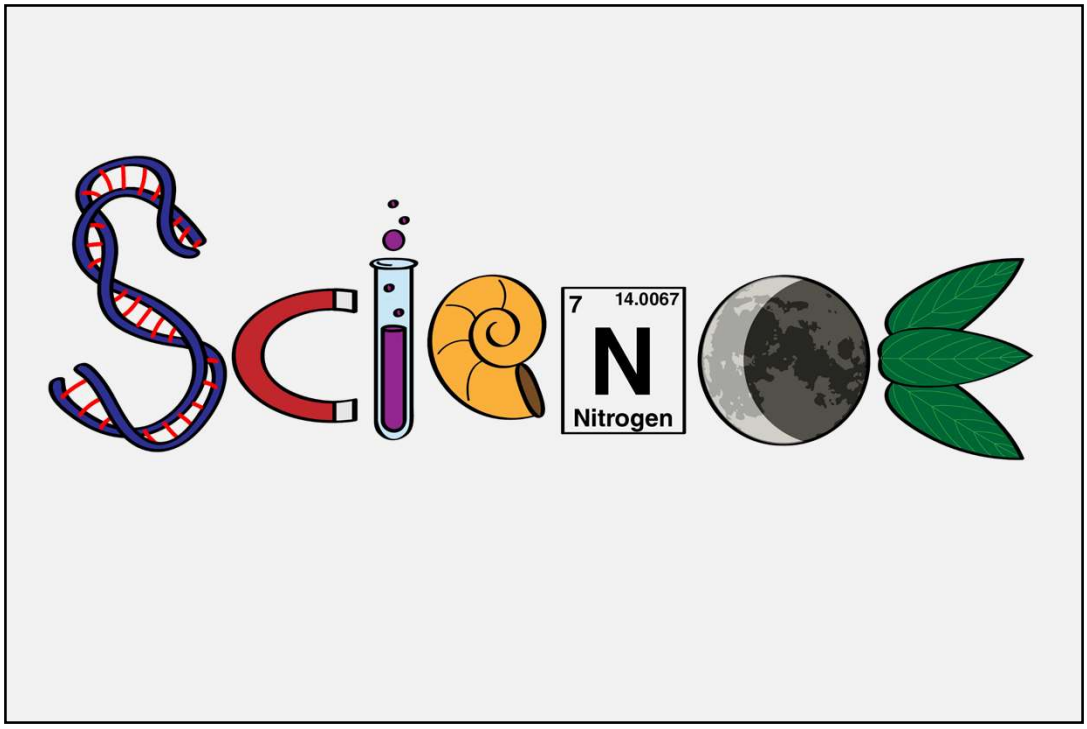
ECLECTICISM

SOCIAL RESPONS.

CRITICAL THINKING

Wisdom


FORESIGHT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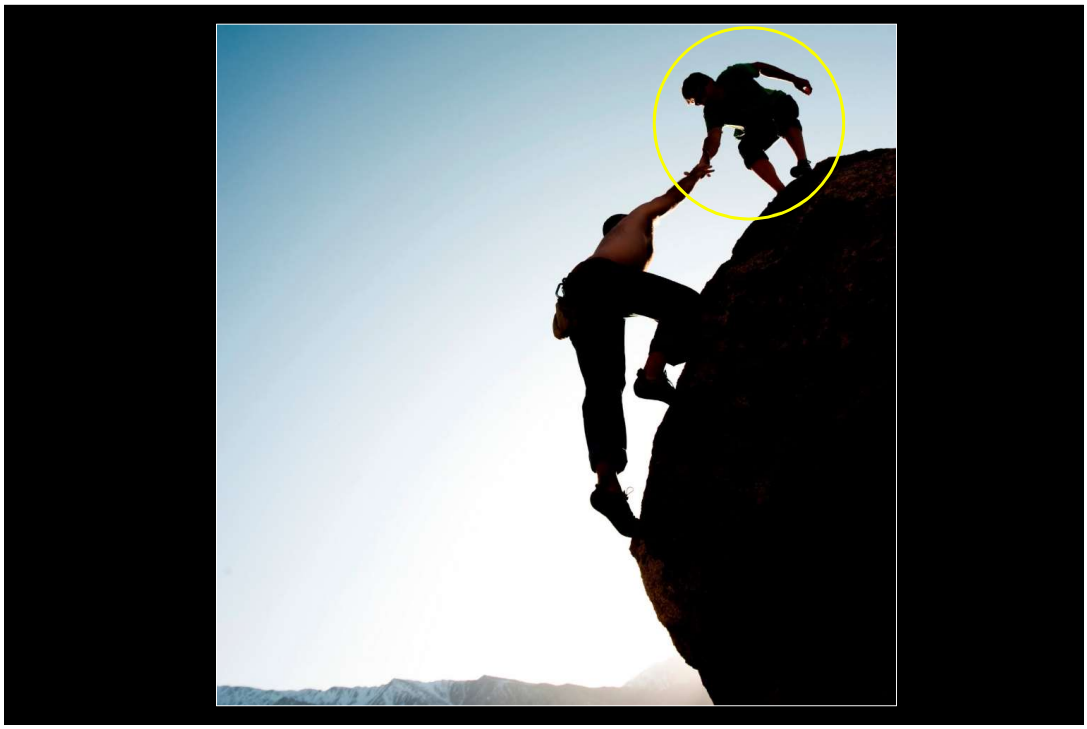
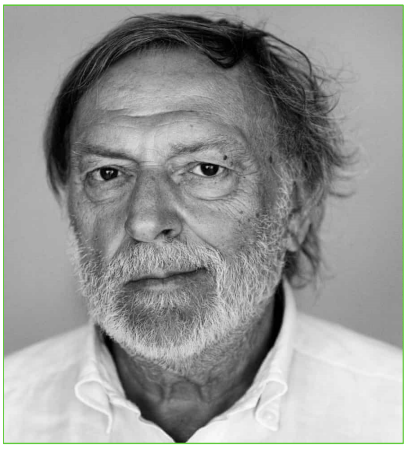


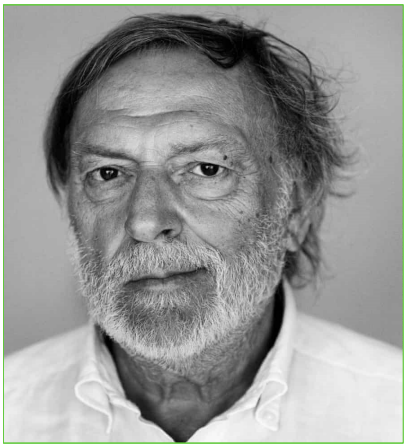
Medicine Comes with Social Responsibilities

Medicine Comes with Social Responsibilities

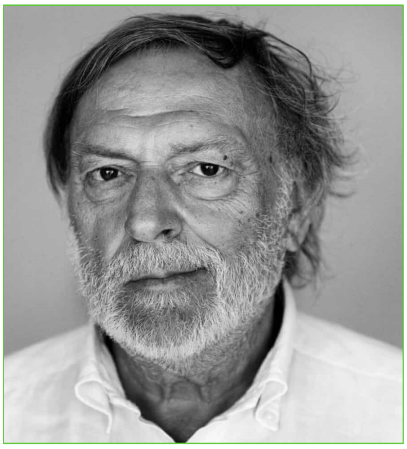
None of us is safe until all of us are safe...



Gino Strada
(1948-2021)

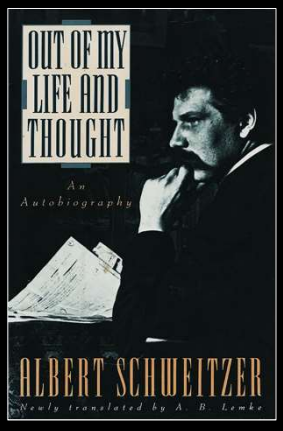


“Human rights have to be rights of all…



“Human rights have to be rights of all…

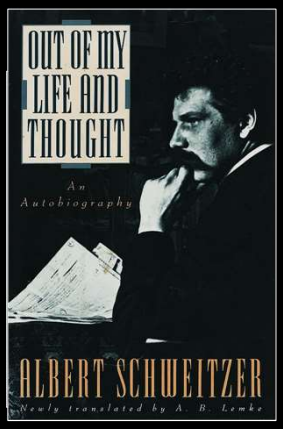
Otherwise they are not rights, but privileges...”



"Judging by what I have learned about men and women, I am convinced there is much more idealism than we think. Just as visible rivers are less numerous than underground streams, so visible idealism is minor compared to what people carry in their hearts.

Mankind is waiting for those who can untie what is knotted and bring to the surface the underground waters."

(Albert Schweitzer, 1875-1965)



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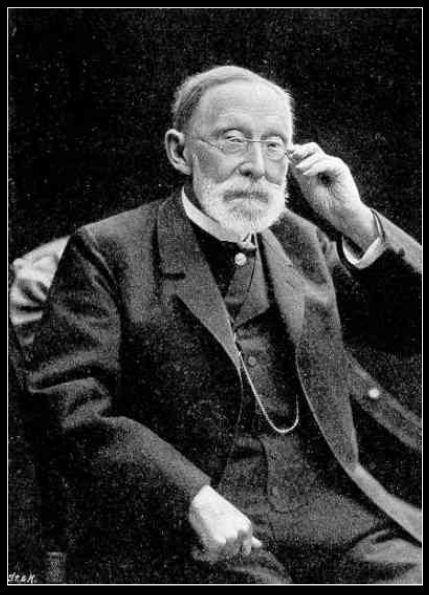
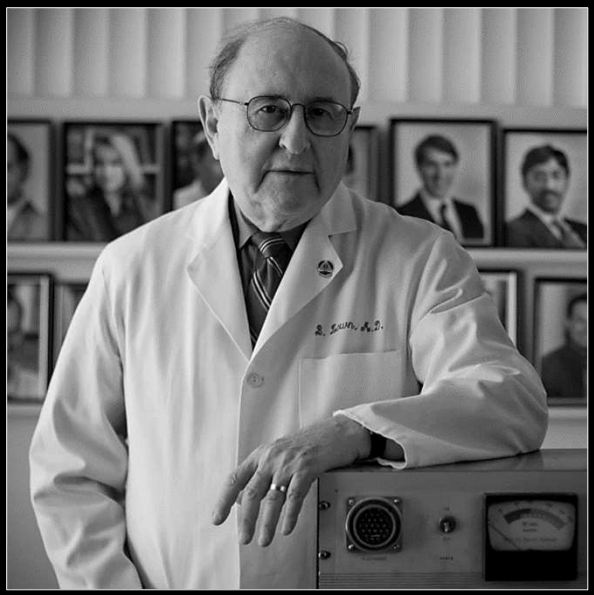
"What we do for ourselves dies with us...
But what we do for others and the world, remains and is immortal."

(Albert Pike, 1809-1891)



Rudolf Virchow (1821-1902)



Bernard Lown (1921-2021)


They were once here...