antibiotics and finding strategies for preventing or treating infections that don't rely solely on antibiotics.[1] Nonprofit organizations could participate in developing new vaccines to prevent infections, as well as immunotherapies, nutritional-deprivation strategies, inflammatory modulators, and other approaches to treat them.[3]

The greatest challenge associated with a nonprofit-driven model is identifying seed capital for establishing such organizations. In this regard, we believe that making a one-time investment of a billion dollars to create several new nonprofits that sustainably discover and develop new antibiotics might be a better long-term investment than perpetually offering multibillion-dollar prizes or other pull incentives for each new antibiotic.

Shifting to a new model of drug development will naturally threaten players with vested interests in for-profit discovery of antibiotics. Traditionalists will probably argue that nonprofits cannot replace for-profit industry as a vehicle for innovation. But for-profit companies haven't been able to reliably generate sufficient income from the sale of new antibiotics to satisfy shareholder demands for revenue growth, despite frequently focusing their efforts on antibiotics with larger perceived markets at the expense of addressing unmet needs.

The economic outlook for development of antibiotics will worsen over time as new ones reach the clinic and contribute to an ever-more commoditized market. The increasingly loud drumbeat calling for additional subsidies for the pharmaceutical industry to develop new antibiotics conflicts with the realities of the daunting U.S. federal debt that has been driven up by high health care costs, the low esteem in which the public holds the pharmaceutical industry, and rising concerns about the costs of pharmaceuticals. Such dynamics will impede policies that include new pharmaceutical subsidies, irrespective of their potential effectiveness.

An alternative model for sustaining discovery of antibiotics is overdue. We believe it is time to seriously consider the establishment of nonprofit organizations for developing these lifesaving drugs.

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

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Bearing Witness

Christopher Hartnick, M.D.

You can't walk into a pediatric intensive care unit (PICU) anywhere in the world without being viscerally struck by sights, smells, and sounds that can easily overwhelm the uninitiated. Every child in a PICU is attached to various monitors that seem to reduce that child's life to a set of vital statistics to be charted and plotted on screens at the bedside or the nurses' station. The monitors beep in various pitches and cadences to send coded signals to the ICU team, the cacophony often threatening to drown out any individual audio message. The stinging odors of hand sanitizer and bleach announce a never-ending war against infection. In the most modern PICUs, each

child may have a private room, and one or both parents may have a bed in the same room so they can stay at their child's side.

Last month, walking through a beehive of frenetic activity in the clean but densely packed PICU of Bloom Children's Hospital in San Salvador, El Salvador, I encountered the sights, sounds, and smells I expected as a pediatric surgeon who spends a fair amount of time in the PICUs of my home hospital in Boston. The biggest difference that struck me immediately was the nearly imperceptible distances between the beds or cribs, as the PICU staff struggled to squeeze every inch out of the too-little space in order to care for a seemingly endless influx of children in need. I found the front of my legs touching the bed of the child I was examining while the back of my legs rested against the bed of another child. Nurses squeezed between the beds to take vitals, clean their patients, and tend to incisions, wounds, and infections. Residents monitored the medicines and texted findings to each other and their attendings, perpetually tapping away at their phones.

Other than the close quarters, most of this was familiar. But where were the parents of these sick children? Nowhere to be seen.

I have traveled all over the world, from Ecuador to the Philippines, and I've found that no matter the color of people's skin, the language they speak, or the physical circumstances of their hospital, parents have a fervent hope for their child to get well, and health care practitioners form incredibly strong bonds with their patients. If there were no parents in this PICU, I doubted their absence was attributable to a lack of caring — on the part of the parents, the nurses, or the doctors. Parents had a half hour in the morning and a half hour in the evening to see their child; in this overpopulated PICU, there was simply no room for more.

One morning, our team — which works through the Massachusetts Eye and Ear Operation Airway to care for children in low-income countries and teach local nonprofit health care providers how to develop their own airway surgical programs — had finished rounding on our patients. We were sitting in a small room adjacent to the PICU, sipping coffee, reviewing the cases of the children we'd operated on the previous day and those we were about to see, when we heard a woman wailing outside the door.

If there were no parents in this PICU, I doubted their absence was attributable to a lack of caring — on the part of the parents, the nurses, or the doctors.

We followed the sound into a dark, narrow hallway connecting the PICU to the changing rooms and then to the operating rooms. There, on low-set chairs or on the floor of the corridor, sat the parents. They looked up at us as we passed, registering us as foreign as we chatted with each other in English.

One mother, the one we'd heard wailing, stood up quickly as we walked by. Her eyes were still teary, and her long hair bounced from side to side as she spoke so quickly that I struggled, with my faulty Spanish, to understand. Fortunately, our team included someone who could translate. The woman's son was 11 years old and in the PICU, she told us. He had been there for days. He was not getting better. He was a good boy. Could we help him? We asked her name and went back into the PICU to look for her son.

José was lying in a bed almost directly in the middle of the busy unit but was unconscious — unaware of and unresponsive to the commotion around him. I could see the brown mestizo skin of his face peeking out from the gaps in the tape securing his breathing and feeding tubes. I learned from the nurse who cared for him that he'd told his mother 3 weeks earlier that he had a terrible headache, and he'd since been diagnosed with an inoperable brain tumor. His condition had rapidly deteriorated, and soon he could neither breathe nor feed on his own. There are no end-of-life measures in El Salvador and no discussion of whether treatment can or should be actively withdrawn, but the clear, watery fluid that filled his urine bag was an ominous sign that his kidneys were shutting down and a hint that the end was near.

When our team went back to talk to José's mother and tell her how much we wished we could help but had nothing to offer, she shook her head. "I can't be with him tonight," she said. "Visiting hours are only from 6 to 6:30, and he will be all by himself tonight. The doctors and nurses

are so busy taking care of all the other patients. Please just be with him tonight and talk to him."

I warn new members of our mission team they will see and experience things that may shock them. The disease can be much more severe than what they're used to. I thought we had prepared ourselves well for most such shocks. But we were not prepared for José's mother's plea. There was nothing to say other than that we would do as she asked.

José died that evening without a sound. His body simply gave out. The next morning, after rounds, we saw his mother and father and two uncles coming in to retrieve his body and find a coffin. We told his mother how he had died, that he had not been in pain, and that he had not been alone. She wrapped her arms around each of us and cried.

We put together a collection to help José's family buy him a coffin. We spent another week at the Bloom Hospital, operating on as many children as we could and caring for them and their families; I hope and believe we did some good. But as Elie Wiesel once said, "For the dead and the living, we must bear witness." Bearing witness to José's death may have been the smallest but most powerful thing we did. José's care had not been part of our mission in San Salvador, and clinicians tend to see our role as trying our best to make people better. But sometimes our calling is simply to be there for patients and their families, even when medically there is nothing more to be done.

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