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WITCH DOCTORS, ZOMBIES, AND ORACLES: RETHINKING HEALTH IN AMERICA[†]

Ali S. Khan^{††}

ABSTRACT

To the extent we can even refer to an American healthcare “system,” it functions brilliantly . . . to make money. The system is designed to reward executives or major shareholders of pharmaceutical & health insurance companies, healthcare facilities, and related entities. With a rapidly aging population, healthcare will soon surpass a fifth of our economy. Of course, the American healthcare system does not function brilliantly when one considers the perspective of patients and over-extended primary care providers. Prices are growing faster than inflation or wages, healthcare is twice as costly as other comparable nations, and one third is a result of waste, fraud, and abuse. One could argue that good health is incidental and often an unexpected (but welcome!) outcome of the system given trailing national health indicators, disparities, millions of uninsured and underinsured persons, and that medical errors are our nation’s third leading cause of death. This current healthcare model is unsustainable and undergoing profound change, irrespective of the American Health Care Act (AHCA) and White House budgetary cuts for health and science research. Changes in payment models, technology, wellness, public health approaches, and data availability have the potential to meaningfully address social determinants of health and encourage an embrace of a new holistic approach. However, implementing this change will be “complicated,” as it will entail a profound reordering of economic, policy, and legal priorities to place the interests of individual and public health first.

† Edited from the annual Schroeder Scholar-in-Residence Lecture sponsored by the Law-Medicine Center on October 30, 2017, at Case Western Reserve University School of Law. This version has been edited for publishing purposes and does not contain the lecture in its entirety. The full transcript is on file with the editors of Health Matrix. Please direct all inquiries to h-matrix@case.edu

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INTRODUCTION

On this All Hallow's Eve, I am going to tell you a ghost story.

Specifically, I am going to tell you a story about witch doctors, zombies, and oracles and how that references rethinking health in America. You've probably noticed that I didn't say *healthcare* in America; I said *health* in America. And I am very deliberate about the choice of that word.

Let's start with someone who is often attributed as the first physician, Hippocrates. But I would like you to think of him a little differently. I would like you to think of him as the first public health doctor in the world when he said things like "it is more important to know what sort of person has a disease than to know what sort of disease a person has."

Like all good ghost stories, there is a beginning, a middle, and an end. Our ghost story is going to be about the health of Americans - Where are we? How are we getting there? And then we are going to ask, where *is* the health of America going?

Let's start with some of the myths, or 'zombies' of healthcare that just refuse to die. These include the myths that American healthcare is the best; that employment guarantees health insurance in the United States; that uninsured individuals have equal access to emergency room services; that the free market is the best way to get the highest quality health insurance for the lowest cost; and that universal coverage is too expensive and unaffordable. Hopefully, by the time this story is done, you will agree that these are all zombies.

PRICE OF HEALTHCARE

Perhaps the greatest boogeyman that exists in America is the price of health care. Projected increases in healthcare premiums for 2018 reveal significant hikes.¹ For example, BlueChoice, an insurance carrier in Maryland's marketplace that covers 160,000 individuals, wants to raise premiums by 53.4 percent. Anthem, which covers 35,000 individuals in Connecticut, wants to raise premiums by 33.8 percent. Healthcare premiums on Ohio's healthcare exchange are projected to increase a minimum of 23 percent, and a maximum of 34 percent. As reported on the Affordable Care Act's website, "[s]everal carrier CEOs have gone on the record to note that the Trump/GOP Uncertainty

1. The rate hikes are for the individual health insurance market ONLY. These do not have anything to do with employer-sponsored policies (large or small), Medicare, Medicaid, the VA/TriCare, short term policies or "grandfathered/transitional" policies. These only refer to the roughly 18 million people enrolled in ACA-compliant individual market policies, either on or off the exchanges."

Factor is a ‘significant’ or ‘primary’ part of their requested rate hikes this year.”

What does the United States pay for health care? In short, a lot. In 2016, healthcare spending in the United States reached \$3.3 trillion dollars, which amounts to \$10,348 per person and 17.9% of the United States’ Gross Domestic Product (GDP). National Health Expenditure Projections for the years 2016 through 2025 predict that health spending will grow at an average rate of 5.6 percent annually or 4.7 percent per capita. This annual growth of health care spending is faster than GDP spending by 1.3 percent; and by 2025, health care spending is expected to rise to 19.9 percent of GDP. This increased growth in health spending is also expected to respond to factors like changes in economic growth, more rapid increases in medical prices, and the population of the United States aging. By 2025, federal, state, and local governments are projected to finance 47 percent of all national health spending in the United States.

Let’s talk about where this money goes. The first place it goes is to health insurance companies. The largest health insurers in the United States—Humana, Aetna, Cigna, and United Health—have seen an increase in their profits in 2017. Health insurance companies are not suffering.

A big part of what drives healthcare costs are inpatient costs, but drug costs also drive a large share of healthcare spending. And this shouldn’t be surprising.

Statistically, approximately one in three individuals is currently taking a prescription medication, and one in four individuals is taking two or more prescriptions. By the time someone is sixty-five years of age or older, they will be taking at least one—if not two or three—prescription drugs. Between 1988–1994 and 2013–2014, the use of at least one prescription drug in the past 30 days increased 5.2 percentage points for adults aged 18–44, 14.8 percentage points for adults aged 45–64, and 17.2 percentage points for adults aged 65 and over. For adults aged 45–64, use of at least one prescription drug during the past thirty days increased throughout the period, while for adults aged 18–44 and sixty-five and over, drug use initially increased before remaining stable in recent years.

Just as health insurance companies have seen increased profits in recent years, so have Fortune 500 drug companies. And with these increasing profits, these drug companies also displayed a multitude of abuses. One recent and prominent example that resonates with most people is the case of Martin Shkreli. Soon after Shkreli bought the distribution rights for *Daraprim*, a critical drug for people living with HIV and AIDS in order to prevent infection, he grossly increased the price of the medication from \$13.50 to \$750 a pill overnight. A medication that cost \$1 a pill as recently as 2010 remains at \$350 a pill today.

There are some consequences for pharmaceutical companies trying to drive up profits like this. Take, for example, what has been going on nationally with opioid drug use. Drug overdoses are the leading cause of injury deaths in the United States with a record high of 47,055 deaths in 2014. More than six out of ten drug deaths involve an opioid primarily prescription pain relievers (morphine, oxycodone, hydrocodone) or heroin. Opioid-related overdose deaths increased 200 percent between 2000 and 2014, and since 1999 the number of opioid pain relievers prescribed has quadrupled. Ohio's Attorney General, Mike DeWine, is actually suing five pharmaceutical companies in order to recoup the costs the opioid epidemic has had on Ohio, many parts of which are ground zero for the epidemic.

Evidence exists indicating that these pharmaceutical companies were promoting Oxycontin and other drugs even when they were not indicated, and were involved in the effort to convince physicians, nurses, and other healthcare providers that pain was a vital sign. Because of this, providers had to ask everyone about their pain, and unless a patient said they were pain-free, many providers started giving their patients narcotics. As an example, one pharmaceutical company had made a spray form of a narcotic meant only for a very, very narrow group of people. Instead, this company tried to promote this formulation of this very addictive narcotic to everyone, because it was expensive and highly lucrative for the company.

This is just a snapshot of what Americans are paying for healthcare. Some of the critical health law issues to consider, as we think about the prices we pay for healthcare, are authorizing Medicare to negotiate prices, creating a fast-track to approve generic drugs, measures that would prevent price-gouging, and passing legislation like the 21st Century Cures Act.

As previously mentioned, the United States spends about one-fifth of its economy on healthcare; the flipside of this of course, is what are Americans getting from this \$3.3 trillion-dollar investment in healthcare?

To start, despite spending \$3.3 trillion in healthcare, we still do not have universal coverage in the United States. While the percentage of uninsured Americans has decreased since provisions of the Affordable Care Act went into effect, millions of Americans are still without health insurance. Moreover, disparities exist amongst uninsured Americans where, as of 2014, 31.8 percent of Hispanic Americans did not have health insurance, compared to 17.2 percent of African-Americans and 10.5 percent of Caucasian Americans.

You might think the United States is spending this money evenly to ensure that all people are staying healthy throughout their life. This is not true either, and is not how we spend healthcare dollars in the United States. The top one percent of spenders account for more than one-fifth of all healthcare spending in the United States, and the top five percent of spenders account for half of all healthcare spending.

Healthcare dollars aren't distributed equally across groups to make sure these dollars are driving health and not healthcare.

QUALITY & EQUITY OF HEALTHCARE

The United States also doesn't get the quality you would expect out of the amount we spend on healthcare. In 2013, the Organization for Economic Cooperation and Development looked at how much countries spend on healthcare relative to the countries' life expectancies. For the most part, most countries form a nice 'logarithmic curve' as it would make sense that the more a country spends on healthcare, the more likely that country will end up with a greater life expectancy for its population up to a point. One country is an outlier to this general trend—the United States. Despite how much the United States spends on healthcare, we have, among developed countries, the worst life expectancy, the worst infant mortality rate, the worst maternal mortality rate, and the highest number of people with two or more chronic conditions.

Let's focus on infant mortality for a moment. Our Healthy People 2020 goal is to reduce our infant mortality rate to six children or less dying per one thousand or more live births every year. The average infant mortality rate in developed countries is 3.4 deaths per thousand, and if we look at Scandinavia, its infant mortality rate is about two children per one thousand live births. The aspiration goal of the United States is two to three times *worse* than what other countries have routinely achieved.

Even though death rates for many diseases have decreased overall, significant racial and ethnic disparities continue to exist within all dimensions of health and healthcare in the United States. Take death rates by cause and sex, for example; more African-American males die of heart disease and cancer than African-American women, as well as white men and women. These discrepancies amongst ethnicities can also be seen when looking at life expectancy. The group with the highest life expectancy in the United States is Hispanic women (at least first-generation Hispanic women), and the second highest is white women. Some of this may represent the healthy immigrant phenomenon and if you would give them enough exposure to American diets over generations, this high life expectancy would change. So, not only does our health system not give us access to care, it also doesn't give us good quality healthcare, nor does it provide good equity of care in the way it is currently structured.

In order to rethink health equity in the United States, we need to ask: how do we make sure people are getting equity in health? Solving this with ethnicity and race is relatively easy; often you can just look at an individual and make that determination, but that's not true for all other causes of inequity within our health system. Take, for example, inequities amongst minority sexual orientation and gender identity

populations, and inequities amongst the urban-rural divide, both of which we have within our health system. Dr. Perez of the National Institute of Minority Health and Disparities discusses some of these disparities within sexual and gender minority populations, which has recently been designated as health disparity population. Dr. Perez has found that:

sexual and gender minority populations have less access to health care and higher burdens of certain diseases, such as depression, cancer, and HIV/AIDS, for example, research shows that sexual and gender minorities who live in communities with high levels of anti-SGM prejudice die sooner—12 years on average—than those living in more accepting communities.

Unfortunately, it's not just a matter of saying "hi, you're a different sexual orientation and we need to take care of you." What we have to think about is how are we creating equity within healthcare systems in order to address everyone's needs.

Differences in life expectancy also exist within the urban-rural divide. The life expectancy in three Colorado counties—Summit, Pitkin, and Eagle—averages eighty-five years or higher, while the life expectancy in Oglala County, South Dakota which has the lowest life expectancy in the country is sixty-seven years. What is striking about this is there is an eighteen-year difference in life expectancy in the United States between two counties that are only an eight or twelve-hour drive away from one another. Completely unacceptable in the United States. These discrepancies in life expectancy by county is often why people talk about a person's zip code being a better predictor of life expectancy than one's genetic code. In Omaha, I can tell you, that if you are born about a fifteen-mile difference, you will have almost a fifteen-year difference in life expectancy—just from where you are born—not the hospital you were born in, but where you live.

I think that what all of this does is speak to why I use the word "health" instead of "healthcare." As we look at other countries and our relationship to other countries, it is important not to just look at what we are spending in healthcare, but it is just as important to look at what we are spending in social and health services. How those are put together will really help determine what health in communities actually looks like.

In 2016, an analysis was done that looked to compare the size of hospitals with their patient outcomes, patient outcomes compared to patient experience, and patient experience with the cost of the patient's healthcare. This analysis found that there really was no clean association between spending more on healthcare in order to get better quality care and better outcomes in a bigger hospital. While a lot of the data was all over the place, what it found was that high-cost hospitals were more likely to have lower patient experience scores, but were able to match lower-cost hospitals when looking at size and patient

outcomes. It is just not true that having the most expensive healthcare plan in America is going to get you the best possible healthcare in America.

Another component of healthcare that cannot be missed is how much is wasted in our healthcare system from healthcare fraud. The Economist reported that at the end of 2013, there were over two-thousand healthcare fraud probes open—an average of five new incidents per day. Since the Medicare Fraud Strike-Force was launched in 2007, fraud has declined significantly, but fraudsters continue to devise new schemes. The New York Times article published in July of 2017 headlined “U.S. Charges 412, Including Doctors, in \$1.3 Billion Health Fraud,” reported that “[h]undreds of people nationwide, including dozens of doctors, have been charged in health care fraud prosecutions, accused of collectively defrauding the government of \$1.3 billion.” Of those 412 charges, nearly one-third of those were accused of opioid-related crimes.

In fact, about one-third of total healthcare spending in the United States is spent on fraud and waste. This potentially means that one-third of the healthcare Americans receive is unnecessary. When you think about it, one-third of costs go towards healthcare we don’t need, and another third of costs go towards the administrative expenses of insurance companies.

So really, if I were to hand you \$1.5-2 trillion dollars today - all the money wasted in healthcare fraud and the administrative fees—what would you do? Two trillion dollars is essentially how much money would be needed to fix healthcare in America. The notion that there is not enough money for healthcare or health in America is a myth, as there is more than enough money within the system to fix America’s healthcare system.

FUTURE OF HEALTH

Finally, let’s look at where we are going to go in America’s healthcare system, and how we are going to get there. If we consider the U.S. healthcare industry as an ‘ecosystem,’ this ecosystem has six main features: care delivery; diagnostics and therapeutics; financing, payment, and regulation; wellness; public health; and platforms and healthcare infrastructure. And this ecosystem is on track to be over a \$5 trillion-dollar enterprise, with care delivery currently being where most of this money goes. However, this trend is increasingly changing, and the rise of consumerism is attributed to this. Consumers have more access and ownership of health data, and more price transparency is being seen in healthcare now. Individuals understand better what their co-pays look like and what it costs to have tests done. This change in consumerism can be seen, and one day could potentially get the United States to this ‘Uberization’ of healthcare. The only thing that prevents this from happening is access to data, as consumers still do not have

much clarity on what the true costs and processes are for tests or what condition someone may have until well after the fact.

The other big move in public health is financing, and this is probably the one feature that makes seeing where healthcare is going to go exciting. Right now, healthcare is fee-for-service. It is the exact same system we had about 10,000 years ago, where you would come to a witch doctor if your head hurt. The witch doctor would give you a salve, and in return you gave him a chicken. Ten thousand years later, it is the same thing, although the salves have gotten a bit more complicated, and we have Mastercard & health insurance instead of chickens.

What is going to happen now is that we are going to start paying for health and not healthcare. My best example of this comes from my brother-in-law. Once a year, he has to make the journey from Houston to New England with his two kids to see his mother-in-law. You put two kids in the back of the car, and it doesn't take long for somebody to say, "are we there yet?" or "I have to go to the bathroom", right? Or maybe the kids are throwing popcorn around the car, or they are smacking someone in the head. You have been there if you have kids. My brother-in-law tried to bribe them; he would give them money and say, "don't do this." It never worked.

He tried a different strategy. He handed each of his kids a Dixie cup full of quarters. The moment somebody said, "are we there yet?," he wouldn't say a word but would reach back and grab some quarters. The moment someone smacked somebody on the side of the head, he wouldn't say a word; just grabbed some more quarters. Even for a five-year old and seven-year old, it didn't take very long for them to learn what the consequences of their actions were, and this is where healthcare is going. So I, as your doctor, will get a bucket cup full of quarters to see you and take care of you, and if I decide I am going to do twenty tests on you when you only need one, then the insurance company is going to reach into my bucket of quarters, and it is going to take some quarters out of there.

For the first time ever, healthcare will be defined by making sure you, the patient, stay healthy with obvious quality measures. This is essentially a new way of financing healthcare; this is about getting health for people, and not the fee-for-service model.

We are fortunate there is a large push for wellness within our communities, and that will continue to change over time. There is also a greater push for public health and trying to make sure we have preventative services, and a focus on how to prevent people from getting sick as opposed to taking care of them when they become sick.

There are a couple of health law issues here to consider. One is around telemedicine. The potential for telemedicine to address access and cost problems has long been recognized; however, this potential will not be realized until issues regarding licensing and practicing across state lines, and reimbursement rules are addressed. How do you get

insurers to reimburse providers when they never actually physically touch a patient? This is especially important to address in rural populations, where you want patients to stay within their communities and get care within their communities, and possibly see patients intermittently via telemedicine when they really need high quality service that isn't available locally.

Another health law issue to address in where healthcare in the United States is going has to do with big data and personalized medicine, and the issue of how much we should trust these 'black box' algorithms. Big data and AI algorithms could potentially open the door to treatment that is individualized and thus more effective, safer, and causes less side effects in patients. However, a concern is that many algorithms (e.g., deep learning based AI) offer little clues as to how they reached their conclusions—can medical professionals or consumers trust diagnostic and treatment recommendations that can't be interrogated?

In the next twenty or so odd years, the practice environment is going to change. First, the United States is shifting to a majority-minority population; it is projected that by 2050 the combination of Hispanic, Black, Asian, and others will outnumber the number of Whites in the United States. We will be practicing medicine in a very different environment, at least from a racial/ethnicity perspective.

The same thing is true when we consider rural-urban divides, and sexual orientation/gender identity equity issues too. We will be practicing medicine on a different population of people than we currently are now. The baby boomer population is getting older, and will need greater access to healthcare, in addition to the costs associated with making sure that physicians are providing this care.

Another issue the United States will be dealing with is that of a markedly obese population. One-third of Americans are currently obese, and two-thirds of us are currently overweight. Obesity is on track to beat smoking as the leading cause of cancer in the United States, let alone all of the other complications associated with obesity.

In the next ten to twenty years we will also have to think about the impacts of our behavior on the environment and what that is going to mean as we experience climate change and extreme weather events in the United States.

The third thing we will have to think about is the threat of emerging infectious diseases. Whatever the next threat is—be it antibiotic resistance measles or Zika—we are going to need a healthcare system that is going to be ready for these changing landscapes that are ahead of us in terms of the broad, demographic changes in our population.

These challenges that we are going to have around obesity and chronic disease, climate change, and emerging infections—the next pandemic is coming. This is exactly why we need a healthcare system ready for the next pandemic not just in ten to twenty years—we need a healthcare system ready for the next pandemic *today*, for this is the

reality of what our healthcare looks like. We need a healthcare system that helps assure equity for our populations.

Health equity is when everyone has the opportunity to “attain their full health potential” and no one is “disadvantaged from achieving this potential because of their social position or other socially determined circumstances.” There are a couple of different ways of looking at equity, but how do you make sure that the right set of resources are flowing to the people who need them the most to make sure that they are healthy?

So, how are we going to get to a healthcare system that is more responsive, more equitable, and better prepared for the changes that are ahead of us?

Hippocrates once said, “the greatest medicine of all is teaching people how not to use it.” I’m not sure why physicians claim Hippocrates was the father of medicine—he was the father of public health.

How do we create healthier communities and rethink health? There has been no better time than today to think about how to do this—how to take public health and healthcare and put them back together again. There are a few things we can do; we can involve citizens in local healthcare delivery system reform and in stewardship of their financial resources. We can promote a shared responsibility for the health of the community. We can also focus on the social determinants of health, clinical-community linkages, and whole-person care.

Public health people have an origin story, one which goes back to the 1850s where a physician, John Snow, goes and stops cholera, even before we knew what germ theory was. A really wonderful and bad thing happened around that time: epidemiology became a science. As a result, public health and healthcare started to diverge from one another, and that divergence has continued over the last one hundred and fifty years. The consequence of this divergence, especially in the United States, is that we spend a whole lot of money on healthcare, but we don’t spend anything on public health. Now is the time to bring those two together, and this is the most opportune time to do that, because the healthcare system recognizes that it needs to do better.

There are conversations now about Healthcare 3.0, and its crux is about the triple aim of providing a higher quality care at a lower cost to all of a provider’s population within their practice. It is also about understanding clinicians and healthcare system, and that they need to think about population-based health outcomes. Clinicians and healthcare systems need to think about care integration, that takes the individual from the hospital, recognizes that the individual lives within a community, and requires physicians to ask how they are addressing that patient’s needs within a community in order to help them become better.

Because of Healthcare 3.0, people have started to talk more about precision medicine. Precision medicine allows us to use technology to

understand why, for example, a particular person may have lung cancer, which has these specific genomic messages. With precision medicine, providers can use an individual's specific profile to treat them for all of the diseases they may have. And providers and clinicians realize that precision medicine isn't just about how to best treat an individual's current condition or disease, but that it can also be used to prevent someone from developing another condition or disease.

Healthcare 3.0 is also going to give us a different way of thinking regarding how we treat patients. Take Geisinger's health system and its Fresh Food Pharmacy. In this system, physicians can write patients a prescription for food, both for the individual and their family. Patients can go to the food pharmacy once a week, meet with a dietician, and are able to pick out five days of fresh, valuable food to help people get healthy. It is a completely different way of thinking about what physicians write on their prescription pad, one that will have a larger impact on the patient than just writing them a statin. This could be extended to things such as prescribing exercise for someone. Medicare is beginning to recognize this with its Quality Payment Program, the aim of which is to modernize Medicare "to provide better care and smarter spending for a healthier America."

Increasingly, despite what has been a slowdown in the last year, I would say that the train has left the station in regard to thinking about how we pay for value in health as opposed to how we pay for healthcare. We also need to consider how we make sure these new payment models incorporate public health measures.

As a clinician, I can tell you already that I don't get judged on how I take care of Mr. Johnson's blood sugar. I have to make sure Mr. Johnson's diabetes is taken care of, but what the insurance companies and payors are now saying is that I saw six hundred people who have diabetes. And the insurance companies want to know what the average blood sugar was for those six hundred patients, and whether I am meeting that average level as a quality measure. It is a completely different practice environment for physicians and those about to become physicians. And physicians still of course need to provide exceptional care in that one-on-one interaction with a particular patient, but providers will also be asked what they are doing for the population that they are treating as a whole. Say a physician has 332 people with hypertension in their practice—the practice will be asked how many of those patients have a controlled blood pressure, which is a very different question than "did I put Mr. Johnson on Atenolol?" It is a very different question and interaction between the practitioner and their practice and the payors—and that's good news.

There are a lot of what are called 'bundled payments' that were supposed to be released by CMS this year that have been slowed down. But, this is where we will be ten years from now, because our healthcare system is just so unaffordable that we need to have other options to try and address these costs. This is part of what CMS is already doing with

CMMI, CMS's new innovation center. CMMI allows practitioners to think about the individual that they are taking care of as a whole, not just an individual with hypertension. This patient lives in a community, and there are these social determinants that impact how healthy they are.

CMS has gotten on board to this concept with their pilot program called 'Accountable Health Communities.' Within this pilot, providers will ask their patients a list of questions on topics like housing instability, food insecurity, transportation needs, utility needs, and interpersonal safety. Healthcare 3.0 is a different framing of the doctor-patient relationship; again, it is not just about the hypertension, but it also asks whether providers are addressing other needs of patients. No one, of course, expects a physician to become a housing expert, but payors will look at whether physicians make sure their patients are connected to the right agency to ensure they have housing.

There are lots of examples across the United States of large systems bearing the cost of individuals who repeatedly come into hospitals; and what these large systems find is that the best possible thing to do for these patients is to house them. Housing is also considered a social determinant of health because of asthma, which affects ten to fifteen percent of the population. Sometimes, hospitals have patients come in to emergency rooms with asthma, and providers will put these patients on first, second, third line drugs. It turns out, however, that providers will provide a greater benefit to the patient if you send someone to the house to look at and address environmental exposures rather than going through the tiers of drugs for asthma. If those environmental exposures are addressed, patients, especially young children, will be kept out of the emergency room, and the provider will keep that patient off a lot of medications too.

Another example of why housing is a social determinant of health is the case of people who have severe lung disease from years of smoking. An anecdote from Boston, of individuals coming into the emergency room every other day because they weren't breathing very well. If a healthcare provider were to send someone to the patient's home during the summer and realize that patient didn't have an air conditioner, it turns out that \$450 air conditioner saves tens of thousands of dollars to the person constantly coming into the emergency room.

Public health has long last said that we need to be talking about public health 3.0. It is coincidental that healthcare and public health are both 3.0, but what is not coincidental is the realignment of public health and healthcare to ensure that we are addressing these social determinants of health and to assure we have healthy people, not just healthy patients. We obviously want to try to keep people from becoming patients.

Data from the National Association of County and City Health Officials was able to demonstrate that, if a community has comprehensive systems in place, you can decrease mortality within that

community compared to communities that don't have these comprehensive systems to take care of patients. It's a really great demonstration that public health can work effectively in the social environment and have a large impact on mortality within communities. And what this really says is that what we need to be doing is rethinking healthcare or health in a way so that we are investing within our communities and thinking of health as part of the picture. Clinical care only affects about twenty percent of an individual's health; the remainder is all attributed to and impacted by a person's outside environment, including socioeconomic factors, an individual's physical environment, and their own personal health behaviors.

In order to make the case for accountable health communities, I'm going to use Douglas County, Nebraska as an example. Basically, if you look at 78 percent of early deaths in the county, it has been determined that four chronic conditions—cancer, heart disease and stroke, lung disease, and Type Two diabetes—are responsible for nearly four-fifths of deaths in Douglas County. These four chronic diseases are attributed to four unhealthy behaviors: lack of physical activity, poor diet, substance use and binge drinking, and tobacco use. These four behaviors are influenced by nine socioeconomic factors, including access to healthy foods, access to preventative care, employment equality, and safe and affordable housing. If I want to influence these 78 percent of early deaths within this community, I would get the greatest value out of working on issues around transportation, employment, and housing; not by working on making sure as a physician I am prescribing enough anti-hypertensives.

As a physician, we tell people to exercise, to get out and walk in their neighborhood. But do we ask, is it safe to walk in that neighborhood? Did someone end up putting sidewalks in your neighborhood so you don't get hit by a car? We tell people to eat healthy; do we determine whether these options are actually available in our patients' neighborhoods? It is easy to say these things to our patients, but as physicians, we need to think about whether these things are actually available to our patients in their communities.

Accountable health communities call for a different way of thinking about health within communities, a way that is more patient-centric and community member-centric than it currently is. Population health can be advanced by institutions collaborating with one another to address social determinants of health and how they may impact health within communities. Hospitals, for example, are just one part of what we need to consider when we think about creating accountable health communities.

I think about how Uber became a billion-dollar company. It was so simple; Uber took data that said, "I have a car and am available to use it" and "I need a car," and it put those two pieces of information together in real-time, and became a billion-dollar company. Uber doesn't own the people, it doesn't own its drivers; all it did was put

two pieces of critical information together. It is a completely different way of thinking about how anyone who is interested in working in the community to improve health within an incentivized model. The question is, how do we incentivize public health? We do not currently have the right incentive model in the United States to think about how providers make money if it is a physician's job to make people healthy. While that is not how the system is currently structured, with good data it is how the system could be structured.

One of the major critical health law issues we need to think about is how our healthcare system is going to look as we move from 'Obamacare' to what will be 'Trumpcare' in the future, and what those consequences will be as we think about the legal implications. Some consequences that are particularly disturbing are the loss of essential health benefits for people and the loss of protection from pre-existing conditions. Soon enough, people will be able to buy these less expensive association plans that can be sold across state lines that promise everything and deliver nothing, and appropriately cost nothing. While moderate Republicans in the Senate prevented "repeal and replace" measures from becoming law, the GOP Tax legislation has repealed the individual mandate. Additionally, President Trump has shifted to using Executive Orders to 'implode' or destabilize Obamacare, including stopping CSR payments that reimburse insurers for subsidies individuals receive in the marketplace.

CLOSING THOUGHTS

Let's return back now to the myths, or 'zombies' that are out there about healthcare in the United States, and see if we can remove some of these. Does America have the best healthcare system in the world? No, we don't; for the community as a whole, America does not have the best healthcare system. Employment does not guarantee health insurance in America; there are lots of people who remain uninsured. The uninsured do not have equal access to emergency room services. In fact, lack of insurance alone increases risk of death by 25 percent, and emergency room services are far costlier to the national budget. Is the free market the best way to get the highest quality health insurance for the lowest price? In short no; not only is our current system not a free market system, it is a for-profit system that is driven by health insurance companies. Finally, is universal coverage too expensive and unaffordable? No, as developed nations with universal coverage all accomplish what the United States does but with lower national health expenditures and reduced waste.

There are lots of good models on how everyone can get coverage and better care without going to a single payor system, however. We could have a multi-payor system, which makes sure that everyone has good quality healthcare that is more than just access to care for all. Data indicates that access alone is not enough to improve health, and

is definitely not enough to improve equity in our healthcare system. We could also have precision health as the amalgamation of healthcare 3.0 and public health 3.0.

I am willing to give you, each reader, \$2 trillion dollars today, on this condition. Tell me how you would improve the healthcare system if you would be willing to let go of the fraud, waste, and abuse within the system, and if you would be able to let go of the 8% of administrative costs currently being spent in the system, to ensure that every dollar really went into the community and toward each patient's health and healthcare. It is a challenge as easy as convincing butchers to promote fruits and vegetables. How do we, as a community, when everyone wants to sell people healthcare, change to a community that wants to instead sell health?

The great Dr. Oliver Schroeder once said, "The practice of medicine is moving from an amoral to a moral science aimed at preserving a healthy condition rather than intervening in a pathologic crisis." Who would have thought he was a public health practitioner as well?