Books & arts

ANGUS MORDANT/BLOOMBERG VIA GETTY

Cremation boxes containing the bodies of people thought to have died of COVID-19 in Queens, New York City, in April 2020.

Health-care league table shows we were warned

Germany and Taiwan top a ranking drawn up pre-pandemic by the architect of the US Affordable Care Act. The United States comes near the bottom. **By Eric Topol**

The COVID-19 pandemic is an acid test of the world's health systems. The United States, a nation that ranks among the highest for per capita income, number of intensive-care beds per head and share of gross domestic product spent on health care, has not come out well. It has 4.2% of the world's population but, as *Nature* went to press, it had accounted for 27% of confirmed coronavirus deaths globally. The daily charts of national case numbers and mortality demonstrate how countries differ in planning and provision, and raise a wider question about how to rate health systems.

This question is the eerily prophetic focus of *Which Country Has the World's Best Health Care?*, written before the pandemic by Ezekiel Emanuel, who was a health-policy adviser to the administration of US president Barack Obama, and is considered one of the architects of the 2010 Affordable Care Act. A prolific writer and broadcaster, Emanuel trained as an oncologist and bioethicist, and has published controversial essays on topics from employer-based health insurance to end-of-life care.

Which Country Has the World's Best Health Care?
Ezekiel J. Emanuel
PublicAffairs (2020)

His iconoclastic appraisal presciently marks the United States among the worst in class. He is also damning about China, a stance that

ANN WANG/REUTERS

The Grand Hotel in Taipei celebrates Taiwan reaching zero confirmed cases of COVID-19 in April 2020.

has not been borne out by events. But he does hand rosettes to some of the nations that have so far excelled in protecting their citizens during modern history's most significant challenge for all health systems. In so many ways, it seems, we had ample warning.

Reluctant ranking

Emanuel writes that although he loves to rank things such as meals, chocolate, cheeses and bike rides, he was reluctant to get into ranking health care. He considers it "path dependent", resting on country-specific values and priorities such as free insurance with no co-payments or hospital-based care instead of home-based or long-term care.

Succumbing to repeated requests, he assessed 11 health-care systems across 4 continents: those of the United States, Germany, France, Switzerland, Norway, the Netherlands, the United Kingdom, Australia, Canada, Taiwan and China. For each, he and his team of 5 researchers filled in a report card for performance in 22 dimensions on topics including health-insurance coverage, financing, payment, delivery, pharmacy prices and workforce. This last covered staffing levels, salaries, ages, numbers of physicians and proportion of foreign doctors, among other things. The team also dug into specific areas such as mental health care, patient choices, waiting times and chronic-care coordination.

Using this methodology, the United States ranked just above China, the worst performer. The United States came in dead last in terms of systems ranked "notably poor" for each dimension.

No system is crowned outright winner. Four emerge as very strong contenders: those of Germany, the Netherlands, Norway and Taiwan, each with laudable features such as broad choice, excellent coordination of long-term care and affordability. All four are ranked "best-performing" for their absolute or near universal coverage, their comprehensiveness of benefits and their choice of physicians and hospitals. (Regarding universal coverage, Taiwan's system is similar to the United Kingdom's, with care paid for by a single public authority, and mandatory public health insurance; Norway uses a single-payer model with limited private insurance; and Germany and the Netherlands have universal coverage with mandatory basic private insurance.)

"Which country has the worst health care?"

It is noteworthy that the same four have so far been among the most successful in managing COVID-19.

Bottom of the pack

By contrast, the United States has little to show for its US$11,000-per-person annual expenditure. Life expectancy and maternal, childhood and infant mortality there are among the worst in all 37 countries in the Organisation for Economic Co-operation and Development. The major reason for optimism about the US health-care system, Emmanuel suggests, "is that it is innovative". How sad that that potential has not yet been tapped on a national scale during the COVID cataclysm. However, one can see pockets of innovation in all-hands efforts to make tests available locally and to drive drug and vaccine trials in the face of vast political headwinds.

This book lands just as the deep flaws in US health care have become manifest in many ways. As *Nature* went to press, more than 40 million people have become unemployed,

in a country where half of the population relies on employer-based health insurance. The lack of universal coverage has amplified deaths and disabling outcomes among poor people, Black people and members of other minority groups. There was no early, aggressive coronavirus testing, and there has been a gross lack of protective gear for the health-care workforce.

Other such charts exist. Emanuel dismisses the highly cited World Health Organization ranking as haphazard and methodologically flawed, with "fancy equations and colored graphs". I think it is unfair and inappropriate for him to connect it with Mark Twain's "lies, damned lies and statistics". He compares his own ranking favourably with those of the US private non-profit organization the Commonwealth Fund, partly on the grounds that, being written by a team of non-nationals of the countries concerned (apart from the United States), it is more objective.

I disagree. Quantifying countries on "choice" and "efficiency" is extremely difficult. Some of the calls that Emanuel makes can be questioned, such as grouping the United States with the best-performing countries for comprehensiveness of benefits, chronic-care coordination, innovation in care delivery and innovation in payment. This exemplifies why it can be difficult to accept the superiority of one country over another in the 22 dimensions of ranking.

Some key elements are missing. For example, all countries are challenged by the need to adapt and implement new technology for health care. When I led a review in 2018–19 to help the UK National Health Service to plan its future workforce and directions, I learnt that it has a body, Health Education England, responsible for education and training, that helps the service to adapt to major changes such as incorporating genomics, digital medicine and artificial intelligence into daily medical practice. Few countries have such an organization and can demonstrate such commitment. Why, then, the United Kingdom has seen so many COVID-19 deaths is a discussion for another day.

Emanuel mentions the words "telemedicine" and "continuous patient monitoring" only once, which is consistent with his previously stated disregard for their potential. As we're all now finding, any evaluation of health systems needs to incorporate their use of digital technology.

Despite these caveats, the book provides a systematic, deep assessment useful for health-policy wonks grappling with the new question posed by COVID-19. Namely: which country has the worst health care? Tragically, we're finding out.

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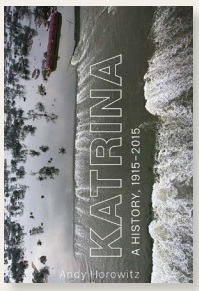
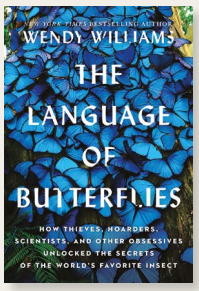
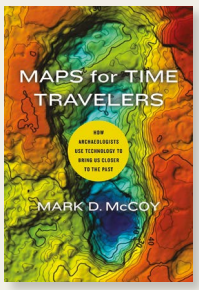
Books in brief



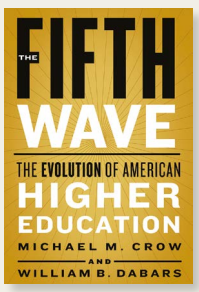
Katrina: A History, 1915–2015
Andy Horowitz Harvard Univ. Press (2020)
In 2005, Hurricane Katrina drowned New Orleans, Louisiana, killing hundreds of people, destroying thousands of homes and ejecting more than 90,000 African American residents. Then-president George W. Bush called it "a tragedy that seems so blind and random". Not so, as historian Andy Horowitz documents disturbingly; much of it was human-led. New Orleans has seen 92 hurricanes or tropical storms over 300 years, including one in 1915 that prompted the city's expansion. Most housing built after 1915 flooded in 2005, unlike most built before.



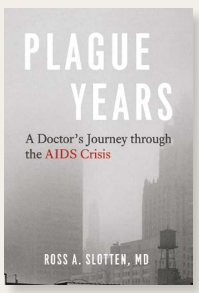
The Language of Butterflies
Wendy Williams Simon & Schuster (2020)
Butterflies charm like no other insect. The "real butterfly effect", argues journalist Wendy Williams in her enthusiastic portrayal, is "the joining together of countless people of many different nations" to protect this creature — including many scientists. In 1862, naturalist Henry Walter Bates came to the rescue of Charles Darwin's recent, controversial *On the Origin of Species*. He showed that harmless Amazon butterflies mimic the colours of toxic species to protect themselves. "Deceptive dress", said a delighted Darwin; "scam artists", writes Williams.



Maps for Time Travelers
Mark D. McCoy Univ. California Press (2020)
From the 1940s, radiocarbon dating gradually transformed archaeology. Now, geographic information systems are transforming the past again, using technologies such as satellite imagery and 3D laser scanners. In his impassioned study written to change popular perceptions of archaeology, anthropological archaeologist and science-fiction lover Mark McCoy argues that treasure maps are giving way to maps for time travellers. "It is time", he writes, "to say, 'Goodbye, Dr. [Indiana] Jones. Hello, Doctor Who.'"



The Fifth Wave
Michael M. Crow & William B. Dabars Johns Hopkins Univ. Press (2020)
History has seen four waves of US higher-education institutions: colonial colleges; state-chartered colleges and universities of the early republic; land-grant colleges and universities established in the Civil War; and major research universities founded in the later nineteenth century. The "fifth wave" proposed (pre-COVID crash) by president of Arizona State University (ASU) Michael Crow and colleague William Dabars, with ASU as its prototype, aims to serve students currently excluded by background and parental income.



Plague Years
Ross A. Slotten Univ. Chicago Press (2020)
"Epidemics happen for a reason," writes Ross Slotten, a gay man and family doctor in Chicago, Illinois, who treated people with AIDS in the 1980s and still works with some of the 40 million globally living with HIV. He singles out as causes: ease of international travel; increased promiscuity; rapid spread of other sexually transmitted infections; political failure to authorize funding early enough; and the disruption of traditional life by colonialism and civil wars. All resonate through his powerful, humane and stylish memoir. **Andrew Robinson**