

- **New York Times**

## The Hardest Questions Doctors May Face: Who Will Be Saved? Who Won't?

As coronavirus infections explode in the U.S., hospitals could be forced to make harrowing choices if pushed to the brink. Planning is already underway.

Dr. Laura Evans outside the University of Washington Medical Center in Seattle, where she is helping lead the response to the coronavirus outbreak. Credit... Grant Hindsley for The New York Times

**By Sheri Fink**

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The medical director of the intensive care unit had to choose which patients' lives would be supported by ventilators and other equipment. Hurricane Sandy was bearing down on Bellevue Hospital in New York City in 2012, and the main generators were about to fail. Dr. Laura Evans would be left with only six power outlets for the unit's 50 patients.

Hospital officials asked her to decide which ones would get the lifesaving resources. "Laura," one official said. "We need a list." After gathering other professionals, Dr. Evans checked off the names of the lucky few.

Now, she and doctors at hospitals across the country may have to make similarly wrenching decisions about rationing on a far bigger scale. Epidemic experts predict an explosive growth in the number of critically ill patients, combined with severe shortages of equipment, supplies, staffing and hospital beds in areas of the U.S. where coronavirus infections are surging, hot spots that include [New York](#), [California](#) and [Washington State](#).

Health workers are urging efforts to suppress the outbreak and expand medical capacity so that rationing will be unnecessary. But if forced, they ask, how do they make the least terrible decision? How do they minimize deaths? Who even gets to decide, and how are their choices justified to the public?

Medical providers are considering these questions based on what first occurred in China, where many sick patients were initially turned away from hospitals, and now is unfolding in Italy, where overwhelmed doctors are withholding ventilators from older, sicker adults so they can go to younger, healthier patients.

Choosing between patients "goes against the way we used to think about our profession, against the way we think about our behavior with patients," said Dr. Marco Metra, chief of cardiology at a hospital in one of Italy's hardest-hit regions.

In the United States, some guidelines already exist for this grim task. In an effort little known even among doctors, federal grant programs helped hospitals, states and the Veterans Health Administration develop what are essentially rationing plans for a severe pandemic. Now those plans, some of which may be outdated, are being revisited for the coronavirus outbreak.

### **Share Your Story**

*The New York Times would like to hear from health care workers about their experiences.*

But little research has been done to see whether the strategies would save more lives or years of life compared with a random lottery to assign ventilators or critical care beds — an option some support to avoid bias against people with disabilities and others.

Some commonly recommended rationing strategies, researchers found, could paradoxically increase the number of deaths. And protocols involve value judgments as much as medical ones, and have to take into account the public's trust.

If hospitals withhold treatment by age, where do they draw the line? If they give lower priority to those with certain underlying health conditions, they may in effect be offering black Americans less treatment than white Americans. If physicians try to redirect resources — putting a patient on a ventilator for a few days, then giving it to someone else who appears to have better prospects — more people may die because few would get adequate treatment. And if many patients have a similar chance of survival, what fair way is there to make a choice?

The federal government, so far at least, is not providing national rationing guidelines for the coronavirus outbreak. Officials from various states, medical associations and hospitals are discussing their own plans, potentially resulting in very different decisions on life-and-death matters about which there are deep disagreements, even among medical professionals.

“You have to be really clear about what you are trying to achieve,” said Christina Pagel, a British researcher who studied the problem during the 2009 H1N1 flu pandemic. “Maybe you end up saving more people but at the end you have got a society at war with itself. Some people are going to be told they don't matter enough.”

## **‘The Most Good’**

Just before the coronavirus outbreak, Dr. Evans, the physician at Bellevue, moved across the country to direct the intensive care unit at the University of Washington Medical Center in Seattle. The city became one of the first areas in the United States to see community spread of the virus.

The hospital is doing whatever it can to prevent the need to ration — what Dr. Evans referred to as “an ethical obligation.” Like other institutions, it is trying to increase supplies, training staff to act in roles that may be outside their usual jobs and postponing elective surgeries to free up space for coronavirus patients. Some cities are racing to construct new hospitals.

Strategies to avoid rationing during the pandemic were published by the [National Academy of Medicine](#). But hospitals across the country vary in their adherence to such steps. At the University of Miami's flagship hospital, surgeons were told last Monday to cancel elective surgeries, but across the street at Jackson Memorial Hospital, they were "given wide discretion over whether to cancel or proceed," according to an update sent to physicians.

Dr. Evans is working with health leaders in Washington State to figure out how to implement triage plans. Their goal, she said, would be "doing the most good for the most people and being fair and equitable and transparent in the process."

But [guidance endorsed and distributed](#) by the Washington State Health Department last week suggested that triage teams under crisis conditions should consider transferring patients out of the hospital or to palliative care if their baseline functioning was marked by "loss of reserves in energy, physical ability, cognition and general health."

The concept of triage stems from Napoleon's battlefields. The French military leader's chief surgeon, Baron Dominique Jean Larrey, concluded that medics should attend to the most dangerously wounded first, without regard to rank or distinction. Later, doctors added other criteria to mass casualty triage, including how likely someone was to survive treatment or how long it would take to care for them.

Protocols for rationing critical care and ventilators in a pandemic had their beginning during the anthrax mailings after the Sept. 11 attacks, but have not previously been implemented.

Dr. Frederick M. Burkle Jr., a former Vietnam War physician, laid out ideas for how to handle the victims of a large-scale bioterrorist event. After the SARS outbreak stressed Toronto hospitals in 2003, some of his ideas were proposed by Canadian doctors, and they made their way into many American plans after the H1N1 pandemic in 2009. "I have said to my wife, 'I think I developed a monster here,'" Dr. Burkle said in an interview.

What worried him was that the protocols often had rigid exclusion criteria for ventilators or even hospital admission. Some used age as a cutoff or pre-existing conditions like advanced cancer, kidney failure or severe neurological impairment. Dr. Burkle, though, had emphasized the importance of reassessing the level of resources sometimes on a daily or hourly basis in an effort to minimize the need to deny care.

Also, the plans might not achieve their goals of maximizing survival. For example, most called for reassigning a ventilator after several days if a patient was not improving, allowing it to be allocated to a different patient.

But rapidly cycling ventilators might not give anyone enough chance to improve. When the coronavirus causes severe pneumonia, doctors are finding that patients require treatment for weeks.

In Canada, a study of H1N1 patients found that 70 percent of those who would have been withdrawn from ventilators after a five-day time trial if a rationing plan had been implemented actually survived with continued care.

Researchers at a British hospital [had similar findings](#), concluding that “a new model of triage needs to be developed.”

## A Score Card and a Lottery

Many of the original plans in the U.S. were developed exclusively by medical personnel. But in Seattle, public health officials gathered community input on a possible plan more than a decade ago.

Some citizens feared that using predicted survival to determine access to resources — a common strategy — might be inherently discriminatory, according to [a report on the exercise](#). Citing “institutional racism in the health care system,” they were concerned that the metrics for some groups, like African-Americans and immigrants, would be skewed because they had not received the same quality of care.

There were similar findings in Maryland, where [researchers at Johns Hopkins](#) engaged residents across the state in deliberations over several years.

The researchers presented them with several options. Hospitals could assign ventilators on a first-come, first-served basis. Some thought that could disadvantage people who lived far from hospitals. A lottery struck other participants as more fair.

Others argued for a more outcome-oriented approach. One goal could be saving the highest number of lives, regardless of factors like age. A different goal could be saving the most years of life, a strategy favoring younger, healthier patients. Participants also considered whether those playing a valuable role in a pandemic, like medical workers who risked their lives, should be made a priority.

After the project ended, the Hopkins researchers designed a framework that assigns scores to patients based on estimated probability of short- and long-term survival. The latter was defined by whether the person had a pre-existing life expectancy of at least a year. Ventilators would be provided, as available, according to their ranking. The framework recommends a lottery for lifesaving resources when patients have identical scores. Stage of life may also be used as a “tiebreaker.” Decisions should be made by designated triage officers, not individual doctors caring for patients, and there should be a limited appeals process in cases of resource withdrawal, the protocol said.

The public input led the Hopkins researchers not to incorporate most exclusion criteria.

Dr. Lee Daugherty Biddison, one of the effort’s leaders, said that was because most participants were uncomfortable excluding patients with underlying health issues. Preconditions don’t always predict survival from respiratory viruses, and having chronic diseases like diabetes, kidney failure and high blood pressure often tracks with access to medical care. Rationing based on these conditions would be “essentially punishing people for their station in life,” Dr. Biddison said.

The Hopkins group [published a description of the framework](#) last year, and doctors from other Maryland hospitals are teleconferencing twice a day to prepare to

implement the plan if conditions grow extreme. Dr. Biddison has also been sharing the recommendations with doctors across the country.

In Pennsylvania, Dr. Douglas B. White, chairman of ethics in critical care medicine at the University of Pittsburgh School of Medicine, is using the Hopkins protocol to help prepare hospitals in his state.

In Colorado, Dr. Matthew Wynia, a bioethicist and infectious disease doctor, is working on a plan that would also assign a score. In his rubric, the first considerations are odds of survival and expected length of treatment. He said there was wide agreement among planners “not to make decisions on perceived social worth, race, ethnic background and long-term disability status,” which some fear could happen if doctors had to make seat-of-the-pants judgments without guidelines.

He is also trying to ensure that patients on admission to Colorado hospitals are asked whether they would forgo a ventilator if there were not enough for everyone. “One thing everyone agrees on is that the most morally defensible way to decide would be to ask the patients,” Dr. Wynia said.

He supports the idea of reassigning ventilators in certain cases. “If things are clearly getting worse, it’s really hard to justify a stance of once you’re on a vent, you own it, no matter how many people have to die in the meantime,” Dr. Wynia said.

Unlike in Italy, where age has been used in rationing treatment, some people developing protocols elsewhere have de-emphasized it. “There are arguments about valuing the young over the old that I am personally very uncomfortable with,” Dr. Pagel, the British researcher, said, including that young people should be a higher priority because they have more life ahead of them.

“Where is your threshold? Is a 20-year-old really more valuable than a 50-year-old, or are 50-year-olds actually more useful for your economy, because they have experience and skills that 20-year-olds don’t have?”

## A Right to Know

As Hurricane Sandy intensified outside Bellevue in 2012, Dr. Evans referred to New York State guidelines, [since updated](#) — which some hospital leaders have said they will follow if overwhelmed by the coronavirus — on how to allocate ventilators in a pandemic using a scoring system that tries to estimate someone’s chance of survival. She pulled together an ad hoc committee of doctors, ethicists and nurses. “Having a system and procedures gave us a sense we had some control of the situation,” she recalled.

For those about to lose electricity, she and her colleagues stationed two staff members at the bedside of all patients who relied on ventilators, preparing to manually squeeze oxygen into their lungs with flexible Ambu bags.

Looking back, Dr. Evans feels the patients and their families had the right to know that their machines would lose power, but in the crisis they hadn’t been told. The doctors also did not think to ask whether any patients or their families might volunteer to give

up a power outlet so that it could be provided to someone else. “It wasn’t even on my radar,” Dr. Evans said.

In the end, it was improvisation that prevented tragic rationing at Bellevue. The generator fuel pumps failed, but a chain of volunteers hand-carried diesel up 13 flights of stairs. Dr. Evans’s patients were all maintained on backup power until they were transferred to other hospitals.

“I remember it really vividly,” she said of the experience. “It’s going to stay with me my entire professional career.”

David D. Kirkpatrick and Andrew Jacobs contributed reporting.