Contents

Prologue: Three friends and a river

PART ONE: Modern medicine
  Veronica’s headache
  The current standard of care
  Expensive and ineffective

PART TWO: How we got here
  The era of the partialists
  The rise of the comprehensivists

PART THREE: Change agents
  My journey upstream
  Social medicine in action
  Meet the upstreamists

PART FOUR: Challenges
  Jumbled regulations
  Medicine’s mindset

Money talks

PART FIVE: The future is upstream

How to grow upstreamists
A new workforce
Targets for change
Health care transformation, powered by you
Conclusion: A quiet revolution

Afterword by Paul Farmer
Appendix A: Core attributes of upstreamists
Appendix B: Solutions from within health care
Resources
Thanks
About the author
About TED
The upstreamist considers it her duty not only to prescribe a chemical remedy but also to tackle sickness at its source.
Dedication

To Shilpa and Samaya, for your love and laughter.

And to Mom, Dad, Gaurav, and Emily.
Prologue: Three friends and a river

There’s a story widely known in public health circles about friends who come upon a river. I first heard a version of it years ago from Adewale Troutman, head of the health department in Louisville, Ky., and now president of the American Public Health Association. Based on my experience as a physician, I retell the story this way:
Three friends approach a wide, beautiful river. Far off, they see the river leading to a waterfall. The idyllic scene is shattered by the cries of a small child in the water, flailing his arms while struggling to stay afloat. He’s fast approaching the waterfall. To their horror, the friends see other children struggling in the water. They immediately jump in to rescue the children. One by one, they try to bring them to safety. The relief and gratitude from the rescued children buoy their spirits. They’re successful, but not always. Soon, the rescuers start to realize that the number of children in need isn’t going down. They look upstream, and all they can see are more children struggling in the water. They get back to work, heroically redoubling their efforts. One of the friends focuses on saving kids at risk of
drowning right away. Another manages to coordinate floating branches into a makeshift raft, ushering other children to safety. But the children keep coming, and the current gets stronger. After a while, two of the rescuers look up, exhausted. The third friend is swimming away from them, upstream, helping a few children along the way. In despair, one of the rescuers shouts out from downriver, “Hey! Come back! Where are you going? There are more children to save!” The other rescuer keeps swimming upstream, tired but determined. She shouts back to her friends, “I know. I’m going to stop whoever or whatever is throwing these children in the water!”
In this book, I argue that the future of health care depends on growing and supporting more “upstreamists.” These are the rare innovators on the front lines of health care who see that health (like sickness) is more than a chemical equation that can be balanced with pills and procedures administered within clinic walls. They see, rather, that health begins in our everyday lives, in the places where we live, work, eat, and play.

Upstreamist practitioners — who may be doctors, nurses, or other clinicians — know that asthma can start in the air around us. They understand that obesity, diabetes, and heart
disease partly originate in our busy modern schedules, in the unnatural food choices available in our communities, and even in the way our neighborhoods are designed. They know that ailments such as depression, anxiety, and high blood pressure can arise from chronically stressful conditions at work and home. They see how policies that afford or deny opportunity, fairness, and justice can be reflected in patients’ faces as well as in their DNA. And, just as important, these caregivers understand how to translate this knowledge into meaningful action. The upstreamist considers it her professional duty not only to prescribe a chemical remedy but also to
tackle sickness at its source.

I use the term “upstreamist” intentionally because I want to expose the shortcomings in the way we have come to define health and the role of medicine in improving it. There aren’t nearly enough of these pioneers, but if you look around in health care today, you’ll find them. They work in small practices and community health centers, in hospitals and large health care systems. Their stories are not widely known, though in some places these innovators have been around for a while as known and beloved neighbors. The upstreamists care for patients, but they also
redesign the way clinics and hospitals improve health for people and entire neighborhoods. They leverage emerging technologies, build partnerships with patients and the community, draw on skills and approaches outside of medicine, and lead and participate in teams of health care professionals and community-based partners. Together, they demonstrate that medicine can do better when it works to improve health where it begins: in the social and environmental conditions that make people sick or well.

If our high-cost sick-care system is to
transform into a high-value health care system, the upstreamists’ paradigm and practices will make the difference.
PART ONE: Modern medicine
Veronica’s headache

It was an unseasonably warm spring day in South Central Los Angeles in 2011. I had joined this community clinic three years before and had set about implementing an upstreamist approach. Veronica, a 33-year-old woman, sat in my exam room, her head in her hands. Her otherwise tall and formidable figure was slouched over in pain. This was not the first time she had felt this way. For more than a year, her headaches had come and gone. And each time, the pain would ripple through her life, disrupting her family and work.
This episode was no different. She had missed about seven days of work as an office manager at an auto parts dealer in the past month. Veronica’s employer, who was understanding, would see her in pain and insist that she leave early and seek help. But the headaches kept coming, straining her relationships at work. Her home life started to suffer, too. It was hard for her to sleep. She often had to call on her aging mother to care for her two sons when Veronica needed to visit the doctor or simply to rest. At school events and her sons’ after-school activities, Veronica was often unable to focus. Usually a stoic woman, she considered herself unflappable.
in the face of adversity. But these days, she admitted, she was fatigued and often irritable.

Three weeks earlier, Veronica had gone to a local emergency room to seek relief. After a battery of tests, a doctor prescribed her some pain medications. Then she gave Veronica instructions to return to the emergency room if the pain worsened or persisted. The medicines helped for a short while, but they often left her drowsy and unfocused. The pain persisted. So, following instructions, she returned twice more to a local emergency room. All told, she underwent at least a dozen blood tests, two CT scans, and a spinal
tap — a procedure in which a needle is placed in the lower back to collect and test a sample of spinal fluid. But for Veronica, each visit to the emergency room ended the same way: She was told her test results were “normal,” sent home with more pain medication, and advised to seek a primary care physician.

Veronica had already tried that approach. When she had visited primary care clinics for headache flare-ups, her experiences hadn’t inspired much confidence. The doctors and nurses seemed rushed. She heard a lot of talk about tests and short-term medications. One
doctor wondered if Veronica was exaggerating her pain simply to get narcotics. Despite multiple visits, she didn’t feel much better. In fact, she told me, that’s why she went to the emergency room in the first place.

When I met Veronica, she was exasperated. A $1,200 bill for her first hospital visit had arrived at her home. At work, her boss was growing concerned. Veronica was concerned about losing her job. Without a steady income, she worried about paying the rent, roughly $850 per month. She fought back tears as she described the toll this was taking on her family.
And she grimaced often. On top of everything else, Veronica was still in pain.

Veronica’s story is far too typical in our health care system. Her experience has become commonplace, not just in low-income neighborhoods but in middle-class and more affluent communities as well. Access to quality care is a problem. And even when care is available, it is often poorly coordinated, expensive, and stressful.

When Veronica came to our clinic, though, we did things slightly differently.
The clerk checked Veronica in. The medical assistant recorded vital signs and collected standard information about her health. This is a typical process for many clinics. But then the medical assistant ran down a simple checklist, asking Veronica a few routine, evidence-based questions about her housing. Veronica indicated that her apartment had some problems with mold, water leaks, and roaches. These answers went into her chart, along with other important data. I briefly reviewed the chart and opened the door to greet her.

Knowing where Veronica lived made a
world of difference. I asked her to tell me more about her home and her headaches. She lived with her sons in a two-bedroom, ground-floor apartment in South Los Angeles, not far from the clinic. Veronica insisted that she kept her home as clean as possible, but persistent leaks had led to chronically damp, moldy conditions and the roach infestation. Her landlord hadn’t helped, and she couldn’t afford to move. As she talked, I followed up with more questions and began a targeted physical exam. Within 15 minutes, I felt pretty confident in my diagnosis: Veronica had migraines related to chronic nasal allergies and sinus congestion. These conditions are often
caused or made worse by dampness, mold, roaches, and other markers of substandard housing. I asked about her sons’ health. Her eldest was under a pediatrician’s care for severe asthma, another health problem often related to bad housing. I explained my concerns and prescribed her medicines to help with the symptoms. Then I referred her to a program run by our clinic in partnership with two local organizations to help make her housing healthier. One of the partners was a tenants’ rights advocacy group long active in South Los Angeles. The other was a community development agency that created affordable housing and trained
residents to become community health workers.

Within a few days, a community health worker from our clinic visited Veronica. She taught her new techniques for controlling dampness in her home. Then, with the help of our partners, she helped Veronica contact the landlord, this time with a doctor’s note and information about local housing codes that the landlord was obligated to meet.

Veronica came back to the clinic a few months later for a routine follow-up visit. She hadn’t been to the emergency room. Her home
was healthier. Her allergies lingered but had improved, and her headaches were gone. Her son’s asthma was less active. Veronica and her family had gotten better.
Perilous Waters
These everyday forces flow together to shape our health

Unequal power
Gross inequity in power and opportunity disrupts both mental and physical health.

Low income
Wealthier people tend to be healthier, no matter their race.

Sprawl
As suburbs spread and commutes lengthen, people walk less and sit more.

Unhealthy houses
Mold, pests, and unsafe conditions foster asthma, allergies, and injuries.

Health care access
If you're uninsured or have few clinics nearby, you're less likely to see a doctor.

Poor education
The lower your education level, the less healthy you're likely to be.

Social isolation
A lack of social support can lead to depression and even heart disease.

Pollution
Industrial toxins and car exhaust fuel asthma and cancer.

Cars as kings
Streets designed mainly for car traffic discourage walking and biking.

Food options
What's available and affordable naturally influences what we eat.

Unsafe streets
Violence keeps people indoors and produces injuries, trauma, and chronic stress.

Find more detailed information on these and other health factors in the resources chapter and at upstreamdocs.org.
The current standard of care

To improve Veronica’s headache, the health care system had to address where she lived. Why did Veronica go so long before she got that type of care? Did she have to suffer as long as she did? The great irony is that many of the health care professionals who had cared for her provided what is generally considered adequate care. On each occasion, doctors and nurses initiated a diagnostic workup involving expensive machines
and procedures. They prescribed medications to help relieve her pain and instructed her to seek further evaluation if required. Based on what we know about Veronica’s experience, most people, including myself, would not find these clinicians at fault for negligence. In fact, on an individual basis, each clinician’s approach was probably well within the bounds of what we consider the current standard of care.

The problem, of course, is that the current standard of care isn’t working. Instead of addressing the cause of disease, health care in the U.S. has long focused on just treating its
symptoms. We fixate on the headache and ignore the home. Once upon a time, interacting with patients in their homes and communities seemed like an obvious, integral part of doctoring. But in the last century or so, the culture of medicine has largely been shaped by an exuberant overemphasis on the biologic and molecular phenomena of disease. Improving the social conditions that shape health has become an afterthought.

And that’s the irony. When clinicians ignore the home — or any of the other factors that shape our health — their treatments often are less
effective. In clinics and hospitals across the nation, we repeatedly miss precious opportunities to understand and improve people’s health in the context of their social and physical environments. These opportunities are often obscured by the transactions of pills and bills that have come to define the health care experience for many patients and providers. For patients like Veronica, the medical system fails to reduce suffering because it simply doesn’t collect the right data or equip providers with the right tools to address the factors that shape our health where it begins.
This disconnect is striking, especially when one considers the forces that determine how healthy we are as a society. As the *New England Journal of Medicine* reported in 2007, medical care accounts for only about 10 percent of the variation we see in health outcomes. Consider that statistic from another perspective. Let’s say someone asks you to review all the accumulated science about what determines a society’s health. Next, they give you a menu of interventions and $100 in small bills. Based on what you learned from your review of the evidence, you’re given the task to spend that $100 in whatever way you want with one purpose in mind: Create the
greatest health you can for your population. You’d be wise to spend only about $10 of your budget on medical care and spend more on improving social and environmental factors such as substandard housing, job stress, poverty, discrimination, and dangerous neighborhoods — what experts often call the “social determinants of health.”

When we think about what really shapes our health, medical care is just one relatively minor force. Experts often think of five general health-defining forces: genes and biology, behavior, medical services, social environment (the ways in
which we relate to each another), and physical environment. The latter two, often referred to together as the social determinants of health, are significantly more powerful drivers of wellness than is medical care. The social determinants are shaped by the power and resources that people have, all of which are influenced by the policy choices we make as a society. These policies, in turn, influence the behaviors and choices you and I make every day. For instance, a growing body of research indicates that how close people live to affordable, healthy food outlets or safe, green parks plays a role in their choices to eat healthily or to exercise.
Where we live and work clearly impacts our health behaviors. And these social and environmental forces are also capable of changing our DNA, literally. Epigenetics, an emerging field of science, examines the link between environmental exposures and the regulation of our genes, especially as they pass from one generation to the next. New discoveries in epigenetics reveal that exposure to toxins, such as chemical pollution or even severe emotional stress, can significantly affect the health and development of individuals and their children. For instance, a study reported in the *Economist* in
2011 showed that children born to mothers who experienced stress and psychological abuse during pregnancy were significantly more likely to have DNA changes that reflected a higher sensitivity to stress hormones compared with children of women who did not suffer abuse. Stress and abuse, in turn, are most often linked with poverty and other socioeconomic factors.

The nature vs. nurture debate can no longer be viewed as a battle between equals. The impact of nurture — in the form of the social and environmental settings that surround us — is far
more powerful than we’ve ever imagined. These are the forces that shape or distort our genes, our behaviors, and the landscape of opportunity in our communities.

The current standard of care often ignores these forces. This lack of attention leads to missed opportunities to effectively alleviate suffering and can sometimes even contribute to more suffering. Think of the costs for Veronica. While bouncing in and out of the health care system, Veronica stacked up major opportunity costs. Instead of spending time at work or with her family, she spent days in a hospital or clinic looking for help.
The direct economic costs were just as bad. Just one of her three emergency room visits resulted in a bill roughly equivalent to one month’s rent.

Then, ironically, this experience with the health care system took its own toll on her health. Each time a hospital or a clinic discharged her with nothing more than pain medicine, the system unwittingly sent Veronica — without adequate warning, protection, or tools — back to her home, the place where her illness first started.

Besides Veronica, I’ve cared for many other individuals who suffered health problems caused
or worsened by factors in their home, work, or school. Take Edward, a 34-year-old carpenter with asthma. He was an avid Los Angeles Lakers fan. Between construction jobs and on most evenings, he played basketball with his 16-year-old daughter. When he told me about that father-daughter time, I could tell it was a source of joy. He was proud of her athletic skills. When the economy soured, Edward and his family had moved to a less expensive home that was still close enough to his daughter’s school. Within six weeks of the move, however, Edward’s asthma worsened. Their new home was about 500 feet from a major freeway, well within the range of
airborne particulate matter from passing cars and trucks. He frequently wheezed and felt short of breath. Even worse, the breathing problems made it harder for him to play basketball with his daughter, partly robbing him of the activity he most enjoyed.

I remember Elizabeth, a 41-year-old single mother of three. She had a dignified and slightly weathered demeanor that made her seem wiser and older than her years. When we started talking about her health, Elizabeth took out an old photo that she carried her in purse. It pictured a group of smiling women of various
ages standing arm-in-arm at an outdoor birthday party. I recognized a noticeably younger and thinner Elizabeth in the photo, which had been taken five or six years earlier at a cousin’s house. Shortly after that party, her mother became ill and moved in with Elizabeth and her family. Elizabeth found it difficult to exercise and eat healthy meals while shuttling between her job in a middle school office and her responsibilities as her mother’s caregiver. Elizabeth’s weight increased significantly and, before too long, she was diagnosed with diabetes and obesity.

Another patient, Maria, had trouble sleeping
and suffered anxiety due to the threat of gang-related violence in her neighborhood and her concern for her 13-year-old son’s safety.

In each case, these patients had received care from clinics for weeks, months, and even years, only to have the social or environmental context of their disease ignored. It’s like mistakenly and repeatedly sending someone suffering from radiation exposure back to a home near the site of a nuclear power plant meltdown, without protection or help. The health care system’s difficulty in caring for patients with health problems that are related to social factors
is not always so severe, but it’s certainly widespread and worthy of our concern and scrutiny. In a landmark 2008 report, the World Health Organization articulated health care’s dilemma in straightforward terms: “Why treat people only to send them back to the conditions that made them sick in the first place?”
Total health expenditure per capita, public and private

2009

United States
Norway
Switzerland
Netherlands
Luxembourg
Canada
Denmark
Austria
Germany
France
Belgium
Ireland
Sweden
Icealand
United Kingdom
Australia
OECD
Finland
Italy
Spain
New Zealand
Japan
Greece
Slovenia
Portugal
Israel
Czech Republic
Slovak Republic
Korea
Hungary
Poland
Estonia
Chile
Russian Federation
Brazil
Mexico
Turkey
South Africa
China
India
Indonesia

Public expenditure on health
Private expenditure on health

1. In the Netherlands, it is not possible to clearly distinguish the public and private share related to investments.
2. Health expenditure is for the insured population rather than the resident population.
3. Total expenditure excluding investments.

Source: OECD Health Data 2014; WHO Global Health Expenditure Database.
Expensive and ineffective

For some, Veronica’s story is a sad by-product of a generally benevolent medical system that must be tolerated. After all, for every person unable to get help from the health care system, there are many others who are well served by the current standard of care. From this perspective, the pain felt by a few Veronicas is simply the price we begrudgingly pay so that the majority of us can enjoy the best medicine in the world.
Others oversimplify and contend, sometimes cruelly, that patients like Veronica are the real culprits for a dysfunctional health care system. They blame people for making poor personal choices, leading unhealthy lives, and placing unfair costs and burdens on everyone else. You’ll even hear some doctors make this point. Our current standard of care is fine, they say. If it weren’t for the bad behaviors of patients, our health care system would work much better.

For me and many other clinicians and health experts, these explanations are neither satisfactory nor sufficient. The current standard
of care itself is simply unacceptable, from a moral and economic perspective. No matter how you look at the performance of our medical system, what has come to pass as the standard of care is far from cost-effective. In the U.S, health care spending represents 18 percent of our gross domestic product. That comes to about $8,000 per person every year, more than any other nation has ever spent on health care. But the return on that investment is pretty poor. Among all nations, the U.S. ranks 37th in health status. In fact, Americans — both rich and poor, minority or not — are experiencing a widening health
disadvantage compared with citizens of other wealthy nations. The Institute of Medicine, established in 1970 as the health arm of the National Academy of Sciences, recently completed an exhaustive 405-page review of this gap. The authors put it plainly: Comparing the U.S. with 16 other wealthy nations, “we uncovered a strikingly consistent and pervasive pattern of higher mortality and inferior health in the United States, beginning at birth.”

In the U.S., recent changes in the law have made health care more accessible and affordable for millions of Americans. The Patient Protection
and Affordable Care Act of 2010, aka Obamacare, will increase the number of insured Americans by around 27 million by 2017 through a combination of mandates, tax credits, and subsidies to employers and individuals. One of the law’s lesser-known benefits is a major national expansion of community health centers like the one I worked in when I met Veronica. Up to 20 million additional Americans will access care at these sites in the next few years. Many clinicians, including me, have welcomed and even championed these reforms, knowing that far too many people have lacked access to health care for far too long.
But the major problem with the current standard of care still looms large. In a 2011 survey, the Robert Wood Johnson Foundation found that four out of five doctors in America believed that their patients’ social problems — those social determinants of health — were as important as their physical health problems. But only about one in five doctors felt confident in their ability to help patients with social ills.

The good news is that it’s a problem with a solution. I called Veronica recently to see how she was doing. It had been nearly a year and half
since her first visit with me. Her allergies and migraines were under control, less frequent, and less severe. Many of the problems at home had abated, but she was still working to get the landlord to make additional repairs.

To reach the solution, though, we must first acknowledge the shortcomings of our own assumptions about the nature of the problem itself. We have to see past the imagined boundaries of the clinic walls and the role of the clinician. Then we’ll see that health care can be better. And it will take the upstreamists to get us there.
PART TWO:
How we got here
The era of the partialists

For a long time, doctors have been the quintessential downstream service provider, deeply committed to rescuing people when they fall ill. This work is invaluable and noble. Many times, it’s literally lifesaving. Jack Geiger, considered the father of the community health center movement that now serves more than 20 million Americans every year, said of his heart attack, “I wouldn't be here were it not for the
health care system.” The same sentiment is shared by many people who, not surprisingly, tend to believe that it is the medical system — with legions of rescuers at the ready — that is largely responsible for keeping us well. After all, when we think of health, we tend to think of health care. We picture stethoscopes and scalpels. We envision doctors and nurses trying, often heroically, to save patients’ lives. We think of hospitals humming with expensive machinery, bustling clinics, and packed waiting rooms. We lament, rightly, that millions of people still lack insurance, and we advocate for more people to have the ability to access care in these settings. In
our shared imagination, the concept of health has been shaped by this downstream activity, where doctors and nurses discover and treat disease.

To be sure, a large number of fortunate people with significant illness are helped by health care professionals working downstream. To people who suffer heart attacks, cancer, or major trauma, for instance, expert clinicians can make the difference between life and death. But, as Geiger himself has long noted, we’re now recognizing that this downstream approach is not enough. Chronic diseases like diabetes and hypertension are on the rise. The tide of people
needing rescue continues to swell, and many aren’t being healed. Meanwhile, health care spending in the U.S. approaches nearly $3 trillion a year.

How did this happen? How did we end up with a high-cost, low-value system that underperforms compared with systems in other parts of the developed world? The answer largely lies in the way we’ve structured health care payments and incentives. Over a long period of time, we’ve simply paid more for downstream rescue work than for upstream preventive work. Policy experts and researchers have long
bemoaned the perils of this approach. In March 2013, a report by the National Commission on Physician Payment Reform joined the chorus. It cited the fundamental flaw in our reimbursement system; we still predominantly pay medical providers each time a patient gets a service, rather than paying for improving health. It’s called “fee-for-service.” The more services that are delivered, the more doctors and hospitals get paid. This has held true regardless of who pays for health care, from Medicare and Medicaid to private health insurers and employers. And even as we compensate for services, we pay a lot more for some services — like expensive, high-tech tests
and procedures — than for others — like the time it takes a clinician to think, evaluate, come up with a plan, and help a patient follow it.

To get a better feel for the absurdity of the fee-for-service model, think of how this would look in a different endeavor, like renovating a bathroom in your home. The most sensible approach would involve getting estimates from contractors and negotiating a fixed payment with one of them in return for a renovated bathroom. You’d pay for an outcome, a better bathroom. But let’s say you used health care’s financial approach instead. In this scenario, you would
agree to pay the contractor based on the services he provided, not for the bathroom you wanted. Each time the plumber replaced a faucet, you’d pay. Each time the electrician tested the circuitry, you’d pay. And following this model, you would have agreed to pay the contractor a higher rate for installing fancy amenities, even if you didn’t need or want them. Over time, this fee-for-service approach would lead most contractors to overcharge and overserve. At the end of the project, you’d likely have a bathroom cluttered with extra bathtubs and light fixtures. It wouldn’t be the most functional bathroom, but it would certainly be the most expensive one on the block.
The fee-for-service approach impacts the most mundane of activities in medicine, like how doctors document and bill for the services they provide. Compared with costly procedures, submitting claims for preventive services like wellness exams or nutrition and exercise counseling have long been a challenge for most doctors. Traditionally, third-party payers didn’t routinely reimburse for prevention. By making it easier to order and bill for procedures instead of prevention, the fee-for-service model influences the choices and behavior of doctors, nurses, and patients who operate within it day to day. It has
made it easier, for instance, to order multiple, expensive CT scans for someone like Veronica instead of spending time to understand the social context of her illness and prevent her from bouncing in and out of emergency rooms and clinics. In fact, the problem of patient bouncing is often not an accident; it’s a symptom of our business model. This combination of financial incentives drives other problems, like price gouging and runaway premiums that distort and even subvert the critical work of rescuing people downstream.

These incentives have affected not only the
practice of medicine but also the way the health care workforce has developed. Over time, our skewed model has led to a relative abundance of higher-paid specialists, who tend to do more procedures compared with primary care clinicians, who must spend more of their time listening to and evaluating patients and managing their care. The work of the rescuer became more specialized, as practitioners began to focus their care almost exclusively on specific body parts and diseases. They became what Paul Grundy, IBM’s global director of health care transformation, calls “partialists.” Technical proficiency was prized, while other critical abilities were undervalued,
including the ability to effectively communicate with patients and to coordinate care with other providers. Partialism spread among specialists, like surgeons or interventional cardiologists, and among traditional primary care clinicians as well. Responding to financial incentives, many doctors and hospitals built procedure-heavy practices, delivering care over multiple episodes, often in different places and at different times, leaving patients to bounce from provider to provider. Health care costs went up as lucrative tests, high-tech diagnostics, and brand-name medicines were overused even as unbiased research demonstrated that these interventions often offered little to no
additional value. But people weren’t getting any healthier. In the end, just as in the story of the three friends at the river, this downstream rescue effort proved insufficient.
The rise of the comprehensivists

In response, we’ve seen a recent large-scale movement to train and equip another type of provider, the “comprehensivist.” (IBM’s Grundy coined this term. He’s also president of the Patient-Centered Primary Care Collaborative, a set of large employers, provider groups, and private insurers looking to transform health care.)

Comprehensivists are skilled project
managers who focus on the needs of the whole patient, not a particular organ system or disease. They coordinate the moving parts of the health care system, focusing on quality, access, and the integration of patient care. Rather than delivering care exclusively through partialists, a comprehensivist-oriented system calls for an outcome-driven, team-based approach that helps patients navigate the maze of clinical care. Driving the transition toward a comprehensivist approach is an increasingly popular concept called the patient-centered medical home. The idea originated in the 1970s with the work of a Hawaiian pediatrician named Calvin C.J. Sia. He
and his colleagues noticed that families with children with special needs had a hard time juggling treatment plans from several different specialists. As a result, families and doctors tended to focus on acute problems, leaving less time for basic preventive care like physical therapy or improved nutrition. Sia sought to decrease the disruption, miscommunication, and emergencies experienced by these families. He suggested that the children receive a “medical home,” a continuous system of care originating with a primary care pediatrician responsible for understanding the big-picture needs of her patients. Over the next three decades, Sia and
other proponents marched forward with efforts to implement and demonstrate the benefits of this approach.

In 2007, four national societies of primary care physicians issued a joint statement that put their weight behind the medical-home model, paving the way for the modern comprehensivist. At least 19 other groups of health care providers have since signed on. They have made a simple but bold recommendation: Instead of requiring patients to shuttle among disparate partialists on their own, everyone should have a personal doctor who creates and leads a team of other
doctors, nurses, and specialists based on the needs of the patient. Shortly after the original statement, pilot programs showed that such medical homes can lead patients to use hospitals and emergency rooms less and can help reduce health care costs. Based on this success and the impetus of Obamacare, the federal government, insurers, employers, and health care systems are now trying to align policies and incentives to scale up the patient-centered medical home nationwide.

This large-scale shift toward the comprehensivist approach is welcome. As a front-
line clinician, I’ve been involved with building and leading teams to be patient-centered medical homes for some time now. I have seen the benefits of the model for people with significant medical and social needs, from low-income working families in South Central Los Angeles to homeless veterans. It’s not easy, but it is rewarding. Like many primary care clinicians, I’ve found it more fulfilling and effective to approach my work as a comprehensivist than as a partialist. There’s still more work to be done to realize the potential of this approach. Payments to health systems and doctors still don’t do enough to support the vital work of evaluating
and managing care. Procedures and tests are still overvalued. Productivity, measured in the numbers of patients seen, often trumps quality, measured in the numbers of patients who get better. Nonetheless, the shift has begun. Momentum is growing.

Still, something is missing. Even if our health care system finds a better balance of comprehensivists and partialists, it won’t be enough. Like the story of the three friends, we’ll still be downstream, working with just two of the three types of people required in the health care workforce. Our hospitals and clinics will still be
underequipped to address the forces — the social determinants of health — that throw people into the water. We won’t be addressing health and disease where it begins — where we live, work, eat, and play. To be truly transformed and complete, health care needs more than just partialists and comprehensivists. We need more upstreamists.
PART THREE: Change agents
My journey upstream

In 1998, Manchanda learned from these upstreamists of the Chinmaya Organization for Rural Development in
Sidhbari, northern India. Community health workers and educators are standard, vital elements of upstreamist models around the world.

In late February 1998, less than a year after graduating from college in Boston, I was in Sidhbari, a rural community nestled in the outer chain of the Himalayas in northern India. As late winter warms to spring, Sidhbari’s sloping hills sprout tall grass and bloom with the bright yellow flowers of mustard plants ready for harvest. It’s an idyllic view for local farmers, touring honeymooners, and the occasional Bollywood cinematographer. Dharamshala, a hillside town
famous for hosting Tibet’s government-in-exile and religious truth seekers from the West, is a few miles away. At night, lights from Dharamshala and other towns flicker in the distance like tired fireflies, unable to compete with the shimmer of stars thick in the sky above.

I was not a farmer, nor a filmmaker, nor a religious seeker. I was in Sidhbari on a different pilgrimage: to learn about health. During college, biology had fascinated me, especially the intricate physiologic mechanisms that mediate our health. But I was also fascinated by the stories of poorer places in the world where indicators of
widespread health — such as the death rate among infants — were as good or even better than health outcomes in the prosperous U.S. or Western Europe. Kerala, a relatively poor state in southwest India and a spice-trading hub for nearly 5,000 years, is one such place. In the summer before my senior year of college, I did field research in Kerala on the state’s impressive health outcomes. I found that the health successes there were inextricably linked to state investments in social development, as reflected, for instance, in nearly universal literacy programs.

When I returned to India after college to
explore the intersection of health and social development in the country’s other regions, my employers at a New Delhi think tank recommended that I travel far north to Sidhbari. The local Chinmaya Organization for Rural Development (CORD) was renowned for its visionary approach to improving health. CORD had many of the apparent trappings of health initiatives in other parts of the world; it ran clinics, organized health education and outreach projects, and dispensed medications. All told, the group provided direct services to more than 20,000 people each year in a rural region in desperate need of health care.
CORD organized groups called *mahila mandals* as forums for rural women to discuss personal and economic concerns, facilitate access to micro-
credit, and participate in health-promoting activities. Members in Sidhbari took part in meetings, left, as well as bookkeeping and management, right.

What made CORD special, however, was that it targeted health by focusing on improving the lives of women. The status of women around Sidhbari was dismal. Far fewer girls lived to their first or fifth birthdays, compared with boys. Jobs were scarce, the prevalence of alcoholism had skyrocketed among local men, and the domestic violence it fueled was commonplace. By all accounts, women lacked a strong voice in their homes and villages. CORD’s leaders had realized that delivering medical services wouldn’t suffice
to improve health here; they also had to give women and girls the tools to attain power and tackle local problems. Health statistics are scarce in this region, but a state survey (encompassing Sidhbari and other areas) found that access to prenatal care grew and infant death rates dropped from 1993 to 2006.
In some rural settings in northern India, gender discrimination often forces girls to remain at home and help with the care of siblings. Meera, a CORD educator, talks with a group of girls in Sidhbari about health.
One chilly February evening, I stood in a warm room where 10 women of varying ages sat on rope-framed charpoys, chatting and sipping chai. A group of adolescent girls sat in the middle of the room, knee to knee on a clean, hard-earth floor, whispering and giggling softly. A young health educator, Meera, stood up and introduced the evening’s topics, including vaccines and basic sexual education. Then she handed out pieces of paper. Each slip bore nine dots, arranged in neat rows and columns:
Meera offered a challenge: Draw lines to connect all nine dots. You must use no more than four straight lines, she said, and you must complete the puzzle without lifting the pencil off the paper or tracing the same line more than once. (Readers, if you’re up for it, try this puzzle before reading on.)

Papers rustled as the girls got to work. Some
tried to solve the puzzle alone, others huddled to share ideas. Their whispering grew louder. The women started chiming in from the charpoys. Some of them started drawing on extra sheets of paper, their brows furrowed in concentration. Meanwhile, I stood scribbling in a corner, frustrated and self-conscious, scratch marks covering my nine defiant dots.

A girl piped up and said the puzzle couldn’t be solved. Meera took her piece of paper and drew four simple lines without lifting her pencil:
People get stuck on the puzzle because they imagine a boundary around the edge of the dots, she explained. To connect the dots, one has to draw lines outside the confines of the square.

Meera passed her paper to one of the girls. They all leaned in to examine it closely. The women on the charpoys had stopped drinking their chai. Some solutions, Meera explained, can be found only after we acknowledge the limits of
our own beliefs — our imagined boundaries — about the nature of the problem itself.

It has been 15 years since that winter evening, but I continue to call upon the dots’ simple yet effective lesson. In those rural villages, from Sidhbari to Kerala, I first began to understand health as a social phenomenon that starts and ends outside the clinic walls. Along the way, I met doctors who embodied what I now refer to as an upstreamist approach. They provided direct services to individuals in need while at the same time working to improve the social conditions that impacted the health of
entire communities. I decided to follow their example. I returned to the U.S. in 1998 and set out to become that kind of doctor.
Social medicine in action

Returning from India, I enrolled in a joint degree program in medicine and public health at Tufts University, an institution with an ethos of active citizenship and service learning. Then I made a commitment to care for underserved patients by joining the National Health Service Corps, a U.S. Department of Health and Human Services program that funds schooling for health professionals who agree to go on to provide
primary health care services in communities in need. After moving to California and completing my medical residency at UCLA, I worked for a short time as a primary care doctor for homeless adults at the nation’s largest free clinic, near Venice Beach. But I was drawn to a network of community health centers in South Los Angeles that was doing some interesting work around housing with a coalition of community partners. The coalition included tenant organizers, advocates for homeless residents, and health workers called *promotoras*. Promotoras are lay members of the Latino community who receive specialized training to provide health education
and help people connect with health resources.

Once a week, on my day off from my clinic in Venice Beach, I drove to South Los Angeles to coordinate the coalition’s effort to describe the health aspects of the growing homelessness problem. It was a transformative experience. This was the type of medicine I wanted to practice, caring for people with medical and social needs while helping a community address the causes of homelessness at their root. Within a few months, a clinic CEO asked me to come on board as an assistant medical director.
The community clinic was one of the largest in Los Angeles, providing services to nearly 35,000 patients a year. I thought back to the lessons I had learned before medical school about health in its broadest context. I reflected on the limitations and opportunities inherent in the predominantly downstream approach that I was starting to witness as a young doctor. Even as a respected vanguard of community engagement, for instance, the South LA clinic was constrained by a business model that often required its doctors and nurses to see upward of 30 patients a day. Like many clinics, it was paid based on the number of people it treated, not how healthy its
patients became. Instead of simply playing a role in supporting that business model, I proposed a slightly different approach. Could I be a primary care doctor but also focus on helping to redesign the way the clinic addressed the upstream social factors driving disease in the community? The CEO, a longtime advocate for health and social justice, agreed, and I became the clinic’s first director of social medicine and health equity.

The pace of learning and work picked up immediately. During my clinic sessions, I treated working dads and moms for their diabetes and hypertension, and performed school physicals for
their kids. I filled out endless piles of forms to try to get patients the specialty care they needed, and placed phone calls to my patients, labs, pharmacies, or social workers. (Due to a perennial shortage of specialists in low-income communities, I was often unsuccessful in finding specialists to care for my patients in a timely manner. This phenomenon speaks to an irony of today’s health care workforce. While we have too many specialists (or partialists) compared with primary care physicians, there are still too few partialists in communities where the need for them is greatest.)
In much of America, this is the stuff of primary care. I was also learning on the job about being a comprehensivist. My colleagues included other doctors, nurse practitioners, physician assistants, benefits counselors, behavioral and mental health counselors, and pharmacy technicians. Having this wonderful array of service providers under one roof, while unusual for most private practices, is relatively common in our nation’s community health centers. This gives the centers a leg up when it comes to the comprehensivist approach; many have already figured out how to better coordinate care in a team of providers.
Over the next three years in South Los Angeles, I also developed my skills as an upstreamist. When I wasn’t caring for 20 to 30 patients a day up to four days a week, I met with and learned from local community health workers, organizers, public interest lawyers, and housing developers. They became my colleagues and teachers. I visited families living in shelters or homes in disrepair to learn more about the substandard housing conditions that contributed to the illnesses, such as asthma or allergies, that I saw nearly every day in the clinic. Their stories taught me how a complex web of social
challenges — like having no job or health insurance and struggling for stable housing and food — can entangle people in states of poor health. By visiting people in their homes and workplaces, I was able to recognize the dignity and resilience they often displayed in the face of these challenges. I remember a 59-year-old woman whose back pain was frequently aggravated by spending three hours a day commuting by bus between her jobs as a seamstress and a nanny. She started these jobs after her husband had suffered a debilitating stroke, losing his income, and she was scrambling to stave off an eviction. I recall young parents,
ages 21 and 24, who endured frequently broken, backed-up plumbing and a roach infestation that made it unbearable to cook at home. To feed their young children, the parents instead often took them to fast-food restaurants.

I found myself adapting some of the techniques and skills that my community partners used in their work. I was learning how to mobilize people, build teams, and work across disciplines. Back in the clinic, I listened and asked with greater focus, intent on learning more about my patients’ lives, hopes, and frustrations, and the needs in their community, while tending to
their symptoms.

In January 2010, I sent out a simple survey to community leaders to better understand these needs. This survey included a question that often goes unasked by hospitals or clinics, in poor and rich communities alike: “What social and environmental needs in the community should our health care system be better equipped to understand and help improve?” The top three answers we received from community leaders were clear: Focus on food insecurity and slum housing, they said. And create a patient-centered medical home to deal with people’s medical and
social issues. These messages served as guideposts for my work as the clinic’s lead upstreamist.

To me, this was easily the most meaningful work I could be doing to improve health outcomes as a clinician. I revamped the clinic’s old patient screening form, using questions about housing-related risk factors that I had adapted from the American Housing Survey, the comprehensive national questionnaire developed by the U.S. Census Bureau. This was the set of questions my medical assistant had asked Veronica before I saw her on that memorable spring day.
We recruited an experienced coordinator for this work, and, together, she and I started training staff and clinicians about ways to screen and refer patients with housing-related health problems to appropriate resources. We realized that many of our colleagues wanted to help recognize and treat patients’ health-critical social needs but had never received specialized, actionable training on how. So, with their input, I developed an easy, hands-on monthly curriculum to teach clinicians what they needed to know about social determinants of health, even in the midst of a busy schedule. One day, we organized
a “house call” in which nearly all of the clinic’s 20 doctors, nurses, and physician assistants visited patients in their homes, accompanied by community health workers and housing experts.

Before these upstreamist interventions, surveys I had conducted revealed that my fellow clinicians felt ill-equipped to care for people with housing-related health problems. Only a quarter of them felt somewhat prepared to help this type of patient. Remarkably, in less than a year, we nearly tripled that sense of confidence. All told, we identified nearly 12,000 children and families like Veronica’s with risk factors associated with
substandard housing. We created a “housing needs” triage system and worked with local tenants’ rights organizers and community health workers to create a joint approach to case management for the sickest children with the highest burden of housing-related problems. Families like Veronica’s received frequent education and support, in home and by phone, about ways to reduce housing triggers for asthma. The families in the program reported 50 to 90 percent improvements in the status of their housing and health compared to the way things had been before.
I had started to learn firsthand how good it felt, as a clinician, to apply an upstreamist approach to improve health. I shared a sentiment expressed by Cornell Cooper, an upstreamist surgeon in Maryland: “It’s incredibly satisfying to know you are being effective.”
Meet the upstreamists

My own experience as an upstreamist informs a lot of what’s in this book. But I’ve also had the chance to interview others. They include colleagues, thought leaders, personal heroes, and pioneers who exemplify the upstreamist approach. The innovators who inspire me apply upstreamism at all levels of the health care structure, from highly specialized surgery to broad health care policy to primary care. They demonstrate the kind of real healing that’s possible, even as they still struggle against the
challenges in a system that doesn’t support them.
I invite you to meet a few.

Maryland’s vicious cycle of gun violence, interrupted

With the tragedy in Newtown, Conn., in December 2012, the U.S. went into mourning. The media decried a long-standing epidemic of gun violence, helping to get this public health crisis some long overdue attention by policymakers. For medical professionals in
America’s hospitals, gun violence is an all too common daily occurrence. Surgeons bemoan a revolving door phenomenon. Gunshot victims lucky enough to survive the bullet undergo surgery to stay alive. After healing, survivors return back to the community where they were shot. Many then return to the hospital, shot again or dead. The vast majority are young black men ages 15-34, for whom violence remains the leading cause of death.

In considering this crisis after Newtown, I recalled a New York Times story on Carnell Cooper, a surgeon at the University of Maryland.
Frustrated by the vicious cycle of gun violence and health care’s apparent inability to stop it, in 1998 Cooper moved upstream. By 2011, the article noted, the violence prevention program that Cooper had started included “social workers, a parole and probation agent and physicians specializing in psychiatry, trauma, epidemiology and preventive health. They visit with the patient throughout the hospitalization and on a regular basis after discharge, helping to provide access to services like substance abuse rehabilitation, job training and G.E.D. tutoring and offering the support necessary for successful completion of the patient’s plan.”
Among the 1,500 victims of violent crime and their families that the program has served, clinicians have seen an 83 percent drop in repeat hospitalizations for violent injuries. Beyond this impact on participating individuals and the hospital, the initiative’s effect on the community has been remarkable, partly because the victims of gunshot wounds can sometimes be the perpetrators of gun violence. The program has demonstrated a 75 percent reduction in criminal activity and an 82 percent increase in employment among participants.
The intervention seems to have been born of necessity and Cooper’s own history. As CNN reported in 2009, the surgeon was born to unwed teenagers in Dillon, S.C., and grew up in a neighborhood where violent crime was common. He could identify with many of the young African-American men who were bouncing in and out of his operating room.

Cooper’s program was among the first of 21 hospital-based violence prevention programs that now exist around the country. Despite their success, these programs have found it challenging to sustain themselves
financially. They tend to rely heavily on time-limited grants from philanthropists instead of receiving funding from the hospital or health system. In fact, many hospitals get more reimbursement from payers for providing surgery than for reducing gunshot-related morbidity, let alone ameliorating local crime or unemployment. They simply have no financial interest in improving health outcomes by working upstream. These challenges notwithstanding, the work is clearly worthwhile. The *Times* article ended with Cooper’s statement that had begun to ring so true to me in Los Angeles: “It’s incredibly satisfying to know you are being effective.”
Better neighborhood design in California

“I wanted to work more upstream,” physician Charlene Hauser told me recently. Hauser was particularly interested in the built environment — the places and spaces created by
people, including buildings, parks, and transportation systems. That interest started early. Hauser, now in her late thirties, grew up in rural southern New Jersey, where her family had to drive long distances to get around. She realized how the physical environment influenced the way people lived. After attending college in Pennsylvania, she earned a joint degree in medicine and public health and started a residency program in surgery. But during her first year of surgery, something happened: "I sat down one day and looked at the list of our patients on the surgical floor. About 75 percent of them we had operated on for diseases related to their
behaviors and the way they lived. I realized I was trying to save people at the end of a long disease process, when all I could think about was the root of the problem."

Hauser transferred to a family medicine residency program at the University of California, Davis, and moved to Oak Park, a small, historic, and troubled neighborhood in Sacramento that was close to the hospital where she worked. Within a few months, surveyors started knocking on doors in the neighborhood. They wanted residents’ opinions about the design of a new double-drive-through McDonald’s slated
to be built nearby, just a quarter mile from an existing Jack-in-the-Box. Hauser and her neighbors pushed back. Why, they asked, would they want another fast-food restaurant built between their homes and the hospital? The double-drive-through was particularly irksome. It would be located right in the middle of a residential neighborhood, built with sidewalks and a bike lane. The driveway would cross the sidewalk where six children who lived and played next door often created chalk paintings. Hauser and her neighbors saw many potential public health issues, including healthy food access, air quality, and threats to bike and pedestrian safety.
They organized a community group called Healthy Development for Oak Park, and over the next two years, while Hauser continued her residency, they successfully blocked the building of the restaurant.

That experience taught Hauser to appreciate the role of the built environment in her patients’ lives. “I started asking every single patient, like my patients with diabetes, for instance, about where they lived,” she told me. “Do you live in a place with sidewalks? Is it a safe place to walk around or exercise? Do you have access to stores where you can buy healthy food?”
Hauser recalled how this new approach resonated with her colleagues, many of whom shared an interest in the intersection of clinical medicine and public health. “It made us all think a lot more about social determinants of health for our patients.”

So did this increased awareness ripple up to affect how her clinic or residency program operated as a whole? For instance, was the medical record system used to record patients’ answers to questions about safe or healthy neighborhoods? Did the clinic make it easy to connect patients to community groups like the
one she worked with in Oak Park? Alas, Hauser said, no. Her clinic’s operations, administered by the large academic hospital that housed it, hadn’t caught up with the awareness shared by the young doctors who worked within it. Hauser recalled how even small changes could have made an impact. For instance, she would have liked to use the TVs in the waiting room to educate patients about the connections between health and neighborhood design. Instead, they usually aired daytime talk shows and court dramas.

Hauser has since finished her residency and
moved from Oak Park. She practices family medicine in a rural community an hour outside Sacramento. She has brought her upstreamist worldview to her work, where she routinely advises patients, some of whom are retirees who find themselves spending more time at home on the couch, about local walking trails and other resources for healthier living. She also has joined a local effort to build a pedestrian path that will allow her own daughter and other families in her neighborhood to walk to the nearby school instead of driving.
Healing through the land on Oahu

Located on Oahu, Kokua Kalihi Valley Comprehensive Family Services (KKV) started in 1972 as a community-led project to address the
unmet health needs of more than 30,000 local residents, many of whom were new immigrants. Its first four employees were women who spent each day going door to door getting to know community members and their lives and stories. The organization then developed programs to serve the needs they identified, from medical services to a community loan program and transportation assistance. David Derauf joined KKV as its clinical director in 1989. During his first weeks on the job and ever since, he has frequently asked himself, “At the end of the day, in what way are our clinic visits making a positive change in the community?” It’s a curiosity
common to many upstreamists.

Over the past 150 years, waves of immigrants from Japan, Samoa, Tonga, the Federated States of Micronesia, the Philippines, and other parts of Southeast Asia have made the community around KKV home. When KKV started, many residents suffered from poor nutrition, diabetes, hypertension, heart disease, and asthma. There were high rates of teen pregnancy, drug and alcohol abuse, domestic violence, and unmet mental health needs. In community meetings, clinic staff discovered that many families came from an agricultural
background in their home countries but were now living in dense public housing. They felt displaced and disconnected from their land, culture, and way of life. Many of the local health problems, they said, were symptoms of this displacement.

So, in one of its biggest recent initiatives, “The stewardship of Ho‘oulu ‘Āina,” the clinic sought to tackle this displacement. Derauf and his colleagues in 2005 secured a lease for 100 acres of state land that had become a dump and, with the help of community volunteers, started to transform several acres into an organic
community farm where patients could reconnect with their roots. Clinic patients with diabetes who regularly participate in farming activities have already started to show improvements in long-term control of blood sugar and weight. But there’s another change that Derauf believes is even more important. “The land has facilitated a deeper healing,” he explains. The initiative is “bringing neighbors together across cultural divides and restoring both immigrant and indigenous families’ sense of pride in their culture and community.”

Like many community health centers, KKV
has long aimed to provide a comprehensivist model of care and is seeking certification as a patient-centered medical home. Still, Derauf wonders whether health care goes so far as to financially support programs like Hoʻoulu ʻĀina that exemplify the upstreamist approach. “We reconnect the health of the land to the health of people,” he says.

Breathing easier in Seattle
Whether as a parent or a clinician, caring for a child with an asthma attack can be unnerving. Small air passageways in the lungs tighten and fill up with inflammatory secretions that can literally prevent a child from breathing. The prevalence of asthma has increased
dramatically in the U.S. over the past few decades, particularly among children. And as James Krieger knows, the connection between asthma and substandard housing is probably better understood than any other pairing of disease and social determinant of health.

Krieger took an atypical path into medicine. He was an organizer in the 1970s, working in health care unions in Massachusetts. Along the way, he met a physician in the National Health Service Corps who convinced him that becoming a doctor would give him the credibility and power to change health care for the better. In
medical school, Krieger continued to view health in its broader social context, advocating for human rights in Central America and gearing his studies to gain a nuanced understanding of the social determinants of health.

After he became chief of chronic disease and injury prevention for the Seattle and King County Public Health department in 1989, Krieger began to focus on asthma. Rather than simply advocating for more inhalers and clinic visits, he decided to work with community partners and demonstrate that a robust program to improve upstream housing conditions could
help asthmatic children.

An emerging model called Healthy Homes was being endorsed by the federal Department of Housing and Urban Development and the Environmental Protection Agency as a way to reduce indoor asthma triggers. The model involved home environmental surveys to assess allergens and irritants, as well as education to help residents take low-cost actions to reduce their exposure and advocate for better housing. Krieger built off this model and, starting in 1999, organized community health workers to visit homes and provide education and assistance to
families with asthmatic children. They conducted a thorough environmental assessment in each home that led to a kind of shared to-do for the worker and the family. In four to eight subsequent visits, the worker provided further education and encouragement, plus tools like allergy control pillow and mattress coverings, low-emission vacuum cleaners, cleaning kits, and roach or rodent traps. The work led to a landmark report showing that this high-intensity outreach by community health workers could make asthmatic children better. The number of days children suffered from asthma symptoms dropped. Based on parent surveys about their
kids’ emotional functioning and limitations on their activity, the program improved the children’s quality of life.
PART FOUR: Challenges
Jumbled regulations

Despite their successes, there are still not enough upstreamists out there. That’s because there are three basic types of challenges facing upstreamists in health care: regulatory, cultural, and financial. I’ll explain each.

In 2011, as my colleagues and I were becoming more effective in tailoring our care to our community’s social and environmental needs, I realized we needed more information about where these needs were greatest. Were patients
with housing troubles or hunger more likely to live in certain neighborhoods? If so, that could help our clinic, community partners, and public agencies better target our upstream efforts. I found a geographer at a local university and got clinic approval to use a secure, confidential software program to map more than 54,000 patient records based on housing-related illnesses like asthma. We found clusters of asthma in the community that we hadn’t seen before. I wanted to cross-reference that map with local housing code enforcement records to see if our results correlated with data on substandard housing conditions. But getting that geographic data
wasn’t easy. Regulations made it difficult to share records between housing and health agencies. These regulatory barriers represent one of the most significant obstacles to an upstreamist approach in health care.

What if health care providers could easily review data, appropriately secured to protect patients’ privacy, from public housing or code enforcement agencies, from schools or urban planners? Imagine how that would increase the ability of clinics to tailor their care to community needs. Or what if clinics and hospitals everywhere asked patients basic questions about their
housing, schools, and neighborhoods, and then routinely linked the patients in need with community resources that could help? Unfortunately, as I discovered firsthand, regulations aren’t yet aligned to support this type of upstreamist integration among medicine and other sectors.

“All our systems are built on backbones that don’t connect; the systems simply are not allowed to speak to each other,” health policy expert Kavita Patel told me. Patel is the managing director for clinical transformation and delivery at the Brookings Institution’s Engelberg Center
for Health Care Reform. She added, “An upstreamist approach is absolutely important for American medicine. But, for a long time, the regulations and policies that we had in place meant that health care systems and providers couldn’t work with people in other sectors that impact the social determinants of health.”

Regulations and policies within the health care system can also be a barrier, particularly because they define the type of work medical professionals do. As Arnold Milstein, medical director of the Pacific Business Group on Health and an expert on health care payment reform,
puts it, “A conceptual model that includes partialists, comprehensivists, and upstreamists makes sense for the work of population health management in health care. Each of those three key functions must be performed. For this to be wieldy, though, there would also need to be coordination among those three functions. But the nature of how we currently segment and pay for work in the health care system these days makes it very difficult for clinicians and their teams to engage upstream.”

This lack of coordination is reflected in something as simple yet meaningful as how
clinicians are allowed to utilize their time on the job. When I first started out, I squeezed my upstream work into a few hours of administrative time every week. And I had to specifically negotiate when I started my job to even get that dedicated administrative time; it was essential time to improve the way we delivered care, build relationships with community partners, and evaluate what was working and what was not. At a larger level, however, regulations and policies don’t do enough to value this type of time and work. Simply put, upstreamist work is not yet built into the policies that define health care jobs. This applies to clinicians as well as other clinic-
based workers who are key to an upstreamist approach, such as social workers, care managers, and community health workers. They, too, are constrained by workforce regulations that reflect a primarily downstream view of health care.

These regulations can be changed. Like ropes and pulleys, they can be loosened and realigned to great effect when the right amount of energy and force are applied by the public, stakeholders, and policymakers. In recent years, the medical and nursing professions, patient advocacy groups, public and private health insurers, large business coalitions, and health care
systems all have pushed for changes to support the establishment of patient-centered medical homes. This realignment of regulations to support the comprehensivist approach also represents an opportunity to advance an upstreamist approach. The question is whether we all are interested in seizing that opportunity.
Medicine’s mindset

Ask a doctor about the way social and environmental health has traditionally been viewed in medicine, and you’re likely to hear a story similar to this one from David M. Lawrence, former chairman and CEO of Kaiser Foundation Health Plan Inc. and Kaiser Foundation Hospitals:

In my last year of medical school, I was called in by the head of the surgery department. When I walked into his office, he asked, “Where do you want to go for your surgery residency?” Well, I was pretty surprised. I had never
expressed an interest in surgery. When I told him that I was planning to go into primary care and community medicine, he literally, honest to God, turned his chair and back to me and stared out the window. He didn’t say another word. I walked out of his office. Years later, I saw him during a trip to Colorado. He still couldn't believe the choice I had made.

Although that rebuff from his professor happened more than 50 years ago, during Lawrence’s days as a medical student at the University of Kentucky, it reflects a cultural attitude in health care that still rings true for many clinicians and presents an obstacle to an upstreamist transformation in medicine.
There are three basic elements of this cultural challenge: a lack of sociocultural competence; the skewed demographic composition of our health care workforce and its cultural implications (that is, a lack of diversity); and a lack of mentorship.

A lack of sociocultural competence

Patel, of the Brookings Institution, explains that “most health professional schools never bring up social determinants of health in training. So you
have lots of doctors, even in communities with housing-related health problems, for instance, who simply say, ‘Well, we don’t do housing.’”

There are a few notable exceptions, such as the social medicine programs at Montefiore Medical Center in the Bronx, N.Y. Still, too few training grounds exist in medicine that rigorously cultivate this sociocultural competence.

Why? I talked with Elizabeth Wiley, past president of the American Medical Student Association (AMSA), about how cultural attitudes in medicine can be barriers to an upstreamist approach. AMSA represents roughly 68,000
medical students nationwide and has long sought to provide educational opportunities to supplement traditional medical education to help them become more effective doctors. “The concept of the upstreamist, someone who has the skill set to affect social determinants of health and drive systemic changes, is one we would embrace,” she said.

Wiley, who will graduate from medical school this summer, noted some positive signs in medical education. Starting in 2015, for instance, the Medical College Admission Test, the standardized test taken by virtually all medical
school applicants, will contain an additional section on social and behavioral sciences. This is a good step forward. But when it comes to attitudes in health care toward social determinants of health, there’s much more work to do. “The culture of health care doesn’t teach us how to value and work in the social context of health,” Wiley said. “So, for instance, when it comes to the competitiveness of applicants right now, it’s a patchwork. There are no integrated sets of requirements that are making it clear to future doctors that an upstreamist approach is important.”
One result of this cultural blind spot is that doctors miss opportunities for prevention at the time a patient presents with a concern or problem. (Think again of Veronica and her headache.) But this deficit in the medical culture also blinds us to opportunities to intervene before someone shows up in the hospital. Anthony Iton, senior vice president of the California Endowment, one of the nation’s largest philanthropies committed to improving the social determinants of health, taught me the term “sociocultural competence.”

He explained, “I used to give a presentation
about how the health care system sees people, sorted by age. At first, people show up on the health care radar when they’re young; then they fall off. Then men show up again in middle age, usually presenting with symptoms like chest pain. The point of that presentation is that the determinants of what shows up in our clinics and hospitals are shaped 30 to 40 years before the patients and the costs appear. The health care system is not designed to intervene when folks are in their teens or twenties. We spend too much time simply waiting for people to get sick.”
A lack of diversity

Partialists, comprehensivists, and many would-be upstreamists today simply don’t look like the populations they serve. When we talked about the barriers facing an upstreamist approach, Lawrence, the former Kaiser Foundation executive, bemoaned this cultural barrier between the health care system and the patients it serves. “There’s a deep mismatch between what's happening in terms of the demographic shifts in our population and the health care workforce, which remains less diverse,” he said. “Almost
entirely and with little variation, it remains a white and Asian workforce, with very little progress being made in training African-American and Hispanic doctors.”

Studies have demonstrated that this diversity gap between the health care system and patients can have profound effects on the care that patients receive and the availability of care in low-income or minority communities. When clinicians don’t reflect the communities they serve, it becomes that much more difficult to understand health in its social context. Clinicians are more likely to miss important details about
their patients’ medical and social problems.

I once cared for a 50-year-old man from India who worked as a chef at a local restaurant. His English was limited, so his daughter, who spoke English fluently, often accompanied him to doctor visits. He used to frequently repeat the phrase “kind of stomach upset” and gesture to the area just below his sternum to describe a chronic discomfort he had. He said it got a little better with antacids. Based on this story, previous clinicians often prescribed stronger versions of antacids to help. But when I first met him, the way he described his pain, moved his head, and
gestured with his hands reminded me of the way my relatives in India would talk to their doctors. I had seen how a combination of deference and pride could sometimes lead a person to downplay their symptoms in front of a doctor. I asked his daughter to step outside the exam room and dug for more information from my patient, speaking to him in Hindi, a language he knew much better than English. He revealed that he sometimes felt his discomfort coming from his chest but didn’t want to talk about it in front his daughter and felt that he couldn’t explain it well in English. After subsequent testing, we discovered he had a blockage in an artery in his heart. He didn’t
require surgery. But with assistance through nutrition and exercise programs in the community, he changed his diet, started doing light exercise, and took medications to control his blood pressure and cholesterol. His discomfort lessened. Had his previous clinicians known that he had chest discomfort, they certainly would have intervened. But the chance to understand and improve health where it begins for patients and communities can sometimes be lost in translation, even literally.

A lack of mentorship
In some ways, the dearth of mentors for upstreamists is a by-product of the deficits in sociocultural competence and diversity. In the past, there simply weren’t enough upstreamist mentors to guide the careers of students or demonstrate the skills necessary to address the social determinants of health. The importance of mentorship cannot be understated. Consider the recent rise of the comprehensivist approach in medicine. This transition required a critical mass of comprehensivists who could demonstrate this approach in their own practice, champion its
benefits, and serve as mentors to others.

Think of Lawrence, who was a stellar student in medical school. Why did he choose to defy a culture that prized surgery over primary care? Because he had a mentor. His mentor, Kurt Deuschle, was an early upstreamist. In the early 1960s, he founded the Department of Community Medicine at the University of Kentucky — the first of its kind in the United States. Among other things, the department taught students like Lawrence how to do a “community diagnosis” in order to understand people’s health status in relation to their social
and physical environment. Years later, and perhaps not surprisingly, Lawrence headed the Kaiser Permanente hospital system, which is renowned among large medical enterprises for its community health orientation.
Money talks

Each of us responds to an array of financial incentives every day. They influence our decisions and shape our families, work, and culture. Do I buy that phone that just went on sale? Do I eat fast food or cook at home? Rent or buy a home? Use that federal tax rebate to buy an electric car or stick with gas? In this way, our health care system is like us. Its behavior, culture, and regulatory anatomy are all fundamentally influenced by the ecosystem of financial incentives in which the system operates.
As I discussed before, the financial ecosystem has long favored downstream over upstream activity in health care. Financial barriers to a comprehensivist approach have started dropping thanks to the Affordable Care Act, which mandates coverage for preventive services such as mammograms and pap smears. But upstreamist activities that target the local drivers of disease remain woefully underfunded at the federal, state, and local levels. Private funding for these efforts is scarce, too. Even while upstream care is believed to improve value and outcomes, it isn’t yet recognized in the health
care business model.

Like other upstreamists, I felt this every day in my work at the community clinic. For instance, when the clinic needed community-based workers to visit patients’ contaminated homes, or when we sought to partner with public interest lawyers to help patients with legal needs, we had to raise funds from private philanthropies to pay for it. But these donors, vital as they are, are often the first to acknowledge that a solely charity-funded approach is unsustainable. Clinics whose primary revenue comes from fee-for-service can’t sustain upstream services when public and private
insurers don’t pay for them. They can’t recoup the money that society saves when an upstreamist approach is used.

At one time, managers of my South LA clinic actually eliminated administrative time for clinicians in response to economic pressures. This made it incredibly difficult for clinicians to serve as comprehensivists, let alone as upstreamists. Though disappointing, this decision wasn’t surprising. Like so many independently administered nonprofit clinics, this clinic simply didn’t make or save money by improving community health outcomes.
“The fee-for-service model and the disorganization in health care are the enemies of upstreamist reform, because everyone wants to do everything right now,” says Fitzhugh Mullan, a pediatrician and a professor at the George Washington University School of Medicine and Health Sciences and School of Public Health and Health Services. However, more organized health care systems, such as Kaiser — where costs, risks, revenues, and savings are shared — may be more favorable to the upstreamist approach.

Another way the fee-for-service model
tramples the economics of prevention is by restricting opportunities for upstreamist research. That’s largely because the types of services and interventions that we pay for have an influence on the research that we pay for. And that’s why we have a relatively vast amount of research about pharmaceuticals and devices compared with research on prevention and improvements to the social determinants of health.

Mitch Katz directs the Los Angeles County Department of Health Services, the second-largest county health care system in the country. He described to me how economic incentives can
stack up against upstream care. “Because there’s been little money toward prevention, there’s no payer or mechanism for prevention research like there is for medical research,” he explained. “So we don’t know nearly enough about cost-effective prevention cases, about what works in prevention.” This can create a vicious feedback loop. The less we invest in prevention, the less opportunity we have to explore what works. The less we research and explore, the harder it is to make the case to alter our business model. It’s a powerful current for upstreamists to swim against.

“By training and philosophy, I am an
“upstreamist,” Katz said. He undertook his most successful upstream effort as director of San Francisco’s Public Health Department, where he increased alternative supportive housing for homeless adults whose only refuges were emergency rooms, shelters, and the streets. The program created 1,200 supportive housing units and led to improved health and decreased costs.

“But even then, I got a lot of pushback,” Katz recalled. “Even if you save health care dollars from housing, folks want to push it back into [downstream] health care.”

If accomplished upstreamists like Katz have
felt pushback, consider the resistance faced by younger, less experienced professionals who bear witness to the effects of social and environmental problems in their patients’ lives. In clinics and hospitals driven by a fee-for-service model, these potential upstreamists can feel stymied. I’ve found that medical residents and clinicians in these settings routinely express this feeling. Even in their own institutions, clinicians’ upstreamist ideas or innovations rarely seem to get the substantial backing they need. After all, improving health outcomes by addressing patients’ social and environmental needs may actually lead to less demand for clinic visits and
hospital services. This specter can appear distracting or even threatening to a fee-for-service model. In health care and other industries, when the dominant business model is threatened, its adherents sometimes view potentially disruptive innovations with outright skepticism. For would-be upstreamists on the front lines of health care, this can create a chilling effect, an environment that’s ill-disposed toward creativity and innovation.

The net effect of these financial, cultural, and regulatory challenges on upstreamists is potent. For too long, these barriers have created
an imbalance in the work of medicine. Downstream approaches have dominated our imagination.

But as I’ve met and talked with upstreamists around the country, I’ve become convinced that there’s good reason for optimism. Were it not for these upstreamists, a vision of a better standard of care would seem illusory, a distant mirage on the horizon. In fact, meaningful innovation is happening across the country every day, giving us reason to hope for a transformation.
PART FIVE:
The future is upstream
How to grow upstreamists

In mid-2011, I began to reflect more on the lessons I had learned in South Los Angeles. By that time, our clinic’s upstreamist approach was in full swing. The healthy housing program we had set up had helped thousands of children and adults like Veronica. We had worked with a community partner to set up a produce stand and resource guide to help families experiencing hunger and food insecurity. A medical-legal
partnership we had created shortly after I started at the clinic was blossoming. Thousands of patients with legal problems, such as those illegally evicted or mistakenly dropped from their health insurance, had received help. I began to learn ways to leverage technology to identify and help patients with social needs, such as by integrating screening questions about housing and other social needs into our clinic’s new electronic medical record system.

At the same time, however, the limits of the fee-for-service straightjacket were becoming clear. Periodic threats of funding cuts led to increased
pressure to see more patients in shorter amounts of time and to bring patients back for return visits. Finding time and support to help clinicians transform clinic practices and understand social determinants of health increasingly took a back seat to the overriding priority to increase patient volume. Meanwhile, students — including medical and law students, resident doctors-in-training, and undergraduates — were contacting us to learn about our upstreamist approach firsthand. Invitations were arriving to share our work at conferences, as were opportunities to educate other clinicians about how to tackle the social conditions making their patients sick. At
many of these meetings, I met doctors, nurses, and health care workers who shared a deep interest in improving the social forces behind health. Some of them had attempted upstreamist projects on their own. Some were looking to start. Across the nation, it was clear that health care providers lacked the tools and training to improve health where it begins. On an even more basic level, upstreamists were working in isolation.

As my awareness of the scope of these problems grew, my desire to develop scalable solutions became more intense. In October 2011, I reached out to two friends: Laura Gottlieb, a
physician and researcher at the University of California, San Francisco, and Ricky Choi, a pediatrician and clinic leader in Oakland. I made a simple proposition: Let’s try to help health care be better at addressing the conditions that make patients like Veronica sick. Within a few weeks, Health Begins, a kind of think-and-do tank, was born. So far, we’ve piloted an online Yelp-style service to help clinics connect patients to community resources and also a crowd-funding platform to help upstreamists raise funds for health projects. In late 2012, we created an online network to support upstreamists. It has been thrilling to watch nearly 400 health care
professionals (and counting) connect and share upstreamist ideas and innovations.

Along the way, these experiences — plus interviewing nearly two dozen leaders for this book, reading case studies of front-line innovators in health care, and reviewing medical education history — have helped me understand the skills and characteristics that make a doctor or nurse an upstreamist. In sum, upstreamists must be able to work on numerous levels:

- Collaborate across disciplines
- Apply leadership and organizing skills
- Use creativity, resourcefulness, and patience
Command credibility as health professionals
Advocate adeptly in their own institutions and in public
Demonstrate entrepreneurial problem-solving skills
Possess a deep understanding, usually derived from clinical experience, about the social determinants of health, and foster a curiosity about the applied life and social sciences

(I describe these core attributes in more detail in Appendix A. I invite interested readers, particularly those who work in health care, to learn more and share their own perspectives at healthbegins.org.)

The upstreamists show us that the problems in our health care system can be solved. Like the third friend at the river, we first need to break
through traditional boundaries in thinking to re-envision the challenges and opportunities in medicine. But knowing *why* is not enough. The next step is to consider *how* to move toward a health care system that’s designed and ready to improve health where it begins. The good news is that upstreamists are out there. And, with a little reflection on their role and skills, we can focus our energies to train more of them and accelerate the upstreamist transformation in health care.
A new workforce

To be sure, we will always need a medical system equipped with doctors and nurses ready to cure disease and rescue people who fall ill downstream. And, as the comprehensivists are showing us, health care can be more cost-effective and meaningful when clinicians move past rescue mode and work together in teams to better coordinate care for their patients. But to truly realize medicine’s potential, we also need upstreamists, dedicated professionals who redesign care and improve the health of people.
and communities. I envision the optimal medical workforce as an inverted pyramid, flowing from upstream to downstream. The width of each tier implies the potential impact of that segment of the workforce on the health of a community. The wider the tier, the greater the scope of potential impact.*
Experts project that we’ll need around 460,000 partialists by 2020 — roughly 46,000 to 62,000 more than we are currently expected to have — in order to care for a growing population, especially seniors. The partialists will include many of today’s subspecialists, as well as trauma surgeons and emergency room doctors, working in a vital downstream position. We also require more comprehensivists. As the drive to create patient-centered medical homes gains momentum, many of today’s primary care clinicians are well positioned to serve as tomorrow’s comprehensivists. Researchers project that we’ll need around 250,000 primary
care comprehensivists by 2020, some 40,000 to 45,000 more than we are currently expected to have. (This shortfall in primary care physicians is dwarfed by the expected need for registered nurses.) Primary care doctors will increasingly provide and coordinate care for patients with chronic diseases, especially those who frequently visit emergency rooms or require repeat hospitalizations and care by partialists.

Ultimately, however, our health care workforce will be completely equipped to provide the highest standard of care only when it includes the upstreamists. These professionals will have
the skills to redesign their health care systems, large and small, while building bridges to other sectors to improve the quality of care and the social determinants of health. Looking at my inverted pyramid, you’ll notice that the width of each tier increases as you move up. This represents the relative impact and value of each tier on the health of a community or population of patients (as opposed to individual patients).

I project that we’ll need at least 24,000 upstreamists working in U.S. health care by 2020 to achieve significant improvements. To estimate this number, I drew on publicly available data on
the size of the health care workforce and projections from researchers and organizations such as the American Academy of Medical Colleges and the Association of Colleges of Nursing. I also reflected on the experience of other upstreamists and my own tenure in South LA, where I served as a lead upstreamist among roughly 16 full-time primary care providers, including nurse practitioners and physician assistants. I made my estimate using an even more conservative ratio of one upstreamist to 30 clinicians.

To maintain credibility and momentum for
this transformation, we will likely need to recruit and train physicians, nurses, and others with health care expertise to serve as our upstreamists. Many of these providers already exist. Some are practicing today and will need retraining, support, and access to new tools. Other would-be upstreamists will come from the education pipeline as we provide more opportunities for health-professions students to develop their upstreamist skills. In addition, people working in sectors that impact community health — such as law, education, urban planning, transportation, food, and agriculture — are essential to the success of the upstreamist. By definition,
upstreamists in medicine will need to partner with these people in other sectors to create solutions and push the boundaries of traditional care. The work of prevention-oriented researchers and health advocates also will remain invaluable.

How far do we have to go? My colleagues at HealthBegins, the public health startup I founded with other physicians, estimate that there are fewer than 2,000 practicing upstreamists in the U.S. today — a tiny fraction of the roughly 624,000 physicians currently on the job. We have work to do.
Targets for change

Ultimately, each of us, patient and provider alike, can play a role in transforming our health care system. First, let’s review the basic problems that require solutions if we are to spur an upstreamist transformation. These are broadly felt pain points that won’t be solved by innovators within health care alone. Inevitably, some problems will be solved by entrepreneurs and changemakers who see the potential for major economic and social return on investment.
As a result of regulatory, cultural, and financial obstacles, doctors and nurses who aspire to be upstreamists on the front lines face challenges in five key areas. To remember these, think of the acronym TRIDNTT (pronounced “trident”):

1. **Time and Resources** (both human and capital)

2. **Incentives** (at individual and system levels)

3. **Data** that’s accessible and actionable (such as knowing where and how patients live and work)
4. **Networks and support** (from peers, mentors, leaders, and the public)

5. **Tools and Training**

From those who are willing to help patients with the occasional social need to those who are committed to redesigning care in their clinic or hospital, health care professionals will have a hard time becoming upstreamists if these unmet needs are not addressed. In many cases, today’s pioneering upstreamists have found or developed creative ways to address these gaps on their own. But these innovators often ask themselves a critical question: How do we make this scalable
and sustainable?

In Appendix B, I describe some of the solutions and opportunities we could pursue from within the health care field, including practicing clinicians, administrators, insurers, and medical students. We’ll also need help from government, philanthropies, and banks.

How can the rest of us make a difference? Innovative as they are, there are simply too few upstreamists around today to change a whole system, and we can’t expect a lot more people to do this without support. We must support them.
We must help create a cultural shift in which the work of upstreamists in health care is not simply lauded but expected.
Health care transformation, powered by you

Here are six simple ways we can support the work of upstreamists and improve our health care system.

1. “Excuse me, Doctor. Are you an upstreamist?”

There’s a reason why billions of dollars are spent each year by pharmaceutical and medical device
companies on marketing that urges us to “ask your doctor about [insert brand-name drug or procedure here].” This so-called direct-to-consumer marketing works. After seeing a catchy commercial or magazine ad, millions of people walk into their doctors’ offices and ask about the advertised product. Evidence demonstrates that this marketing approach significantly influences doctors’ prescribing behavior, even while doctors often believe that they’re personally immune to such tactics. This influence bears significant negative consequences, such as increased costs due to overprescription of brand-name drugs instead of generics, but we can learn much from
the effectiveness of the tactic itself. We can apply similar patient-driven conversation to engage more clinicians in thinking about creating a better standard of care.

So, next time you visit your doctor, try using words like these: “Doctor, do you consider yourself an upstreamist?”

If she’s confused by the question, it’s OK. Simply explain your own understanding of the ways in which health often begins where we live, work, eat, and play. Let your doctor know that you’d like your provider to share an
understanding about upstream factors and their link to health. (Feel free to refer your clinician to this book to learn more about the upstreamists — a portion of net proceeds supports upstreamist training initiatives — or to the independent resources listed at the end of this book and at healthbegins.org.)

If your clinician seems genuinely interested, ask her to share her story. When did she first develop her appreciation for an upstreamist approach? Is she interested in specific social determinants of health, like food insecurity or education? If so, why?
This is not just a simple conversation starter. Upstreamists often have had direct personal experience living or working in communities with significant unmet social needs. That experience tends to be deeply formative, helping to define their worldview and approach to medicine. Brian Smedley, vice president and director of the Health Policy Institute at the Joint Center for Political and Economic Studies, directs an initiative to improve the health of 16 communities across the nation by addressing social conditions that lead to poor health. In his role, he comes across many physicians with an
upstreamist orientation. “Many of these physicians had the opportunity to see the link between health and social conditions because they had worked in a community with great need,” Smedley says. “Every one of them has said that, at some point, ‘a light came on.’”

Besides understanding how the “light came on” for your clinician, knowing her story may help you appreciate her approach to health in its social and environmental context and may make it easier for you to participate in your own care. You can share your insights and health concerns related to your home, work, and community.
Over time, this may improve the quality of your relationship with your doctor, provide her with valuable health-related social data about you, and possibly even improve the care you receive.

2. Share information about you and your community with your clinician

Technology has lately spawned a trend called the “quantified self,” in which individuals use mobile apps and wearable sensors to collect data on aspects of their daily lives (such as air quality around them, the amount food they consume, and the minutes they spend exercising). This
presents an exciting opportunity for people to support an upstreamist approach in medicine. Start by reading about quantified-self technologies, and if you’re motivated to discover patterns in your health behaviors and your environment, download one of the many available apps on your smartphone or computer. iHealth, for example, helps you track your blood pressure, physical activity, and calories burned. If you’re even more adventurous, explore using a device such as a wearable heart-rate sensor or an air-quality monitor at your work or home.
As you learn more, share your discoveries with your doctor. At the individual level, upstreamists can partner with willing patients to help interpret the personal data they obtain. At a broader level, upstreamists can aggregate confidential data from a “quantified community” of individuals with similar health problems or social needs to identify opportunities for intervention.

Whether you’re interested in using quantified-self technologies or not, consider sharing information about helpful community resources with your clinic. When people visit the
doctor’s office, they may underestimate the value of their own knowledge about local resources for healthy living. Is there a favorite park, walking trail, or exercise program you use? Do you know about a great farmers market or a helpful lawyer open to pro bono work? How about a dynamic teacher interested in health issues, or someone at a local public agency or nonprofit who goes above and beyond to help people in need? Share these details with your doctor. She and her colleagues can share that knowledge with other patients who may benefit.
3. Rate your health care

Every hospital and clinic is routinely evaluated for its performance on different measures. Accrediting bodies audit details like the cleanliness of exam rooms, adequate stocks of medication, and patient satisfaction. Federal and state governments and private insurers are also starting to use newer performance measures that encourage clinics to become patient-centered medical homes, rating providers on how well they provide continuity and coordinate patient care.

You can conduct your own assessment. Here are a few basic questions you can use to rate the
upstreamist performance of your doctor, clinic, and hospital, and to encourage them to understand health where it begins. Share your results with neighbors and your city or county health department. Let your health plan, employer, and union know that you are interested, as a consumer, in using these measures to evaluate providers in your plan’s network. Tell local government officials that these indicators of upstream performance matter to you, and ask for their support in promoting the use of these indicators. For instance, you could ask them to support public hospitals in conducting a community health needs assessment and to help
local public and private agencies work together to address the results. Find additional tips in the Resources section at the end of this book.

Does your clinic or hospital:

• *Regularly identify the health and social needs of the community it serves?*

Many public hospitals are preparing to conduct “community health needs assessments,” spurred by federal health care reforms. Clinics can start with even simpler steps, like using online survey tools to ask local nonprofits and businesses about the social or environmental needs they see every
day. Ask if your clinic uses geographic information system (GIS) software to help map and identify local clusters of disease and social or environmental problems. Is your medical system taking advantage of the movement to unleash big data in government and other sectors to learn more about patterns of need in your community? The federal government’s Big Data Research and Development Initiative and business-sector solutions, for instance, represent exciting opportunities that health care systems can exploit to manage and analyze large volumes of data. And, if you’re part of the burgeoning industry of information management specialists with
expertise in data and analytics, there’s no better time to apply your skills to the worthy goal of improving health upstream.

- **Have a dedicated person or team working to address the social conditions that make people sick?**

Ask for details about what type of work that person or team does. Keep in mind that upstreamists in health care systems may be identified by different titles — such as “director of population health” or “community health program manager” — that vary from one organization to another. If someone like that is on staff, get a sense of the clinic’s commitment. Ask if
that person works closely with or is a member of the clinic’s executive leadership. If you work in another sector, such as education, law, or social work, consider sending an email or calling that person to express your support (which can mean a lot to upstreamists), offer ideas, and ask how you can collaborate or help.

• *Routinely screen patients for risk factors in their homes, workplaces, and community?*

More and more clinics are using electronic medical record systems to better document and track patient care. But too few of those systems are designed to help clinicians identify and
address social needs. Ask what type of information your clinic collects in the social history questions it asks patients. Do the questions cover just traditional information about smoking, drugs, and sex habits, or something more? How were those questions chosen? Are they tailored to the needs of patients in your community?

- **Routinely connect patients with social and environmental needs to resources in the community?**

A growing number of programs help connect patients with social needs to community resources. One type, best exemplified by a Boston-based organization
called **HealthLeads**, uses college student volunteers, who set up tables in clinic waiting rooms to help patients find community programs based on their doctors’ referrals. Other clinics employ a more robust case management approach, using experienced social workers, care managers, and health coaches to help patients connect with community resources as part of a personalized, ongoing treatment plan. In some settings, the clinic may have partnered with other community-based service providers, such as public interest law firms, to create joint services for patients. For instance, medical-legal partnerships, in which public interest lawyers and
clinicians work side-by-side to aid people with complex medical and legal needs, now operate in more than 200 clinics and hospital systems nationwide and represent an exciting tool for upstreamists.

• Go beyond the level of the individual patient and help improve social and environmental conditions in the community?

Clinics that meet this criterion typically see the patient visit as one aspect, not the sum total, of their role in promoting community health. As Laura Gottlieb, one of my HealthBegins co-founders, has written, these clinics often create
partnerships and broader interventions, such as on-site farmers markets and healthy produce stands, that can benefit anyone in their community. Clinics also participate in legislative and community-level advocacy; projects may include petitioning for a local ban on school-lunch foods high in saturated fats, calling for increased funding and public support for local work-site wellness programs, or conducting nonpartisan voter registration drives and hosting candidate forums.

• Reflect an upstreamist approach in the way it funds its work?
The dominant fee-for-service model presents obstacles to an upstreamist approach. Some bold health care systems, however, do pay for their staff and services in ways favorable to the upstreamist standard of care.

Ask if your clinic pays its clinicians and staff a salary, rather than reimbursing them based on the number of services delivered. Ask if and how it distributes financial rewards and bonuses, if any. Are staff payments or salaries linked to measurable improvements in community health outcomes?
4. Vote with your feet

If you ask local clinics these kinds of questions, you may find that the clinics that rate highest also seem to offer the best-quality, most-personal care. Upstreamist clinics tend to employ people who understand and work to improve health in its social context, and these providers tend to offer a more satisfying patient experience. If you’re looking to change doctors or start new care, consider voting with your feet and health care dollars for an upstreamist clinic. Tell your friends about the clinic and encourage them to check it out for themselves.
5. Vote with your dollars

Besides conscious consumerism at a personal level, there are other ways we can help redirect our dollars upstream.

At your workplace, you can influence how your employer uses your health care dollars to promote an upstreamist approach. Ask your employer if it contracts with work-site wellness programs that help employees lose unhealthy weight, stop smoking, or decrease stress. Suggest that your employer select health care plans and
providers with a demonstrable commitment to improving the social and environmental factors that make people healthy. Another opportunity to leverage business financing exists in health impact bonds. These early-stage financing mechanisms use capital raised through partnerships of businesses, philanthropies, and local government to fund initiatives that improve health outcomes. Public and private investors can potentially recoup their investments through cost savings that result from improvements in community health.

As individuals, Americans can use the power
of philanthropy to spur upstreamist work, particularly in clinics and communities that need initial funding to get past the inertia of fee-for-service. Crowd-funding platforms such as Kickstarter represent exciting opportunities for people of all income levels to provide seed funding and support for interventions that improve social determinants of health. (Full disclosure: HealthBeings recently incubated a crowd-funding platform, HBFunder.org, for this purpose.)

Entrepreneurs, particularly those with experience using the Lean Startup approach,
popularized by Eric Ries, also have lessons to offer health care and the upstreamists. In this approach, startups reverse the common, perilous practice of pitching solutions before understanding the problem. Ash Maurya, an entrepreneur and proponent of the Lean Startup, describes this reversed perspective:

*The problem with starting with a pitch is that it is predicated on having knowledge about the ‘right’ product for the customer. … Before you can pitch the ‘right’ solution, you have to understand the ‘right’ customer problem. … Once I understood this, talking to customers became a lot easier. I simply shifted my frame from pitching to learning. In a learning frame, the roles are reversed — you set the
context but then let the customer do most of the talking. You don’t have to know all the answers, and every customer interaction … turns into an opportunity for learning.

Medical providers often pitch their solutions to patients first, instead of creating the context to learn about the real environmental problems that drive their illness. The upstreamist approach seeks to reverse this. Some entrepreneurs may decide to go beyond sharing lessons and choose to develop high-value solutions to these problems in health care.
6. Vote with, well, your vote

Our tax dollars can be a powerful tool to realign incentives to support and spread an upstreamist approach. You can urge policymakers to finance and expand models like Vermont’s Blueprint for Health, a trailblazing statewide health reform effort that includes payments for community health workers. These workers bridge the efforts of primary care providers and community services. You can also voice your support for the Prevention and Public Health Investment Fund, a pot of federal money for programs, research, infrastructure, and training that was slated to receive $15 billion over 10 years when it
was signed into law as part of Obamacare. Unfortunately, the Prevention Fund has been targeted for repeal or major cuts, or used as an offset for other budget measures, nearly 40 times since then. Now only a fraction of dedicated federal funding for prevention remains. Without that money, it will be much harder for upstreamists to work and demonstrate impact.

Closer to home, officials in town halls and city council chambers across the country make policy decisions every day that affect the landscape of health in our communities. Funding and planning decisions in other sectors, such as
transportation or education, are often made without consideration of their potential health impact. Transportation is seen only as transportation, and building codes only as building codes. Some regions have started to use health impact assessments (HIAs), modeled on environmental impact assessments, to evaluate the implications of policy decisions that might seem, on the surface, unrelated to health. California, for instance, recently launched a Health in All Policies initiative to factor health into a wide swath of state decisions.

Consider adding your voice to these local
decisions to support an upstreamist approach. That’s what Charlene Hauser, the former medical resident, did when she joined her neighbors in asking local officials to consider the potential negative effects of a second fast-food restaurant on community health. If your clinic or hospital has a community advisory board, consider joining it to directly support an upstreamist approach in local health care. Finally, consider supporting efforts to provide nonpartisan voter registration services in your area. Evidence suggests that communities in which civic participation rates are higher tend to be healthier. And, after all, if it’s possible to
register to vote at the Department of Motor Vehicles, why not make voter registration forms available in the waiting rooms of doctor’s offices or hospitals?

For those interested, a more comprehensive list of policy solutions and opportunities to advance an upstreamist approach can be found at upstreamists.org.
Conclusion: A quiet revolution

More than 2,400 years ago, Hippocrates, the father of Western medicine, opened his classic *On Airs, Waters, and Places* with this advice:

*Whoever wishes to investigate medicine properly, should proceed thus: in the first place to consider the seasons of the year, and what effects each of them produces for they are not at all alike, but differ much from themselves in regard to their changes. Then the winds, the hot and the cold, especially such as are common to all countries, and then such as are peculiar to each locality. We must also consider the*
qualities of the waters, for as they differ from one another in
taste and weight, so also do they differ much in their
qualities. In the same manner, when one comes into a city to
which he is a stranger, he ought to consider its situation, how
it lies as to the winds and the rising of the sun; for its
influence is not the same whether it lies to the north or the
south, to the rising or to the setting sun. These things one
ought to consider most attentively, and concerning the waters
which the inhabitants use, whether they be marshy and soft,
or hard, and running from elevated and rocky situations, and
then if saltish and unfit for cooking; and the ground, whether
it be naked and deficient in water, or wooded and well
watered, and whether it lies in a hollow, confined situation,
or is elevated and cold; and the mode in which the
inhabitants live, and what are their pursuits, whether they
are fond of drinking and eating to excess, and given to indolence, or are fond of exercise and labor, and not given to excess in eating and drinking.

Hippocrates and a long line of standard-bearers who have followed him have called for an approach in medicine that is capable of appreciating and addressing the social context of health.* I share the hope that all patients and professionals within the health care system better understand this approach, which I describe with the term “upstreamist.” In this book, however, I also argue that tomorrow’s health care workforce must include professionals whose primary and
specific work is the transformation of clinical care to address the social and environmental conditions that drive disease in our neighborhoods.

This is not an academic or theoretical exercise. It is an argument driven by the lessons I’ve learned and the people I’ve met while becoming a physician, from the foothills of northern India to the streets of South Los Angeles.

Some days, when I bear witness as a physician to people’s stories — including
working-class families like Veronica’s and the homeless veterans I now care for — I feel dismayed by what seems an unbreakable and vicious cycle of health and social problems. At other times, I feel the anguish of missed opportunity when I hear about patients who suffered a preventable illness simply because their clinic failed to deliver a better, upstreamist standard of care.

Increasingly, I find reason for optimism. Armed with data, promising new opportunities, and a combination of common sense and cutting-edge technology, modern-day upstreamists are
demonstrating what thought leaders dating back to the days of Hippocrates long envisioned. Health care can be better. All it takes is knowing how to integrate the social and environmental conditions that make us healthy into the daily work of patient care. In fact, it’s thrilling to consider the growing number of upstreamists among us, from people who intuitively know that smart medicine starts upstream to the innovators turning that vision into reality on the front lines of medicine.

Together, they’re part of a quiet revolution to improve health where it begins. The revolution
has not yet been televised, but it has begun.

*The lineage of upstreamists in Western medicine is filled with luminaries. It includes figures from the mid-19th century, such as Rudolf Virchow, the father of modern pathology and social medicine, and John Snow, a pioneer of modern epidemiology. More recent standard-bearers include Jack Geiger, who helped start the community health center movement, and Paul Farmer, the founder of Partners in Health. The fact that this lineage is so male dominant reflects a history of overt and latent sexism in Western medicine, a core problem that is slowly improving. There are many great
examples of modern women upstreamists in health care. Kshama Metre, the director of CORD in India, is one of my personal heroes.
Afterword by Paul Farmer

Physician and anthropologist Paul Farmer, M.D., Ph.D., is co-founder of Partners In Health, a nonprofit that provides health care in poor communities in Haiti and across the world. He is the Kolokotrones University Professor and chair of the Department of Global Health and Social Medicine at Harvard Medical School, and chief of the Division of Global Health Equity at Brigham and Women’s Hospital in Boston. His most recent book...
is To Repair the World: Paul Farmer Speaks to the Next Generation.

At the end of almost a decade spent in teaching hospitals and clinics, most physicians have honed their clinical acumen by focusing on the care of the patient who is right in front of them. Perhaps this is as it should be: As patients, we don’t want our doctors distracted by outside considerations such as the concerns of patients in other exam rooms or, heaven forfend, by abstractions such as the extrapersonal social forces that place people in harm’s way. We want laserlike focus, to use a
term from the medical profession, on our own “chief complaint.”

Or do we? What if most of our aches and pains and many of our serious ailments come largely from those outside forces and abstractions? What if we acknowledge that we live not only in bodies but also in families, homes (mostly), neighborhoods, and cities? What if our lives outside of the clinic or hospital are often difficult or even, for some people and at some times, almost unendurable? What if our clinical diagnosis is not our chief complaint?
Rishi Manchanda’s *The Upstream Doctors* addresses all of these questions with clarity and vision and humility. Manchanda is not suggesting that we don’t need to save all the people already swept into the perilous waters of the allegorical river. Rather, he argues, we need to divert some of our attention and resources — perhaps more than a third of them — to addressing the root causes of that peril. We need our physicians to be able to understand pathogenesis, especially when sickness is not caused solely by a microbe or an accident or a readily identified genetic mutation. Make no mistake: Most sickness in this world, whether in
South Central Los Angeles or in my workplaces of Boston and rural Haiti, is caused not by a single event or pathological process but by many of them in concert. And most of these causes exist far upstream of the etiologies that medical schools and teaching hospitals are instructing students to seek.

The “causes of the causes” are largely social and environmental, as laid out in Manchanda’s clear prose. Even when etiology is farther downstream, effective care for most illness requires understanding a patient’s social condition. Take, for example, the case of
Veronica. Armed with information about her damp and moldy apartment, any competent physician or nurse ought to be able to make the diagnosis. But the upstreamist approach is not merely to inquire about the causes of the causes; it also calls for addressing them. The clinic in which Manchanda practiced partners with community health workers and tenants’ rights groups to, in essence, extend the clinic right into their patients’ homes (if they have them) and lives.

The upstreamist approach works with, not on, patients. Together, Veronica and her new
partners in care improved the quality of her housing, lessened her son’s affliction, and thereby broke a vicious cycle that physicians see far too often: Study after study, in city after city, has shown that it is very expensive to give mediocre medical care to poor or near-poor people living in a rich country. One might even argue that this upstream approach improved the quality of her doctor’s life, too.

Decreased costs and better outcomes for all concerned: If that’s not a formula for value, I don’t know what is.
But efficiency, effectiveness, and value in health care are not the only reasons to adopt an upstreamist approach. Understanding the causes of the causes will help make medicine matter, help make it better, in part because it forces physicians to be better listeners. Bertolt Brecht’s haunting verse, “A Worker’s Speech to a Doctor,” published the better part of a century ago, tells a story all too similar to Veronica’s:

When we come to you

Our rags are torn off us
And you listen all over our naked body.

As to the cause of our illness

One glance at our rags would

Tell you more. It is the same cause that wears out

Our bodies and our clothes.

The pain in our shoulder comes

You say, from the damp; and this is also the reason

For the stain on the wall of our flat.

So tell us:
Where does the damp come from?

It can be argued that controlling the dampness and mold in Veronica’s flat is not the job of a physician. But to argue that such understanding of causality is not the job of an effective health-care system is wrong-headed for a host of clinical, moral, and economic reasons. These are not new insights, as Brecht’s poem suggests, but as our nation’s health care costs continue to spiral out of control without leading to the expected and wished-for results, these insights are more urgently needed than ever.
It is one thing to diagnose an illness and another thing to treat it; it’s yet another matter, as Manchanda explains in reflecting on Veronica’s experience, to shoulder real responsibility for treating illness effectively. It’s not as if the many doctors and nurses whom she saw made the wrong diagnosis. It’s our collective practice that is malpractice. Our model of caregiving will be more upstreamist only if we do as Manchanda does and we learn to work with others outside of the hospital — in the neighborhoods where our patients live, in the schools where they learn, and in the settings where they work.
Sustaining the upstreamist approach, and making these arguments against a constant undertow of censorious opinion, is hard work — even though the arguments are, as readers have learned, increasingly irrefutable. The formal health care system, including hospitals and clinics, don’t routinely recruit, train, credential, or pay community health workers; its institutions are not rewarded for doing so any more than they are for helping clear an apartment of mold or mildew. It is against precisely such perverse incentives that the protagonists of systems change in U.S. health care, including physicians like
Manchanda and innovative organizations like Health Leads and HealthBegins, now struggle. And a struggle it is.

Our world badly needs more upstreamists, especially those who see the need to innovate in systems design and to incorporate new technologies into an equity agenda. Clinicians need, early in their training, to understand the ways in which poverty and other structural or extrapersonal forces (including institutionalized racism and gender inequality) can constrain patients’ agency. At Partners in Health we’ve used the term “structural violence” to describe
the harm done to people in this way, and have documented it in Haiti and other settings of extreme poverty. But that harm is readily enough registered in the United States and, as Manchanda recounts, in a wealthy, inegalitarian, and sometimes ostentatious metropolis in California. The state is the birthplace, after all, of some of the technologies that might be harnessed to the needs of vulnerable patients. Given all of the resources there, can’t we find new gizmos to prevent or mitigate that harm? *The Upstream Doctors* answers this question with a cautious optimism born of experience in a broken system. Manchanda wants new tools and platforms but
knows they will be effectively deployed only if they are distributed equitably and linked to serious efforts to reform the system.

Why should all of us, regardless of where and how healthily we live, care so much about social medicine? Why should people outside the medical profession consider deeper civic participation in the quest for improving our health and our health care? I will offer three reasons to act in support of the proposals laid out neatly in Part Five of Manchanda’s volume.
First, understanding and addressing upstream causes of ill health is one of the best ways, as the data almost always show, to improve our collective well-being. But neither the understanding nor the addressing will ensue without the engagement of a broader public beyond health care providers and the administrators of our fragmented health care system. All of the caregivers who seek to improve their patients’ social determinants of health face “regulatory, cultural, and financial obstacles,” as Manchanda points out, including, invariably, the “fee-for-service straightjacket” that has slowed much innovation. Manchanda and other
upstreamists know we need a cultural shift that comes only with broader participation and changes in systems and in the rules that govern them. They argue that health care — your own, others’ — should not be only in the hands of specialists and experts like them.

Second, the current system is, it is widely noted, unsustainable. I will repeat myself here: It is very expensive to give mediocre medical care to poor people in a rich country. Although it may sound crass to say so, the overall health system doesn’t give good value for money. It’s neither efficient nor effective in addressing or preventing
many of the chronic problems most of us will one day face. And we all know that health care costs an awful lot, although how much it costs isn’t really clear, and we can’t rely on hospital bills to tell us.

Third and finally, it’s urgent that we go beyond utilitarian arguments to continue to stake moral claims for improving access to quality health care for all. Increased efficiency and lower costs, though important, are not the alpha and the omega of health care improvement, and they are still less of a factor in the improvement of health itself. There is a great need, these days as ever,
for compassion for and — dare we say it? — solidarity with those who shoulder the heaviest burdens of illness and premature or unnecessary suffering. Most of these people are not likely to read a TED Book, nor can they easily heed even loud and incessant reminders to improve — by themselves and with “willpower” and perhaps a few new gadgets — their diets, their exercise patterns, and their living conditions. Many of them still live in poverty or hover above it in frightening proximity, only a chronic disease or two away.

We doctors can also work with others, in
professions ranging from law to education to business, to re-imagine and rebuild a health care system that is safe and effective and able to serve especially those who would benefit from it most. Health care systems, if built by informed and compassionate people like Rishi Manchanda, can be imbued with the values that may refocus medicine on caregiving. For anyone concerned with the health and well-being of the poor or otherwise marginalized, of the frail or the elderly, of those bent under the weight of serious illness, *The Upstream Doctors* offers important ideas and solutions to their current predicament — and thus to our own.
Read Paul Farmer’s complete essay on The Upstream Doctors, from which this afterword is adapted, on the TED Blog.
Appendix A: Core attributes of upstreamists

It’s important to consider the essential characteristics that define today’s upstreamists. To develop this list of core attributes, I drew on my own experience as a curriculum developer, case studies of front-line innovators whom I’ve had the privilege to meet, and extensive interviews with health care leaders. I invite readers to share their opinions and comments.
about this list and to visit upstreamists.org to learn more.

Today’s upstreamists demonstrate the following strengths and abilities:

**Collaborate across disciplines**

Upstreamists are not intimidated by working across disciplines. If anything, their comfort in interacting with others in education, housing, food security, and similar areas, is a hallmark feature of their success.
Apply leadership and organizing skills
Upstreamists have the ability to bring groups together to work toward a common vision. This comfort level in building and working in teams within health care is invaluable.

Be creative, resourceful, and persistent
Because so much of the upstreamists’ work is not yet rewarded in health care’s business model, virtually all upstreamists demonstrate creativity and resourcefulness.
Command solid clinical credibility

While an upstreamist does not necessarily have to be a clinician, it is vital that she have significant experience and direct understanding of patient care. Virtually all the upstreamists I’ve met, for instance, have maintained a limited but routine clinical practice. This is key for establishing and maintaining credibility.

Advocate adeptly

Upstreamists learn to leverage opportunities for systemic change using legislative, media, and general advocacy skills.
Use entrepreneurial and problem-solving skills

Upstreamists are committed to addressing problems and unmet needs in a sustainable and scalable way. In the Lean Startup language of Silicon Valley, upstreamists see pain points related to care delivery and the social determinants of health. They methodically test their assumptions about these pain points with data, and they seek opportunities to scale solutions.
Possess a deep, applied understanding of public health and social determinants of health, along with a keen intellectual curiosity in the social sciences

Beyond understanding the cornerstones of public health, such as epidemiology and biostatistics and approaches like community-based participatory research, upstreamists have content expertise and direct experience that relates to the social conditions (such as housing) that drive disease in the community that they serve. Upstreamists often display a keen interest in the social and political sciences, from medical anthropology and critical race theory to urban planning and
community organizing, and they routinely draw on that interest to better understand, work within, and serve their community.
Appendix B: Solutions from within health care

Remember the five key challenges that health care practitioners face in becoming an upstreamists? I used the acronym TRIDNTT (Time and Resources; Incentives; Data; Networks and support; Tools and Training). The health care industry itself has many valuable opportunities to empower upstreamists in each of these areas.

1. Increase time and resources:
Upstreamists need dedicated time and resources to perform their work and jump-start projects to transform their clinics.

In the short term, health care organizations can begin programs for which there is adequate evidence that an upstreamist approach would reduce preventable hospitalizations, reduce costs, and improve outcomes among patients with significant social needs. Examples include programs that house chronically homeless adults or set up medical-legal partnerships to assist adults or children with disabilities. Health care administrators can demonstrate leadership by
setting aside time for a designated team of upstreamists, comprehensivists, and partialists to work on strategic programs.

2. **Align incentives:** We need new ways to pay for upstreamist approaches to help improve health where we live, work, eat, and play.

    *Macro:* New models of coordinated care supported by the Affordable Care Act should follow the example of the Vermont Blueprint for Action. This state health reform effort integrates and pays for community health workers to work with patient-centered medical homes. The
Healthcare Innovation Zone (HIZ), for instance, is part of the federal health reform law that may allow the government to establish targeted pilots in specific communities where social determinants of health are poor. Scholarship programs, such as the National Health Service Corps, can pilot joint programs with other federal agencies, such as the Department of Housing and Urban Development, to train and place upstreamists in communities with significant health and social needs.

Community: Communities and stakeholders—including philanthropies, health care systems,
public health departments, and banks — can explore financing mechanisms to support upstreamist interventions. These mechanisms can include health impact bonds, which leverage funding raised through public-private partnerships to pay for initiatives that improve health outcomes. At regional and local levels, philanthropies can partner with public health agencies and businesses to leverage investments in emerging, scalable strategies and technologies that improve health care and social determinants of health.

_Micro:_ Clinics and community groups that
need seed funding and support for interventions that improve social determinants of health can use crowd-funding platforms such as Kickstarter or HBfunder.org (a project of Health Begins).

3. Unleash big, actionable data: Without data on health and social factors, it is difficult to build or evaluate upstreamist approaches. Big data must be unleashed at macro and micro levels.

Macro: In March 2012, the Institute of Medicine released a report outlining opportunities to improve the integration of
primary care and public health.

As the report indicated, widespread adoption of electronic medical records (EMR) in health care settings represents a major opportunity to improve social determinants of health. Clinics in communities where substandard housing is endemic, for instance, are well positioned to collect data from their patients on housing conditions and related health problems. The ICD-10, an updated classification list developed by the World Health Organization, will soon be used by clinicians across the U.S. to code for diseases, signs and symptoms, and social
circumstances. This effort will produce an unprecedented amount of data on the social and environmental conditions that shape disease. The federal Office of the National Coordinator for Health Information Technology should convene public health experts and front-line clinicians to develop metrics and methods for sharing EMR data and leveraging ICD-10 standards to allow clinics to better screen and address social determinants of health among patients. Public hospitals, which are now required to perform community health needs assessments to maintain their tax-exempt status, should demonstrate that they are tailoring their care to community needs
by using relevant federally recognized evidence-based measures (for example, to gauge housing or food security needs) in their EMRs.

Community and micro: Geographic information system (GIS) technologies represent one of the most powerful tools for upstreamists to collect and visualize geographic data related to individual and community-level social and environment needs. This so-called geomedicine has the potential to reveal patterns of social and environmental health risks within neighborhoods. Armed with that information, upstreamists can mobilize clinical and community stakeholders to
act, and they can target proactive and predictive medical care and clinic outreach to areas at risk. For instance, I’ve seen a clinic use geomedicine to determine that patients with poorly controlled diabetes lived in more remote, hard-to-reach areas compared with those with well-controlled diabetes. Now the clinic proactively allocates more outreach and support services to patients in remote areas.

4. Create networks and support: From online communities to regional incubators, the need has never been greater for these new approaches to supporting upstreamists. My co-
founders and I are trying to provide support through HealthBegins. Our community of practicing clinicians, students, and experts is growing steadily, but the health care community must do much more.

Communities that seek to train and support upstreamists in health care may be well served by establishing regional incubators, which typically accelerate the development of new businesses, with a range of support resources and services. By creating clusters of these services to nurture upstreamist medical systems, these regions can benefit from the increased productivity that
typically results when a collection of related businesses are geographically concentrated. Health profession and public health schools can play vital roles in establishing mentorship, content expertise, and a workforce development pipeline in partnership with these incubators.

Regions interested in creating clusters of health care innovation can build on current federal funding streams for business development, as well as the Healthcare Innovation Zones for academic-community partnerships proposed under the Affordable Care Act. They also can learn from the community health planning
model, which led to the development of regional councils in the 1960s. Regional councils, still active in many states today, are public organizations created to foster coordination and a regional approach among neighboring counties, whose local governments joined together voluntarily to address common economic and social concerns.

5. Provide new tools and training

To meet a target of 24,000 upstreamists by 2020 will require federal and state action and new training approaches.
**High schools:** In fall 2012, HealthBegins launched a scalable program in partnership with a high school in South Central Los Angeles. Over four months, 35 students learned about social determinants of health and mapped more than 230 community resources on an online platform. That platform, which a student nicknamed the “Yelp for Health,” is now being used by local clinics to refer patients with social needs to resources that local residents mapped and vetted. More programs like this are needed to start training tomorrow’s upstreamists today.

**Health professions schools:** The Association of
American Medical Colleges recently took a step in the right direction by revising the Medical College Admission Test (MCAT). Starting in 2015, the test will include a new section on social and behavioral sciences. Medical, nursing, and other health professional schools should go further by adopting upstreamist-oriented service learning. For instance, students could engage in local community health needs assessments and mapping exercises that pinpoint problems and opportunities for intervention. Still more approaches are needed to ensure that students entering medical school are being evaluated as future upstreamists.
Graduate medical education: As the Institute of Medicine pointed out in 2012, federal agencies — including the Centers for Disease Control and Prevention, the Health Resources and Services Administration, and the Centers for Medicare and Medicaid Services — can promote regulatory changes and fund training grants to promote the integration of upstreamist training in graduate medical education (that is, residency programs). Residency programs with particular expertise in social and community medicine, such as those at Montefiore Medical Center in the Bronx, N.Y., should convene to consider how to
help shape these changes and otherwise expand upstreamist training in graduate medical education.

*Upstreamist boot camp:* Taking a page from tech incubator programs that are flourishing in Silicon Valley, HealthBegins is working with partners to develop a four- to six-week program for upstreamists (scheduled launch is spring 2014) tailored to health professions students and medical residents interested in learning how to redesign clinical care to address social determinants of health. Beyond boot-camp-style skill-building exercises in epidemiology,
leadership, and other core upstreamist skills, students will get hands-on experience using geomedicine and mobile health technologies. Program participants will learn a Lean Startup methodology for problem solving that is adapted for upstreamist work.

_PRACTICING CLINICIANS:_ In March 2013, a team led by Sir Michael Marmot at the University College of London published a report, “Working for Health Equity,” which outlines the role of health professionals in taking action on the social determinants of health. Most notably, the report includes a series of commitments by 21 provider
associations in the U.K., from nurses and social workers to physicians and paramedics, to address social determinants of health. Although the commitments are nonbinding, they may help to increase accountability and public engagement.

Health care groups in the U.S. should follow the lead of U.K. counterparts and make bold, concrete commitments to support an upstreamist approach. The American Academy of Pediatrics made a step in that direction recently when its Council of Community Pediatrics released a formal policy statement with 11 recommendations highlighting the importance of
pediatricians understanding social determinants of health.

More directly, HealthBegins has developed online upstreamist trainings to help practicing and aspiring clinicians learn to make small but significant changes to their health care systems and the conditions that make people sick. These online efforts augment in-person trainings that HealthBegins provides across the country.
Resources

If you’re interested in learning more about upstream health and the state of U.S. medicine, you may find these resources useful.

The basics

Centers for Disease Control and Prevention, on the social determinants of health

Grantmakers in Health, on the social determinants of health
PlaceMatters, an initiative of the Health Policy Institute at the Joint Center for Political and Economic Studies

SocialMedicine.org

World Health Organization, on the social determinants of health

Training and research

Center for Health and the
Community, University of California, San Francisco

Center on Social Disparities in Health, University of California, San Francisco

Department of Global Health and Social Medicine, Harvard Medical School

Primary care residency training programs such as the Residency Program in Social Medicine at Montefiore Medical Center and the Albert Einstein College of Medicine
Notable reports

“Community-Centered Health Homes: Bridging the Gap between Health Services and Community Prevention,” by E. Valdovinos et al., February 2011, Prevention Institute, Oakland, Calif.

“What Academic Medical Centers Can Do about Social Determinants of Health: Implications for Medical Education,” by A. Nyquist et al., November 2012, a presentation at the TED is a nonprofit devoted to “Ideas Worth Spreading.” It started out, in 1984, as a conference bringing together people from three worlds: Technology, Entertainment, Design. Since then its scope has become ever broader. Along with two annual conferences — the TED Conference in Long Beach and Palm Springs, Calif., each spring, and the TEDGlobal conference in Edinburgh, Scotland, each summer — TED includes the award-winning TED Talks video site, the Open Translation Project and Open TV Project, the inspiring TED Fellows and TEDx programs, and the annual TED Prize.

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Some causes of illness, such as mold in the home, aren't obvious in the exam room. Rush hour steals more than time. By adding stress, increasing our sedentary hours, and spewing pollutants into adjacent neighborhoods, it also saps our health.

The detrimental effects of crowded housing on health are significant, but not typically emphasized in medical training.

Try as we might to resist the call of the quarter-pounder with cheese, if it's on our route home from work we're more likely to give in to temptation.

Neglected streets and sidewalks make it far less inviting to take a healthy stroll.

The appeal of suburban life, with its space and privacy, ignores a major peril: reliance on the automobile. This neighborhood doesn't even have sidewalks for residents to walk on.

By the time a patient exposed to environmental toxins shows serious symptoms and receives a medical diagnosis, she may have been breathing polluted air for years — exposure that a doctor's prescription cannot erase.

Despite the crowds, cities can still be lonely places. Social isolation is linked not only with depression and other mental illnesses, but also with physical ailments such as heart disease.

Clinicians who share a cultural background with their patients may bring important insights to their care, but the makeup of the medical professions still doesn't match the diversity of the U.S. population.