SPRING 2017

PENN HEALTHCARE Review

PRODUCED BY WHARTON UNDERGRADUATE HEALTHCARE CLUB

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PHILANTHROPY AND HEALTHCARE

Role of philanthropy in breast cancer services

Predatory Stem cell clinics

Dangers of for-profit clinics offering non FDA-approved stem cell therapies

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Where *Business* Meets *Healthcare*

Dear Readers,

We are thrilled to be publishing our third issue of the Penn Healthcare Review. Our writers investigate and critically examine current health policies in the United States and abroad, bring to light different facets of the pharmaceutical industry, taxation policy, cost-benefit analysis, and discuss complementary and alternative medical practices.

Through this publication, we seek to engage the Penn community and our broader readership in discourse surrounding the intersection of healthcare and business. I am incredibly proud to have such a dedicated Editorial Board, Design Team, and Business Staff, and to have such creative writers who contributed to this publication.

Sincerely,

Alisa Feldman,
Editor-in-Chief

Special thanks to our Spring 2017 Featured Speaker: Julie A. Sochalski, MS, PhD, Former Director of the Division of Nursing and Principal Advisor for Health Workforce Policy at the Health Resources and Services Administration.

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RARE DISEASES: An Opportunity for Big Pharma to Help Underrepresented People

By Karthik Prabhakaran

Big Pharma has profited enormously for decades through monopolies over specific drugs. However, the expiration of patents has posed and continues to pose a substantial threat to Big Pharma, as generics and cheap competitors secure market share. The U.S. government, along with the governments of several other countries, took advantage of the situation and managed to offer a solution that would entice Big Pharma into spending resources on researching rare diseases.

Pharmaceutical companies generally spend most of their resources and time on researching and producing pharmaceutical compounds that can treat or cure common diseases. Financially, such a trend is intuitive, as companies will make drugs that cater to the largest consumer base possible. Unfortunately, patients with rare diseases have had to settle for expensive treatments or no treatment at all due to the relative lack of research conducted on rare diseases in comparison to research conducted on common diseases. The U.S. government provided the following solution: they provide financial and regulatory benefits (from the Orphan Drug Act of 1983 as well as more recent legislation) to Big Pharma in exchange for Big Pharma venturing into the rare disease market in order to conduct research and develop drugs to treat these diseases.[1] This solution should be continued and expanded worldwide, as patients with rare diseases are gaining access to better treatments by the year due to Big Pharma putting forth their resources into the industry.

Monopolies for specific drugs are established by having patents, which control the rights to the product. Patents for pharmaceutical drugs restrict the sale of generics, near-identical copies of brand-name pharmaceutical drugs which have to match the performance and quality (as well as match the general characteristics) of their brand-name counterparts in order to be federally approved for sale at discounted prices. Generally speaking, generics can only be sold after the patent for their brand-name counterpart expires. Once the patent expires, the monopoly collapses as competition enters the market. This situation is known as a "patent cliff." Big Pharma has dealt with patent cliffs over the past decade, resulting in steep losses in revenue as generics assume increasing control of markets where Big Pharma previously held monopolies in.

For an example, just look to Pfizer, an American pharmaceutical giant which held a patent on Lipitor (a drug formally known as atorvastatin that treats high cholesterol and fat levels in the bloodstream) until November 30th, 2011.[2] Pfizer held a patent on atorvastatin and thereby established a monopoly in the market, meaning Pfizer was the sole producer of an essential drug that millions of people across the world were prescribed. Consequently, from 1996 (when Pfizer acquired the rights to Lipitor) to 2012 (when Pfizer's patent on Lipitor expired), Lipitor became the world's best-selling pharmaceutical and resulted in more than $125 billion in sales.[3] However, Pfizer took a major hit from the patent cliff for Lipitor, reporting that profit declined 19% in the early months of 2012 mostly because of declines in Lipitor sales as generics assumed increasing control of the market.[4]

The U.S. government offered a solution, which essentially incentivizes Big Pharma to enter the rare disease market and produce orphan drugs, drugs which are designed to treat diseases that affect small subsets of the population. The governmental benefits consist of research

subsidies, patent protection, tax breaks, expedited FDA approval, and other financial and regulatory inducements.[5] In order to weigh the solution's effectiveness in both regards (developing drugs to treat rare diseases and helping Big Pharma recoup financial losses), consider the case of Synageva BioPharma Corp. Despite having no products for sale, Synageva was sold for $8.4 billion in 2015 because it had an orphan drug in development that was slated to receive approval from the U.S. government.[6] In this case and many others, orphan drugs were being developed to help patients and make profit. Currently, more orphan drugs are available to patients now than ever before. The U.S. strategy for promoting rare disease research is admirably productive and should be adopted globally.

Perhaps the most significant problem with incentivizing the production of orphan drugs is that Big Pharma holds monopolies in the markets for rare diseases and can enact price hikes. However, after notable price hikes by Turing Pharmaceuticals (for Daraprim), Mylan (for the EpiPen), and even Pfizer (for phenytoin sodium capsules), there has been increased public scrutiny as well as increased governmental investigations into price hikes on drugs (with some investigations culminating in million-dollar fines).[7] Consequently, incentivizing the production of orphan drugs should not only continue but expand, as watchdog organizations as well as public and governmental scrutiny will ensure that unreasonable price hikes do not occur.

Governments should continue and expand the practice of providing financial and regulatory benefits to Big Pharma in exchange for Big Pharma developing drugs to treat rare diseases. This practice has improved treatment options for patients with rare diseases by the year and will continue to do so in the coming decades, emphasizing the importance of worldwide adoption of this practice.

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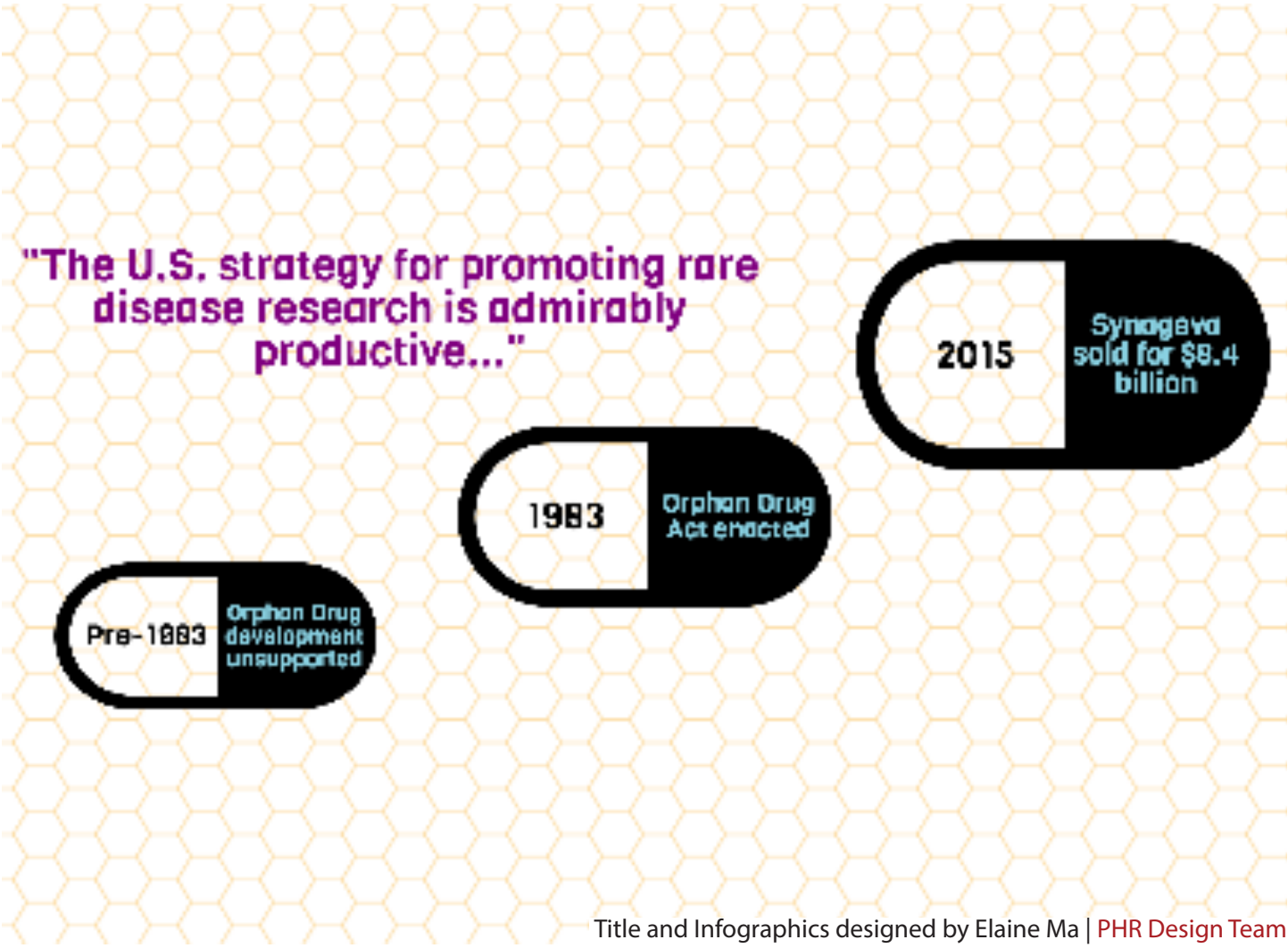

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What *Trump's Presidency* Could Mean for Reproductive's Rights and Women's Health

by Madeline Covington

After a bruising campaign that focused heavily on Donald Trump's treatment of women, what could the new administration mean for women's health? During the presidential race, Trump promised more comprehensive pro-life policies, including defunding Planned Parenthood and overturning Roe v. Wade. The Republican party made a goal to repeal the Affordable Care Act within his first few months in office.[1] Such positions held by Trump and his cabinet will likely reopen emotional debates about the role of government in healthcare at both the federal level and within state legislatures, and, could ultimately change women's access to reproductive healthcare in America. Will President Trump's actions match his campaign rhetoric?

"Global Gag-Rule"

One of Donald Trump's first acts as president was to reinstate the "global gag rule": a law that defunds non-government organizations if they offer abortion as an option to pregnant women. This rule, formally called the Mexico City Policy, has been equally revoked by Democrats and enforced by Republicans throughout the past few presidencies. President Trump, however, has decided on a stronger iteration of the global gag rule that demands NGOs to disclaim their involvement with all abortion services if they want to receive any health funding at all, instead of previously just cutting funding for reproductive health services.

Under Trump, this updated rule will impact an estimated $9.5 billion in foreign aid funding, as opposed to $600 million, and will mean organizations working on AIDS, malaria, or maternal and child health will have to make sure that none of their programs involve an abortion referral. As a result, women seeking abortions may turn to unsafe practices. Unsafe abortions are one of the leading causes of maternal mortality worldwide, with the World Health Organization estimating that a woman dies of an unsafe abortion every eight seconds.[2]

Roe v. Wade in the Crosshairs

Since Roe v. Wade was decided in 1973, Democrats and Republicans have battled over efforts to restrict abortion rights, with virtually all Republicans voting pro-life. Trump has already pledged to appoint a conservative Supreme Court justice who will overturn Roe v. Wade[3], and chose Indiana Governor Mike Pence as his running mate. Pence has signed numerous abortion restrictions into law as governor and championed proposals to restrict abortion and defund Planned Parenthood while serving in Congress.

The Supreme Court has long been divided on abortion, narrowly upholding Roe v. Wade while allowing states to pass various restrictions on abortion access. Most recently, in a 5-3 decision issued after Justice Scalia's death, the court overturned a Texas state law that required abortion clinics to meet the standards of surgical facilities and mandated that doctors who work at the clinics have admitting privileges at nearby hospitals.[4] The court ruled that these restrictions would force so many clinics to shut down that women would not have meaningful access to abortion services.

Trump's promise to appoint conservative pro-life

jurists has far-reaching implications. Since swing voter Anthony Kennedy and liberal justices Ruth Bader Ginsberg and Steven Breyer are all more than 70 years old, President Trump could reshape the balance of the court on abortion over his four years in office. It would only take more two appointments to form a court that would likely overturn Roe v. Wade.

More immediately, Trump is likely to support legislative efforts to restrict access to abortion. Since Republicans won back control of the House in 2010, they have offered several proposals to restrict abortion, including a ban on abortions after 20 weeks' gestation, known as the Pain Capable Unborn Child Protection Act[5], and numerous efforts to defund Planned Parenthood. This ban would directly challenge Roe v. Wade because it bans an abortion pre-viability. Under the Roe framework, which was modified by Planned Parenthood v. Casey in 1992 to allow regulations that do not place an "undue burden" on a woman's ability to access abortion, the state cannot put a blanket ban on an abortion procedure before the fetus reaches viability.

Working Families

Other than abortion rights, Trump has strong viewpoints on another policy area with major implications for women: help for working families. On reproductive rights, he supports traditional Republican policies to restrict the availability of abortion. However, his promises regarding child care and family leave chart new territory for Republican candidates and policymakers.

Included in Trump's agenda for his first hundred days in office are proposals to make child care tax deductible, create dependent care savings accounts and incentivize employers to provide child care services.[9] Originally conceived by his daughter Ivanka, Trump has also proposed to provide six weeks of paid leave to new mothers using federal unemployment insurance – a concept that will displease the Republican congress.[10] Many Republicans dislike imposing new mandates on business and expanding social welfare programs.

As his presidency goes on, we will see if Donald Trump and his cabinet will continue to push for increased abortion restrictions and determine a replacement for the Affordable Care Act. We will also see if he will be able to persuade the Republican majority to increase rights for working families. Based on his first executive order, and those he has picked for his cabinet positions, however, it seems unlikely that Trump will soften his campaign-trail rhetoric in relation to women's reproductive health.

"Trump is likely to support legislative efforts to restrict access to abortion. Since Republicans won back control of the House in 2010, they have offered several proposals to restrict abortion, including a ban on abortions after 20 weeks' gestation, known as the Pain Capable Unborn Child Protection Act, and numerous efforts to defund Planned Parenthood. "

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As part of efforts to repeal or rewrite the Affordable Care Act, Trump could use executive action to eliminate regulations that require insurance companies to provide women with free access to contraceptives. "Obamacare" currently provides roughly $1.4 billion of mandatory contraceptive funding to American women each year.[6] House Speaker Paul Ryan has refused to predict whether Congress would retain the ACA's requirement for insurers to cover contraceptives if it overhauls the law.[7] Before the ACA – which demands that pregnancy and maternity be covered under the 10 essential health benefit categories – insurance policies were able to charge women more because of their gender, and plans often excluded crucial maternity coverage.[8] With no clear replacement plan presented yet, and the fate of Planned Parenthood in the United States undetermined, recipients of reproductive health care from either party are left in the dark.

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INSURANCE FOR EVERYBODY

CRITIQUING DEMOCRAT TOM PRICE'S PROPOSALS ON HEALTHCARE REFORM

BY JANICE HUR

Introduction

Dr. Tom Price's was confirmed as the Secretary of Health and Human Services by a party-line vote of 52 to 47. As an affluent orthopedic surgeon from the northern suburbs of Atlanta, Price seems capable of fulfilling his proposals. He promises to fix a "broken health care system harming Americans and their families." He emphasized that as a once practicing physician, he would provide a raw, unedited insight into managing the federal agency, starting with abolishing the Affordable Care Act. However, while Mr. Price's statements are lofty, none of them are backed by quantitative measurements.

"Just days ago, President-elect Trump promised, quote, 'insurance for everybody,'" said Senator Patty Murray of Washington, the senior Democrat on the Committee on Health, Education, Labor, and Pensions. "But Congressman Price, your own proposals would cause millions of people to lose coverage, force many people to pay more for their care, and leave people with pre-existing conditions vulnerable to insurance companies' rejecting them or charging them more." In response, Dr. Price provided no substantiated rebuttal. Instead, he gave an indirect response supplied with a lengthy list of accomplishments and accolades.

Conservative Policies and "Personal Responsibility"

Phillip J. Blando, a spokesman for the Trump transition team, said Dr. Price had been endorsed by many medical groups and was "uniquely prepared" for the job. "If confirmed," he said, "Dr. Price will work to restore the patient-doctor relationship and clamp down on government overreach."

Mr. Price has introduced legislation to repeal the Affordable Care Act, including its expansion of Medicaid, the federal-state program that provides coverage for more than 70 million low-income people,[1] and subsidies for purchasing private insurance. He advocates tax credits to help people buy insurance, greater use of individual health savings accounts and state-run "high-risk pools" for people with pre-existing conditions who might otherwise have difficulty finding affordable coverage.

As a chairman of the House Budget Committee, Price has supported proposals to shift Medicare away from its open-ended commitment to pay for medical services and toward a fixed government contribution for each beneficiary, which could be used for either private insurance or traditional Medicare. According to health policy experts, such proposals could increase costs for some beneficiaries or limit the amount of care they receive.

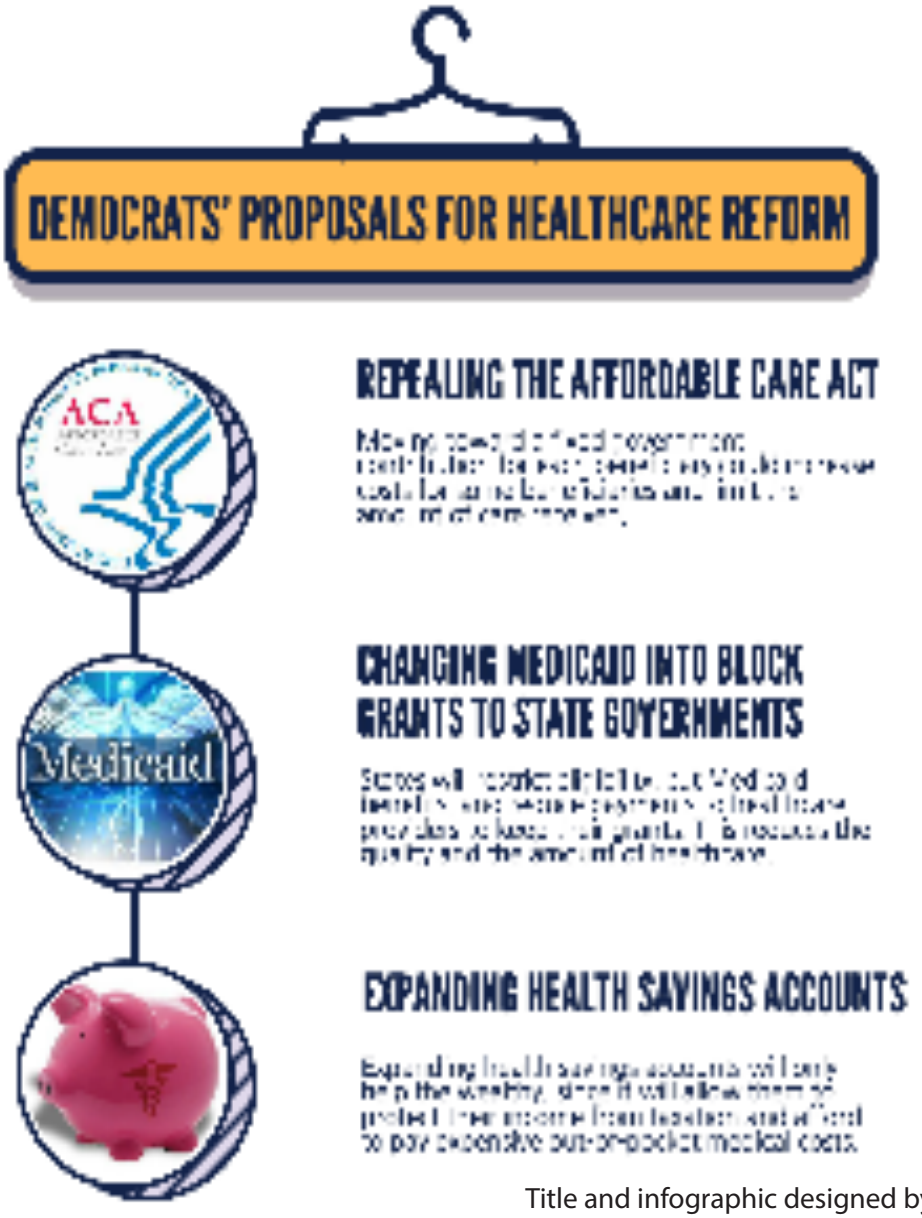
Dr. Price has also backed turning Medicaid into block grants to state governments. Critics say that states would probably respond by restricting eligibility, cutting Medicaid benefits, or reducing payments to health care providers. He added that, if confirmed, he would try to give states more freedom and flexibility under Medicaid. For example, he said states should be allowed to require certain able-bodied adults without children to work, seek work, or participate in job training as a condition of receiving Medicaid. Some Republican governors want to impose such requirements, but the Obama Administration had previously turned down such proposals.

Dr. Price praised Indiana's program to expand Medicaid eligibility under the Affordable Care Act with conservative policies that state officials say promote "personal responsibility." "States know best" how to care for their Medicaid beneficiaries, he said, adding, "What Indiana has done is really a best practice, I think, for many other states to follow."

Replacing the Affordable Care Act (ACA)

Dr. Price has stated that the administration could put in place, "a different construct" that "would allow for every single person to gain access to the coverage that they want and have nobody fall through the cracks." He did not say how the Trump team would guarantee such protection. President Trump has expressed support for a provision of the 2010 health law under which insurers must allow children to stay on their parents' policies until the age of 26. This is "baked into the insurance programs that are out there right now," Dr. Price said.

However, Democrats are skeptical. Senator Maggie



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Hassan of New Hampshire said there was no guarantee that such protections would continue in the absence of federal requirements. Insurance companies did not routinely cover these treatments and care in the past and might not do so in the future without a requirement, she said.

Impact on Healthcare Progress

In a confirmation hearing, Dr. Price suggested that Congress and the new administration could improve health care by expanding health savings accounts in which people can put aside money, tax-free, to pay for out-of-pocket health costs in the future. However, these proposed accounts would not help families earning the median household income of $56,000 a year because these families would never be able to pay for expensive treatments, such as cancer treatment or a major surgery. These accounts would primarily benefit the wealthy, who want to shield more of their income from taxation and can easily afford to pay high out-of-pocket costs. Dr. Price failed to acknowledge that his out-of-pocket proposals will inevitably lead to health care disparity. Care will be given to those that can afford it, and neglect will amplify pre-existing social determinants of health.

Dr. Price's own proposal, which he presented as the chairman of the House Budget Committee, would cut Medicaid by about $1 trillion over the next decade. This is on top of the reduction that would result from repealing the Affordable Care Act, both championed by President Trump and Republican leaders. Together, full repeal and block granting would cut Medicaid and the Children's Health Insurance Program funding by about $2.1 trillion over the next 10 years — a 40 percent cut.

Conclusion

Democrats at all levels of government must aggressively communicate the degree to which these proposals would limit health care access for those in nursing homes, working families straining to deal with a serious disability, and poor Americans. With many Republican governors and local hospitals also likely to be victimized by the proposals of Republicans and Dr. Price, this fight is both moral and political.[2] Dr. Price's proposals count essentially any health insurance plan as creditable coverage. There is no concrete definition as to what qualifies as health insurance with actuarial value or what the cost sharing insurance policy permits is. Such policies would increase the price of comprehensive coverage and make it difficult to find comprehensive coverage. It would take only three Republican senators thinking twice about the wisdom of block grants and per capita caps to stop to the coming war on Medicaid. Otherwise, insurance for everybody might end up as insurance for nobody.

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The Philadelphia Beverage Tax: Where health and economics bubl

Recent data from the Philadelphia Department of Public Health suggests 31.6% of adults and 23.7% of teenagers in Philly consume at least one sugar-sweetened beverage each day.[1] However these numbers are likely to change with Mayor Jim Kenney's recently enacted Beverage Tax." The tax, commonly called the "Philly Soda Tax," places a 1.5¢ charge per ounce on non-alcoholic beverages listing sugar-based sweeteners (glucose, sucrose, and high-fructose corn syrup), artificial substitutes, and natural sweeteners.[2] Beverages taxed include sodas, diet sodas, non-100% juices, mixers, and sports drinks. However, despite the link between sugar-sweetened beverages and exorbitant health conditions like diabetes, heart disease, and obesity,[3] Kenney instead hailed the tax as a way to fund pre-Kindergarten expansion, community schools, parks, libraries, and recreation centers.[4] The tax, enacted on January 1st, is estimated to raise a whopping $91 million a year.[5] The first week alone generated enough funds to provide pre-K education for almost 2,000 children.[6]

While Kenney strategically avoided the topic of public health during the tax's conception, the "Soda Tax" is unavoidably tangled with the city's health. The connection between the consumption of sweetened beverages and pressing health conditions begs the question of how this tax could make Philadelphia a healthier city. Considering health costs from obesity and overweight are estimated at $147 billion per year and account for 9.1% of U.S. health care expenditures,[7] the potential impact of the tax on consumer health warrants significant appreciation.

Studies analyzing previous taxes on sugar-sweetened beverages (SSBs) provide promising insight into their health benefits. These taxes have been implemented in countries like Hungary, France, and Mexico.[8] Mexico, which implemented a similar nationwide tax in 2014, experienced a drop in taxed beverage consumption within months. Sales of taxed beverages decreased across all socioeconomic groups.[9] In particular, the lowest socioeconomic households exhibited the greatest drop with a 17% fall in sugary beverage sales.[10] This drop proves to be particularly promising to U.S. public health officials as soda drinking in the U.S. occurs over twice as often in low-income individuals.[11] While analysis of the Mexican SSB tax illustrates a change in consumer behavior, especially in those with the most vulnerable socioeconomic status, the long term health effects remain to be seen.

In addition to changes in purchasing of SSBs, the Philadelphia beverage tax could also take on a greater role in consumer education. Firstly, the tax received substantial publicity. Consumers have been bombarded by advertisements across television, billboards, and radio in support and defiance of the tax. While the use of misleading terms, namely the term "Grocery Tax," may have misconstrued the rationale behind the tax, consumers have been forced to confront the presence of sugary sweeteners in their household items. The idea of taxing sugar and other sweeteners is reminiscent of the singled-out nature of Pennsylvania tobacco and alcohol taxes. Furthermore, the rallying of citizens for the tax puts beverage companies in an awkward position in which they feel pressure to reform their products.[12] Therefore, while the tax may be absorbed by retailors whose consumers' wallets fail to feel it, the backlash against SSBs will likely leave a taste of reality in consumers' mouths.

The success of the tax depends on a number of economic conditions. Firstly, the tax must be high enough to actually impact consumer behavior. This condition relies larger on whether retailors decide to absorb the cost of the tax to maintain their pre-tax prices, or pass the new cost on to consumers. In the case of Mexico, the majority of retailers passed the tax onto consumers.[13] If Philadelphia retailors follow after this example, then the price elasticity of SSBs, or consumer responsiveness to price changes, will kick in. As SSBs come with high price elasticities, consumers would likely respond to the added cost by decreasing the amount of SSBs in their cart.[14] In addition, some studies hint that Mexican consumers may have increased their purchase of healthier alternatives like bottled water, whose sales increased by 5.22%.[15]

ble up

By: Alexandra Grizos

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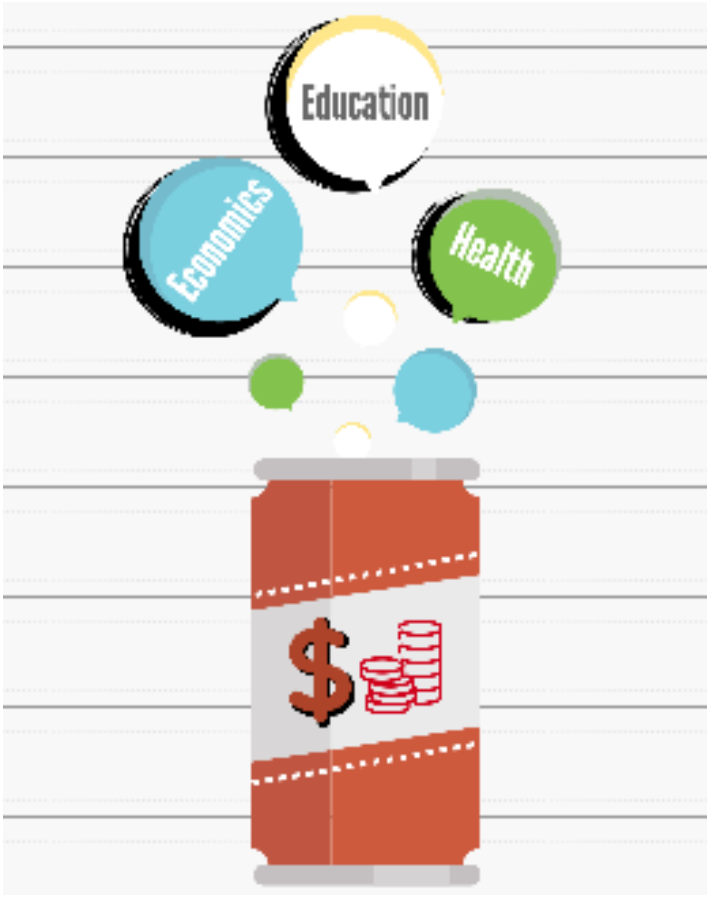

Despite the potential health and economic benefits of the tax, for some the movement has been swallow. From the beginning the beverage industry has demonstrated unsurprising resistance. The American Beverage Association has spent close to $30 million to oppose similar taxes across the country in the form of advertisement and legal disputes.[16] Advertisements have framed the tax as a "Grocery Tax" meant to take money out of families' pockets at neighborhood stores. Critics largely proclaim it a regressive tax which unfairly targets low-income families.[17] While lower-income individuals are more likely to be SSB consumers and spend a larger share of their income on SSBs than high-income groups, studies have shown that these individuals demonstrate higher price elasticity for these items.[18] Therefore, although low-income consumers will be influenced by the tax, they will likely adjust by decreasing their consumption rather than taking on unnecessary financial burden. Furthermore, this reaction could help them avoid expensive health conditions that come with excessive SSB consumption.

While the larger health effects of SSB taxes remain to be seen, this expected change in purchasing behavior alone presents an optimistic perspective of the tax's influence on public health. The tax presents an opportunity for Philadelphians to adjust their sugar intake and educate themselves on the connection between SSBs and life-threatening health conditions. As a spokesman for Healthy Food America stated, the tax "could very well be the turning point in how people perceive soda."[19] Looking forward, the tax paves the way for the beverage industry to realize its fear of becoming the next tobacco. [20]

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In 1848, Rudolf Virchow, a pathologist and prominent physician in the 19th century, stated, "The improvement of medicine would eventually prolong human life, but improvement of social conditions could achieve this result now more rapidly and more successfully."[1] While Virchow's statement was not fully appreciated in his time or for decades afterwards, most public health professionals today would readily agree with him. In fact, numerous studies have demonstrated that stable employment, opportunities for a good education, and similar policies that promote a better quality of life are even more important to our health than our access to medical care.[2] These factors, grouped under the broad umbrella of the social determinants of health (SDH), are experiencing a resurgence in the public health field.

Social determinants of health are the conditions in which we grow, live, work, and age, including the larger political and economic forces that shape the daily conditions of our lives. This includes socioeconomic status (income, education, and employment), race, gender, our neighborhood and built environment, and access to healthy food, among others. Unlike individual risk factors such as diet and exercise, social determinants maintain an association with health even when risk factors change. For example, an individual with a higher socioeconomic status would likely have better health outcomes than their identical counterpart with a lower socioeconomic status, regardless of how their diets or exercise plans differ.[3]

Although each of the social determinants have observable effects on health on their own, they do not act in isolation. Instead, they act in conjunction to produce unwanted (or desired) health outcomes. In particular, inequalities in the social determinants of health between communities, such as high levels of income inequality, disproportionate exposure to pollution, and unsafe neighborhoods in some areas versus others have significant impacts on the overall health of populations. For example, racial residential segregation, defined as "the physical separation of races by enforced residence in certain areas," has been proven time and time again to be a fundamental cause of racial disparities in health.4 Segregating African Americans to areas with lower access to education and employment opportunities will ultimately lead them to a lower socioeconomic status, which in turn negatively affects their health outcomes.[4]

It is important to note, however, that these observable differences in health due to inequalities are man-made (by both the presence and absence of key policies), and are thus reversible. Public health professionals, government officials, and health systems across the country are working to understand how to effectively address important social factors with their programs and policies in a way that is cost effective and,most importantly, positively impacts vulnerable populations. While there have been great strides in these efforts, I believe there is one collective voice that has been overlooked: the community. Although not as popular as the others, social cohesion and self-efficacy are two powerful social determinants that can strengthen current strategies and ultimately be the difference between a successful program and a well-intended effort.

Social cohesion refers to the connectedness and solidarity among groups in society; it is defined by the willingness of members to cooperate with each other in order survive and prosper. [5] Social cohesion often underlies many successful efforts to improve the social determinants of health in communities. Closely intertwined with social cohesion is self-efficacy of community members. When individuals feel as if they have a stake in their future, improved health outcomes follow. [6]

An example of how these social determinants work in practice comes out of Kansas City, Missouri. In the year 2000, white residents in Kansas City had a life expectancy

MENT

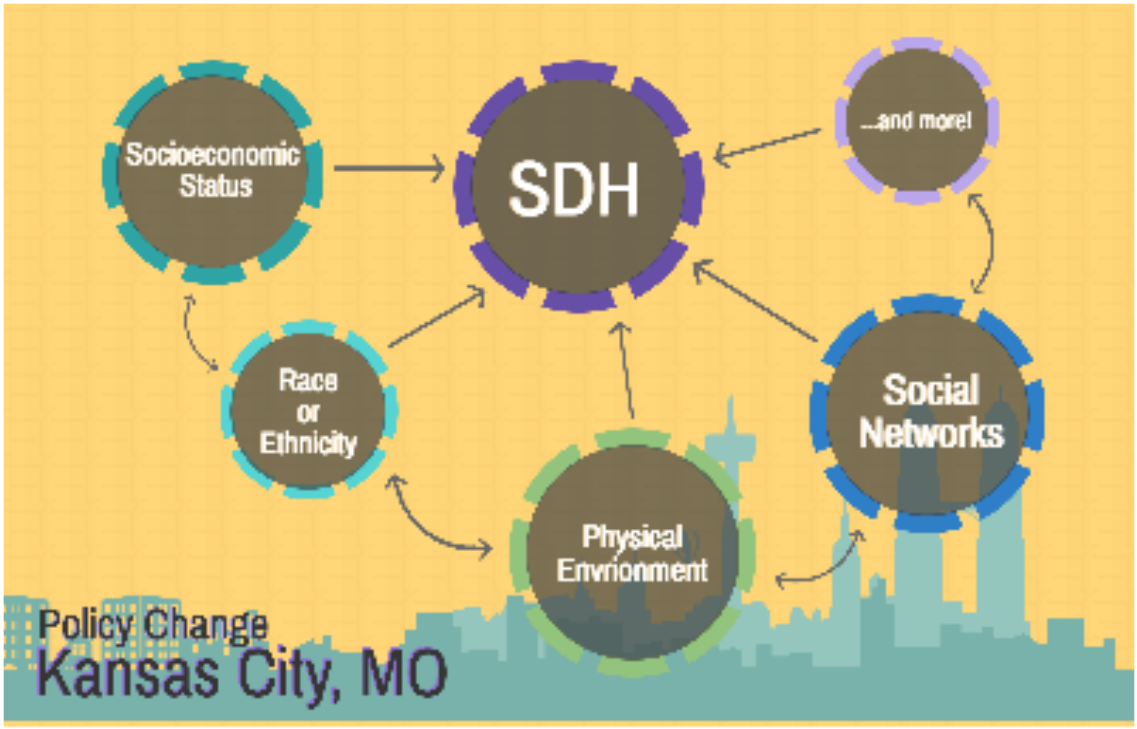
By Puja Upadhyay

Cohesion and Self-Efficacy

Title and infographic designed by Kevin Yang | PHR Design Team

6.5 years higher than that of their African-American neighbors. For city officials, this was a major turning point. Instead of trying to address specific diseases and health problems that the city faced, they chose to focus on the underlying causes of poor health and zeroed in on race, violence, access to education and care, and economic injustice. Recognizing that change in the mobilization of communities could only arise when the people who are most affected by these disparities had an active role, the health department and city officials sought to create partnerships with these communities. Each plan they developed involved giving agency and power to communities still recovering from years of racial oppression. [7]

An organization called Communities Creating Opportunity used a community organizer to work alongside Kansas City community members and made them stakeholders in the betterment of their own health. Recently, efforts by this organization resulted in a policy change with great potential to improve the health of the urban poor: a rise in the minimum wage from $7.65 to $8.50. This wage is expected to reach $13 by 2020. With



Beginning

Many neighborhoods are still recovering from decades of racial oppression. According to 2000 Census, Whites live on average 6.5 years longer than African Americans.

Middle

City officials recognize that in order to improve health, they must focus on root causes of poverty. Partnership between organizations and community members must focus on empowering individuals to voice their concerns.

Ongoing End

Better health outcomes are beginning to arise the "Can-do" spirit of the people. Policy change raised minimum wage from $7.65 to $8.50, and plans exist to reach $13 by 2020.

collaboration and high levels of self-determination, Kansas City demonstrated how a community can leverage the social determinants of health to move toward better health outcomes. In this case, the community members were the driving force in working towards a collective rise from poverty and sickness to health.[7]

Unlike efforts to change and measure risk factors, initiatives that are rooted in the social determinants of health require a different evaluation to measure success. Three characteristics are particularly important: sustainability, long-term outcomes, and the ability to address multiple outcomes. Solutions that aim to improve health should be designed to persist over time, change communities slowly but surely, and improve overall quality of life. Social cohesion and self-efficacy are two resources that can help achieve these goals. By approaching health from the bottom up, through the work of communities and the empowerment of individuals, we can ensure that the populations these initiatives are meant to help are not lost in the discussion, but rather the focus of it.

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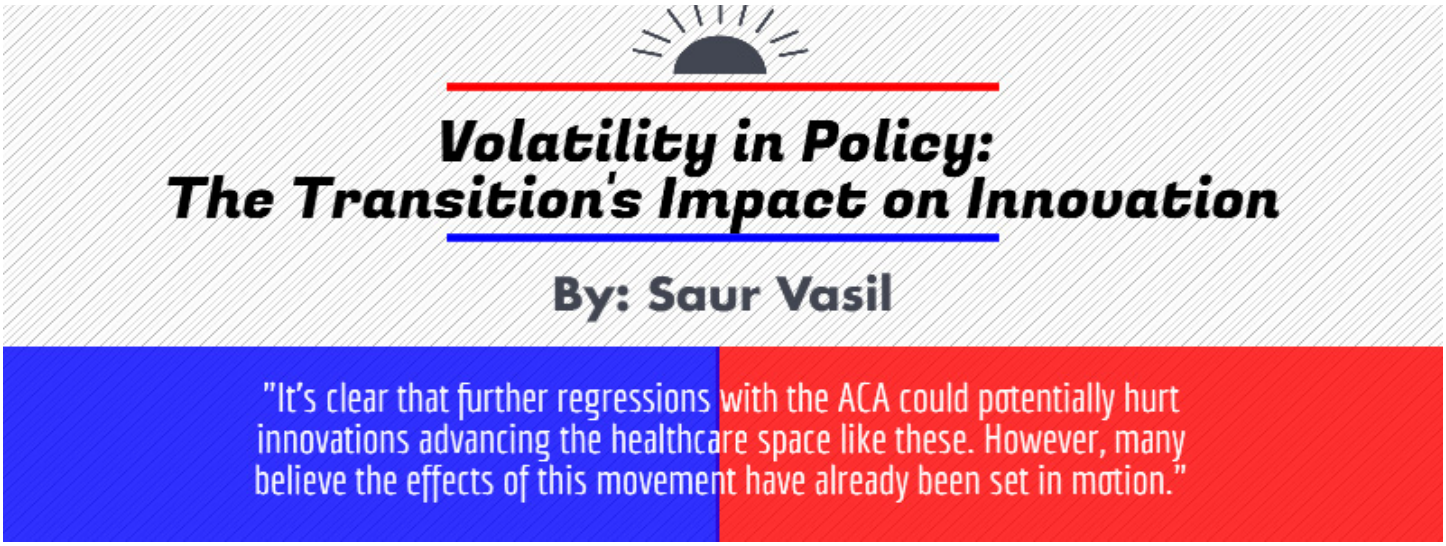


"The world's moving toward population health management, and the idea that I have to think about both the quality of care I deliver and the value of the care I deliver—that's now deeply embedded," Rajeev Singh, CEO of Accolade, says. "I think Obamacare gave it a healthy shove in the right direction. But that's now deeply embedded in the way Medicare pays for healthcare, and therefore now deeply embedded in the way the private sector behaves in terms of delivering healthcare. Undoing all of that doesn't come by undoing Obamacare."[1]

The healthcare industry is inherently volatile. Policy, particularly since the introduction of the Affordable Care Act (ACA) in 2011, has been debated to no end. Countless doctors, including Stefan Hagopian, a doctor in Santa Monica, California, believe that the ACA failed to address the core needs of citizens and doctors. Instead, they believe it benefits insurance companies more.

Hagopian is one of the millions of doctors in America whose coverage "failed to qualify" under the ACA's mandates which needed to be followed by the aforementioned legislation, resulting in his plan with the ACA being cancelled.

He is one of millions of doctors who believe that requiring all Americans to buy healthcare is an unnecessary encumbrance on the healthcare system. President Trump, along with the majority of the GOP base, concurs.

Explicitly, they believe that there simply isn't value in ensuring universal healthcare in the United States. Instead, they believe in a free-market oriented insurance system, eliminating the mandates that require Americans to pay tax penalties for not having health insurance.

Idealistically, their control of both houses of Congress, as well as the Presidency, would allow Republicans to swiftly repeal the ACA.

However, according to Robert Laszewski, president of Health Policy and Strategy Associates, a healthcare consulting group in Washington, D.C., eliminating the mandates will be harder to implement than the Trump administration and supporters may believe.[2] Shortly after moving to the White House, Trump revert-

ed his previous campaign promises of swiftly eliminating "ObamaCare." In an interview with Fox in early February, Trump stated that, "It's in the process and maybe it will take till sometime into next year, but we are certainly going to be in the process. It's very complicated".[3] Companies involved in healthcare universally accept that the ACA was a "treasure trove for innovation" for the healthcare sector, and that its removal could potentially result in devastation for the fast moving digital health industry.[4]

The Supreme Court's decision in 2015 to uphold the ACA was a monumental win for innovators and entrepreneurs.[5] Because of the expanded access to the healthcare market there were millions of new consumers in the healthcare sector.

"It's estimated that, under the law, 32 million more Americans may have health coverage by 2014 -- about 15 million of those under the individual mandate and the rest under the Medicaid expansion, depending on the number of states that implement that provision of the law," states Heather Boerner of Monster.com.[6]

The newly insured have brought billions of dollars of new capital to flow into healthcare investments. Over $22 billion has been invested in digital health startups since the ACA's was passed, which has led to new opportunities for the utilization of these digital health products and has inspired the savviest of investors to jump into the game.

It kick-started the digital health movement and inspired new innovations such as Provata Health, a digital healthcare program that aims to ultimately reduce the number of patients in hospitals, and wearable technology, such as Garmin and Fitbit.[7]

According to Julian Mitchell of Forbes, the expansion of the ACA created incentives for innovative healthcare programs, which encouraged organizations to find methods to shift the focus to integrated medicine, reducing high-cost insurance premiums and allowing the at-risk patients to be seen and treated more swiftly. This had lead to innovations within how the antiquated healthcare system operates, providing added benefits for patients.

In addition, the transition of the fundamental care system from fee-for-service to a value-based model has influenced health innovators to find ways for patients to save and therefore increase efficiency.

The facts are simple. Innovations that allow consumers to monitor their health and reduce risk by encouraging preventative measures are worth it to many, and they are willing to pay out of pocket for products and services that insurance companies do not provide. FitBit, for example, is one of the most popular digital health trackers on the market.

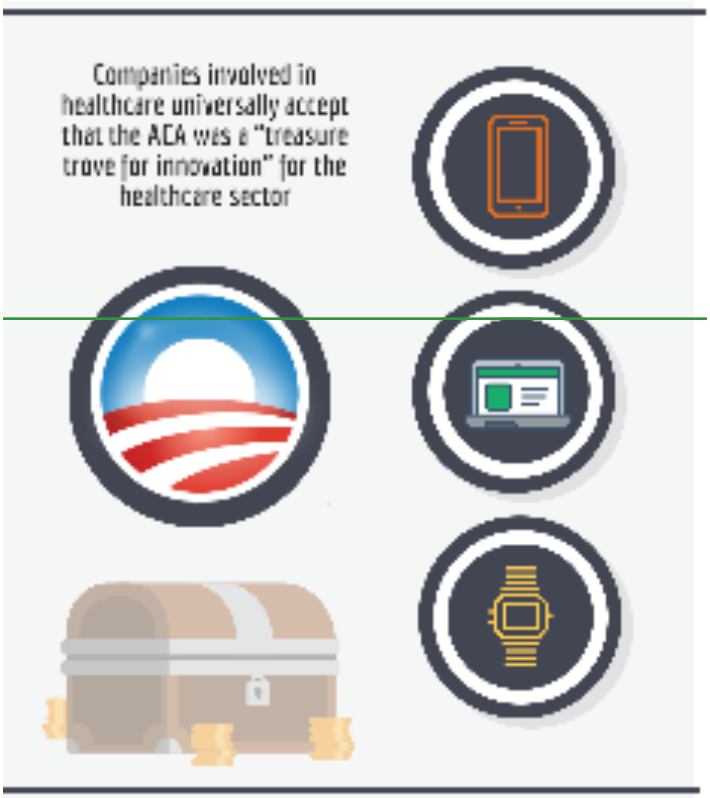
Customers are able to track their sleep, nutrition, health cues such as VO2 and heart rate, and activity just by wearing the FitBit as if it were a watch. This has helped people feel more in control with their health, and is proven to, at least while the device is "new," change people's health for the better.[8]

Since then, other digital health companies, such as MyFitnessPal, Endomondo, and Misfit were acquired. This shows the interest of larger companies, such as UnderArmour, to get involved in the digital health market when consumers are interested in paying directly.

It's clear that further regressions with the ACA could potentially hurt innovations advancing the healthcare space like these. However, many believe the effects of this movement have already been set in motion. Kelly Barnes, PricewaterhouseCoopers US health industries leader and consultant concludes:

> Although the ACA will continue to face crosswinds, it has already had a profound impact on the healthcare business...The ACA has catalyzed major changes in an industry historically slow to change.[9]

While many new digital health companies can take solace in this, it's up to the Trump administration and House and Senate Republicans to draft an effective replacement to the ACA, allowing the millions of new patients to stay insured, and supporting the innovation standards that Obamacare set to revolutionize the future of healthcare.



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PHILANTHROPY AND HEALTH

An Overview of Breast Cancer Services in For-Profit and Non-Profit Sectors

By Jenny Wang

In our modern, globalized world, it is important to recognize that health and philanthropy are closely intertwined. Many healthcare related services are provided through the philanthropies of both for-profit companies and nonprofit organizations. Through the mini-ethnographies of both Avon Products, Inc. and the Linda Creed Foundation, the varying approaches of for- and non- profits to provide breast cancer awareness and services are illuminated.

Avon Products, Inc. is a global beauty company that has sold cosmetics and personal care goods, and has had a vision of beauty, optimism, and economic opportunity for over 130 years.

Meka Moskowitz, the associate manager of the Avon Foundation for Women, stated that the inspiration behind Avon's corporate responsibility work stems from its commitment to "making the world a more beautiful and healthier place through [their] products, [their] people, [their] environmental sustainability, and [their] philanthropy."[1]

Avon's brand position itself, "beauty with a purpose," aligns perfectly with its mission to break traditional barriers to build a better future for women and its philanthropic goal of eradicating breast cancer. The Avon Breast Cancer Crusade program is maintained through four strategies of funding "the most promising work," convening "grantees, partners, and other thought leaders to collaborate for improved outcomes," initiating "innovative projects to accelerate progress," and educating the public to "drive and change behaviors."[2]

Avon's philanthropic goals have proven to be extremely successful: together, the Avon company and the Avon Foundation have contributed over $1 billion in more than 50 countries around the world. Specifically, they have given $800 million to breast cancer programs, $60 million to gender-based violence initiatives, in addition to funding towards scholarships, environment sustainability, and disaster relief.

Avon has been active and effective in disseminating its philanthropic healthcare services to as wide an audience as possible. It not only markets its mission through brochures, websites, social media, but also via its signature fundraising event: AVON 39 The Walk to End Breast Cancer, an annual event that raises funds and awareness. In addition, Avon utilizes its breast cancer philanthropies to raise employees' morale and drive to effect change. According to Ms. Moskowitz, "Many people are excited to work for a company that is purpose driven and making such a significant impact globally." For example, Avon employees themselves helped "raise hundreds of millions of dollars through cause product sales and personal participation in walks, runs, and other fundraising and awareness events worldwide."[3]

In contrast, the Linda Creed Foundation provides services in a very different manner. In 1987, the Linda Creed Foundation was established as the first organization that addresses the serious consequences of breast cancer for all women, not just the elderly. With the vow, "we will be here until breast cancer is not", the Linda Creed Foundation pro-

By Jenny Wang

Combatting breast cancer through philanthropy

Health and philanthropy are associated closely in our modern world. Much of healthcare services are provided through the generosities of non profit organizations and commercial companies. The Linda Creed Foundation and Avon Products, Inc. are two groups which provide breast cancer awareness and services today.

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vides free breast cancer screening and diagnoses for under- and uninsured women. The foundation derives the majority—75%—of its revenue from individual donations, mainly from wealthy sponsors. The remaining contributions are solicited from corporate fundraises or donations via corporate grants. These sponsorships grant the Linda Creed Foundation with a $500,000 annual operating budget. In general, the non-profit collaborates with more than 15 hospitals to screen over 8,000 women in roughly 325 free mammograms and 200 diagnostic tests.[4]

In addition to providing technical services, the Linda Creed Foundation also endorses many breast cancer awareness and educational programs for over 5,000 women. Examples include the Safe Circle Program for African-American and the Rainbow Circle for the LGBT+ community to facilitate open support and communication among minority groups. Finally, since the Linda Creed Foundation serves low-income patients, they also offer financial support to women and their families through the Patient Assistance Fund.

According to Ms. Donna Dunca, the executive director, the Linda Creed Foundation is perceived by the local community, "as a group who help women in need who do not have any other options." She emphasized that especially in our nation's current political state, government does not provide comprehensive medical service. The Linda Creed Foundation and others are here to meet the needs of marginalized populations, which are often deprived of equal access to the necessary healthcare services.[5]

The mission of both Avon Products and the Linda Creed Foundation in breast cancer confirm the indispensable role of philanthropy in health. In addition, they realize that although for-profit companies and non-profit organizations employ different services, they both approach healthcare issues in a multifaceted fashion and strive to not only treat diseases but also provide comprehensive care to the people themselves.

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Being able to test someone's DNA, find out whether they will develop a certain kind of disease, and treat them based on their individual genetic makeup seems like something out of a futuristic science-fiction movie. Yet today, it is surprising that we have the capability to do this relatively easily. Personalized medicine, or precision medicine, is a form of medicine that tailors treatments to a patient's genetic makeup, maximizing the efficiency of treatment and significantly improving patient prognoses. The concept of tailoring treatments to a patient's body originated in the 1960s, but the term itself was first published in 1999.

Before precision medicine, treatments were always targeted toward the "average patient" who was expected to have the most conventional form of any disease and exhibit an expected response. However, very few patients fall under this "average patient" category, as people naturally fight off diseases with different rates of success and respond differently to treatments and drugs. Personalized medicine rejects the obsolete notion that treatments have to be targeted toward the "average patient" and instead embraces the concept that treatments for certain conditions can be specific to a patient's unique genetic makeup.

The science behind personalized medicine lies with the small differences between every human's genome. Modern biology tells us that only 0.9% of the human genome is different between individuals, while the remaining 99.1% is the same. Despite the difference being only a small fraction of our entire genome, this small percentage contains the variation that individualizes us as different people. This 0.9% is primarily comprised of mutations of single nucleotides in genes, called single nucleotide polymorphisms (SNPs). Although these mutations are not usually harmful and do not usually change an individual's physiology in a significant way, they make changes in gene expression that may cause the differences in disease development and drug response in patients. Personalized medicine researchers study these SNPs, and try to extrapolate and quantify the effects they have on gene expression and ultimately physiology. They do this through genome wide association studies (GWAS) and microarray biochips, where they look through the entire genome and try to find SNPs in areas where key transcription factors, drugs, and other molecules bind.[1]

The United States government has played a huge roll in encouraging scientists, physicians, and healthcare enterprises to embrace personalized medicine and integrate it into research and patient care. The Obama administration launched the Precision Medicine Initiative (PMI) as a program that tackles the social, economic, political, and scientific deliverables that will help integrate personalized medicine into the American healthcare infrastructure. Roughly $200 million was awarded to the NIH to facilitate the research that would help make this initiative a reality, with a particular focus on cancer, as $70 million was specially budgeted for the National Cancer Institute (NCI). $10 million was also awarded to the FDA to create secure databases to store patient genome information. The government entrusted the Office of the National Coordinator for Health Information Technology (ONC) to create regulations and standards that would ensure the privacy of patients and security of their health information during its use and exchange for research.[2]

Although personalized medicine is extremely effective in combatting illness, it also poses ethical concerns. This is because some genetic differences that contribute to differential patient prognoses can be a result of demographic characteristics such as race, country of origin, gender, and culture. The widespread acknowledgement of genetic differences that

make one individual or group of people more prone to illness has a risk of evolving into a reason to discriminate against people, especially for insurance companies looking to deny insurance to people with preexisting conditions and other risk factors. As such, it is important to frame the entire endeavor and concept in a very neutral manner.[3] Additionally, storing the records and health data of many patients and interacting with it on a daily basis puts the privacy and security of such information at risk. If databases holding this information were hacked, or if this information were demanded by insurance companies, health data could be used to deny people jobs, insurance, entry into countries, or to blackmail individuals. It is therefore important that a secure system is in place where this information can be safely stored and used, and that stringent regulation exists that bars certain institutions or individuals from accessing such information.[4]

Overall, personalized medicine is a revolutionary advancement in medicine that will improve healthcare immensely in the years to come. Although funding for this initiative was relatively liberal during the past few years, recent changes in the U.S. government may reverse such an attitude toward personalized medicine, as the Trump administration is much more conservative on social and fiscal issues than previous governments. It remains to be seen how this initiative develops throughout the world in the years to come.

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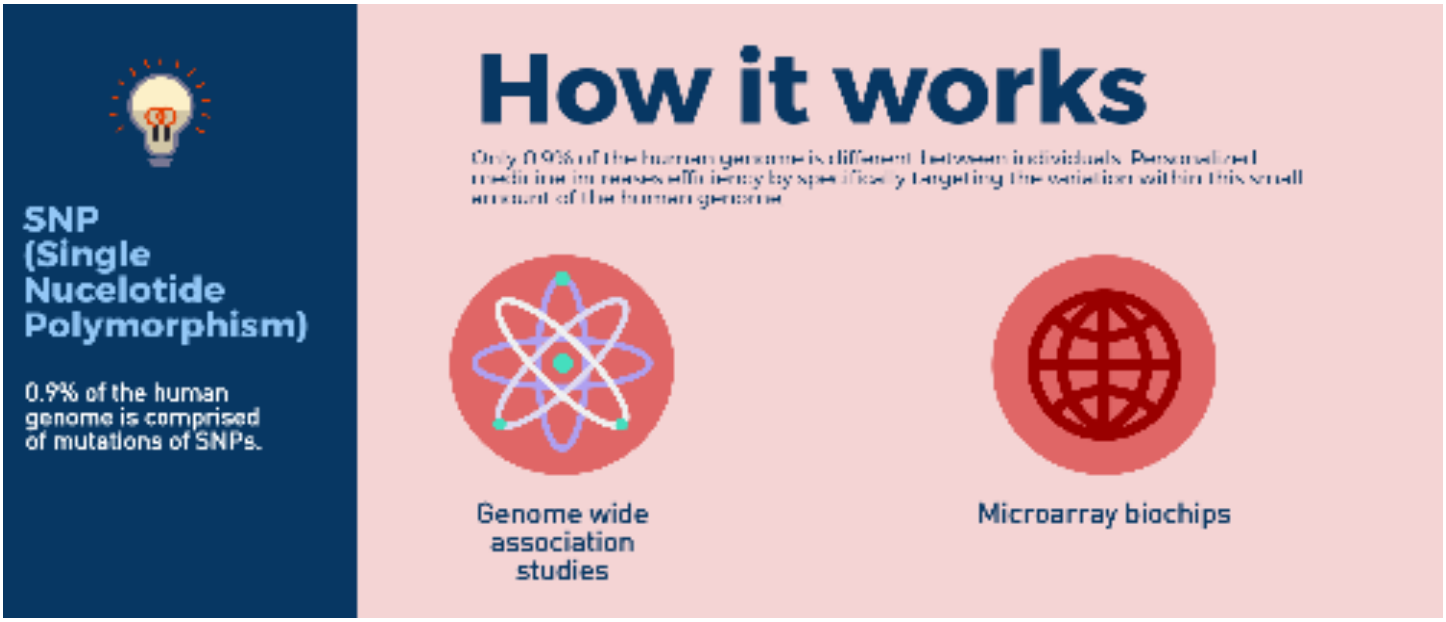

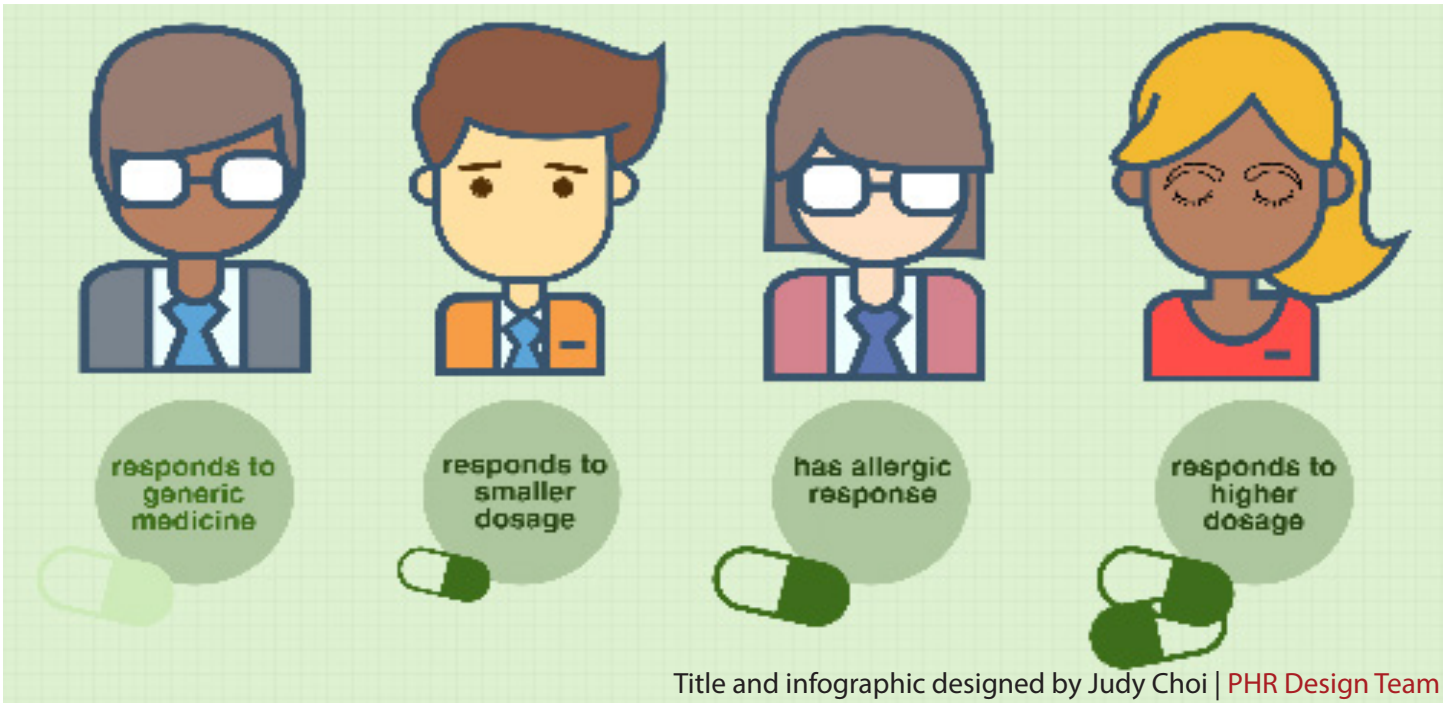

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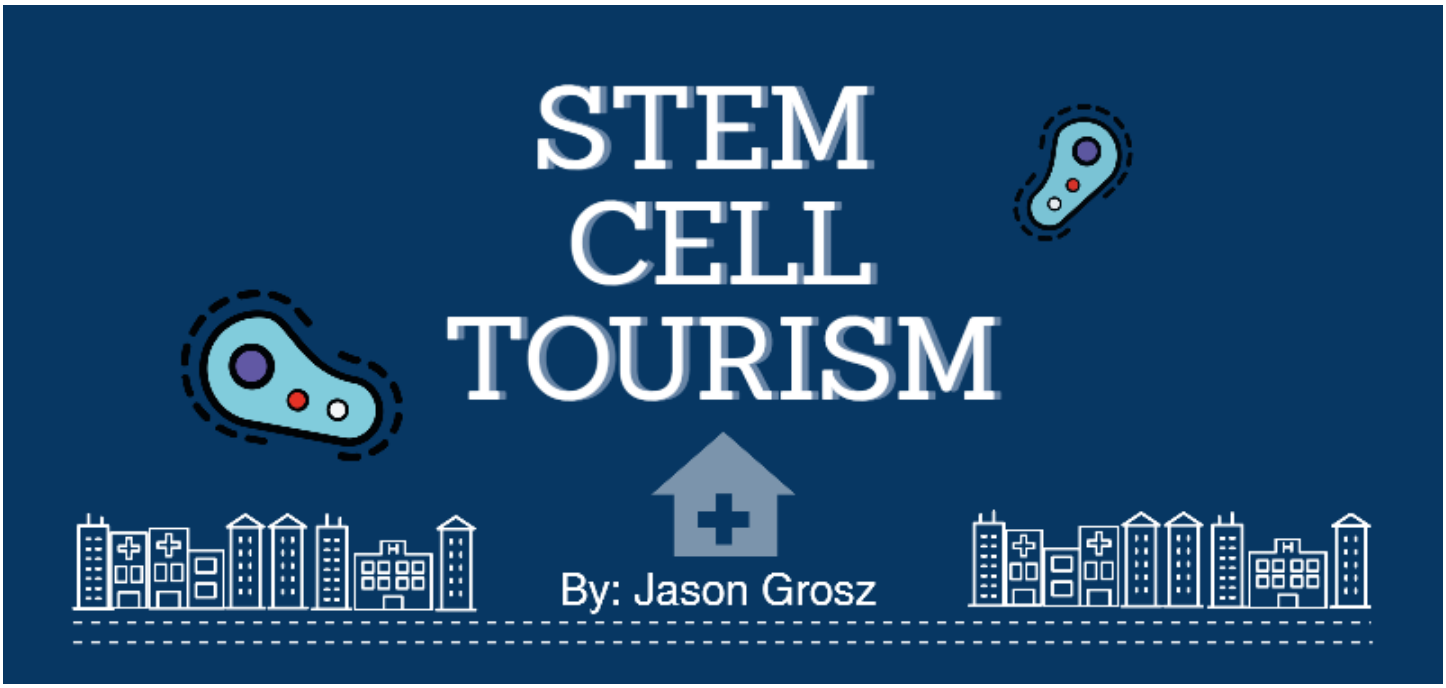


For the past few decades, stem cell research has garnered much attention in the scientific community and the public eye. Stem cells are pluripotent, undifferentiated, and highly proliferative versions of normal cells. Their differentiation can be directed by researchers to form a multitude of mature, fully functional cell types. This gives them the enormous potential to model diseases, perform drug tests, replace damaged tissue, and ultimately generate artificial organs.

Despite the promise of stem cells, medical research and clinical trials are slow processes, and many proposed stem cell therapeutics are not ready for market. Since they proliferate quickly and infinitely, mutations can build up to form carcinogenic oncogenes. This is a significant and dangerous hurdle for any in vivo application of stem cells. As of 2016, the FDA has only approved of one type of stem cell therapy: Hemacord, which is approved for hematopoietic (blood) therapies. [1]

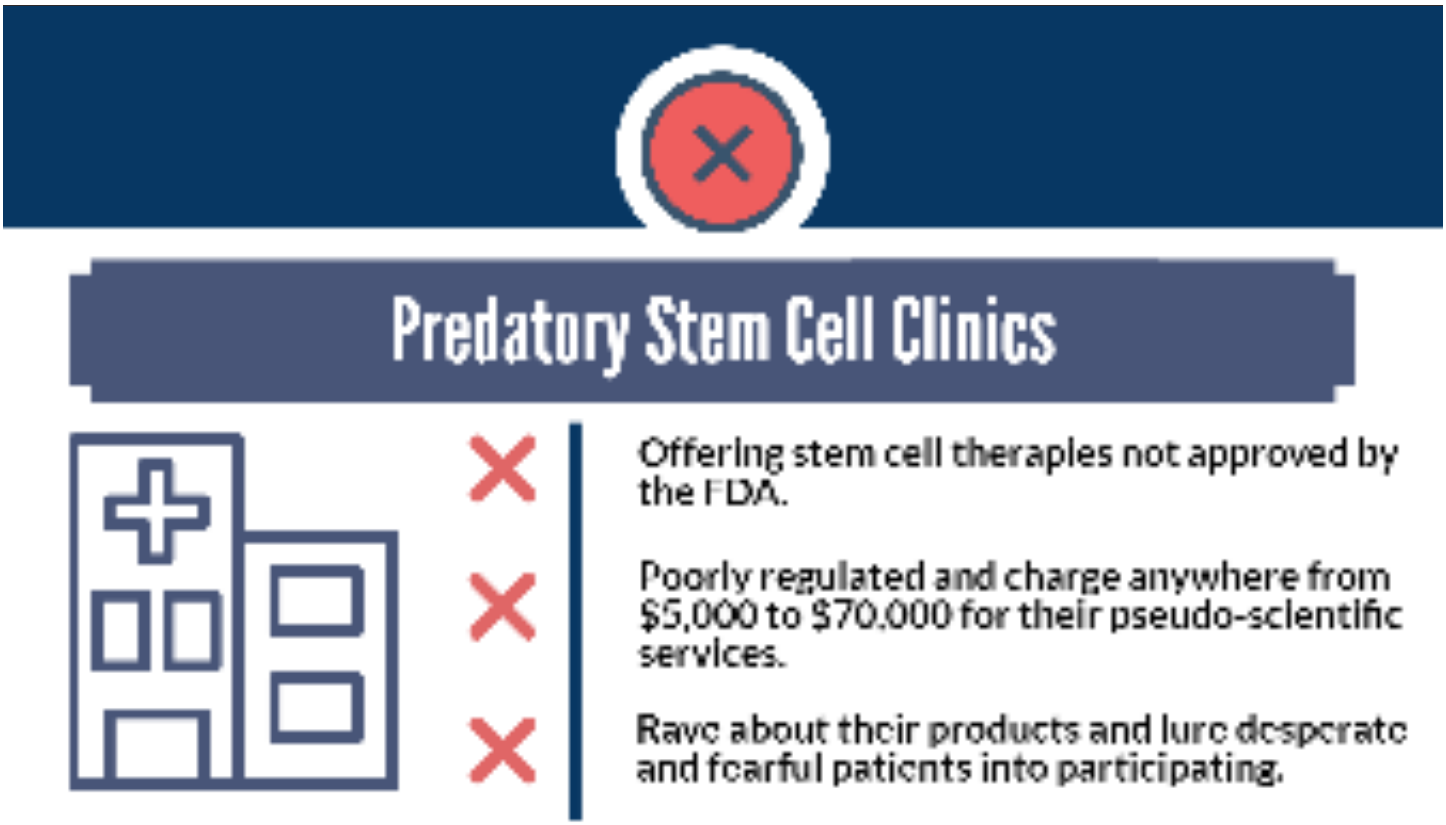
These concerns have not stopped a burgeoning industry of for-profit, predatory stem cell clinics from popping up all across the country and offering stem cell therapies not approved by the FDA. More than 500 of these clinics exist in the United States and are concentrated in population centers with aging demographics, such as Florida. They are poorly regulated and charge anywhere from $5,000 to $70,000 for their pseudo-scientific services. [2] Many clinics employ prominent sports figures, such as former hockey player Gordie Howe, [3] to rave about their products and lure desperate and fearful patients into participating.

Patients who have participated in unapproved stem cell treatments have developed a variety of ailments, such as malignant and benign tumors. In one prominent example, the Boston Globe reported upon a patient who received an unapproved stem cell treatment and developed a paralysis-inducing tumor near his spinal cord. [4]

To market themselves, clinics claim that their treatments can solve a multitude of problems including neurodegenerative disorders, pulmonary disorders, cardiac disorders, spine injuries, and so on. [5] Some clinics advertise their products for cosmetic purposes such as facelifts and breast augmentation. One clinic in Arizona even claims that their therapies will "improve your marriage". However, none of these applications are supported by the FDA or prevailing scientific literature.

According to a report in the journal Cell Stem Cell, many of these clinics provide a variety of different stem cell treatments for the ailments discussed above. The most common treatments incorporate autologous stem cells, or stem cells derived from the patient's own body. Allogeneic treatments, where stem cells are taken from another individual's placenta or amniotic fluid, are less common but still available. In extreme cases, clinics falsely advertise stem cell treatments that do not even involve stem cells. For example, some clinics in the Cell Stem Cell study advertised platelet rich plasma (PRP) procedures as autologous stem cell procedures. In reality, PRP is not a stem cell product. [6]

There are two primary methods by which stem cell clinics can avoid FDA regulation. Clinics providing autologous stem cell treatments claim to qualify under the FDA's definition of "minimal manipulation of human cells, tissues, and cellular and tissue-based products". [7] Treatments in this category undergo less stringent regulation than medical devices and pharmaceuticals. The FDA disagrees with this classification and has sent cease and desist warning letters to various clinics such as the Irvine Stem Cell Treatment Center in California, the Manhattan Regenerative Medicine Medical Group in New York, and the Miami Stem Cell Treatment Center in Florida. [8] However, the vague language of "mini-



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mal manipulation" is a loophole open to interpretation, making regulation challenging. [9]

In addition to exploiting the minimal manipulation loophole, autologous stem cell clinics frequently close and reopen under a new name in a new state. This makes it challenging for the FDA to track clinics. According to Professor Darrell Kotton, Director of Boston University's Center for Regenerative Medicine, it is also hard for the FDA to keep track of clinics that are breaking the law. "Some clinics quote poor science in weak journals and third rate literature, and sometimes it is hard for the FDA to see through that".

Stem cell clinics providing allogeneic stem cell treatments cannot reasonably claim legality under the FDA's "minimal manipulation" clause. Many of these clinics require patients to undergo treatment in Mexico, China, and other countries with more relaxed regulations.[10] Patients who travel abroad for treatments are colloquially referred to as "stem cell tourists". Stem cell tourists often experience some of the worst prognoses including permanent spinal damage, tumors, nervous system complications, meningitis, and other bacterial infections.

In identifying potentially harmful clinics, consumers must be wary. Many clinics advertise themselves as participating in clinical trials and register with ClinicalTrials.gov, which lulls patients into a false sense of security. In reality, ClinialTrials.gov does not distinguish between for-profit clinical trials and not-for-profit clinical trials.[11] For-profit clinical trials are not the traditional academic clinical trials that one typically thinks of; all academic clinical trials are free. Additionally, ClinicalTrials.gov does not independently scrutinize listings or verify any information on their website.

Over the past few years, the FDA has become better at identifying and regulating predatory stem cell clinics. Hundreds of stem cell clinics are beginning to be shut down, but mostly for tangential offenses such as clinic cleanliness.[12] It will only be through more effective legislation and elimination of regulatory loopholes that these clinics will completely disappear.

Although some patients have claimed miraculous results, these are largely unsubstantiated anecdotes and anomalies that have no basis in science. In these cases, observed improvement can likely be attributed to a "very powerful placebo effect", according to Dr. Kotton. The vast majority of available treatments are provided by quack doctors looking to line their pockets at the expense of their patients. In the short term, this insidious industry will continue to flourish because, as Dr. Kotton says, "it's very powerful when somebody has hope and a predatory stem cell clinic preys on that hope."

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How a Changing Structure of Urgent Care Management Has Changed Medicine

By: Sapna Nath

The structure of medical care has changed dramatically over the last decades through hospital buyouts, increasing bureaucratization, and the consolidation of private practice. Within the last decade in particular, private practice has been revolutionized through the growth of urgent care (urgi-care) centers. The first urgent care centers opened during the 1970s and were founded by emergency medical physicians who recognized the need for walk-in clinics that still provided a high standard of quality care to minimize congestion within the healthcare industry.[3] Since then, urgent care centers have now grown into a 14.5-billion-dollar healthcare industry.[4]

Urgent care centers function differently than primary care practices and emergency rooms on three principle fronts. The first is that the urgent care centers traditionally treat patients for very basic and acute medical issues such as for the cold, flu, and minor sprains. While urgent care centers are unable to admit patients overnight for observation, an estimated 13.7 to 27.1% of all emergency department visits could take place at an urgent care center or retail clinic. In 2012, the most common diagnosis in urgent care centers were for upper respiratory conditions, while the most commonly administered procedure was wound repair.[4]

The second principle way urgent care centers distinguish themselves from traditional private practice are their hours of operation and lower costs. 85% of urgent care centers are open seven days a week, with 95% of them closing after midnight. In contrast to the continuously open hospital emergency rooms, urgent care centers offer comparatively shorter waiting times. At urgent care centers, 69% percent of their patients having waiting times of twenty minutes or less,[4] providing a stark difference to acute emergency room treatments where waiting times can range on the order of hours. Furthermore, similar to primary care practices and emergency rooms, urgent care centers offer simple-laboratory testing.[5] As such, urgent care centers have launched a new mode of administering healthcare that is based around care accessibility. Especially for patients dealing with less severe illnesses outside of normal office hours, urgent care centers provide an extremely appealing alternative to long waits in hospital Emergency Rooms.[2]

What makes the quality of care provided by urgent care centers even more important is the public's growing reliance for their healthcare services. Many adolescents and young adults are forsaking seeing their primary care physician for the convenient treatment urgent care centers provide. In fact, post the Affordable Care Act, there are fewer doctors to care for the increasing number of patients, bringing more people to urgent care centers.[4] These urgent care centers provide a much-needed sanctuary for patients who find it difficult to make an appointment with their primary care physician.

Treatment at urgent care centers, however, de-incentivizes patients to see their primary care physician for follow-ups.[1] Thus preventative care suffers, as continual health monitoring is forsaken and patients do not have yearly follow-ups. Additionally, because patients are not guaranteed appointments with the same physicians at urgent care centers, there is a decrease in the standard of care, as the patients' medical records are less consistent.

Despite the benefits urgent care centers provide to decongest an immensely pressurized health system, their rapid growth has led to changes in the primary structure models of urgent care centers. The contributions of private equity firms to urgent care centers has facilitated their immense growth. This has resulted in the enfranchisement and buyout of many urgent care centers.[2] For example in 2010, Humana acquired Concentra, which provides about 300 urgent care centers and other services in 42 states, for approximately

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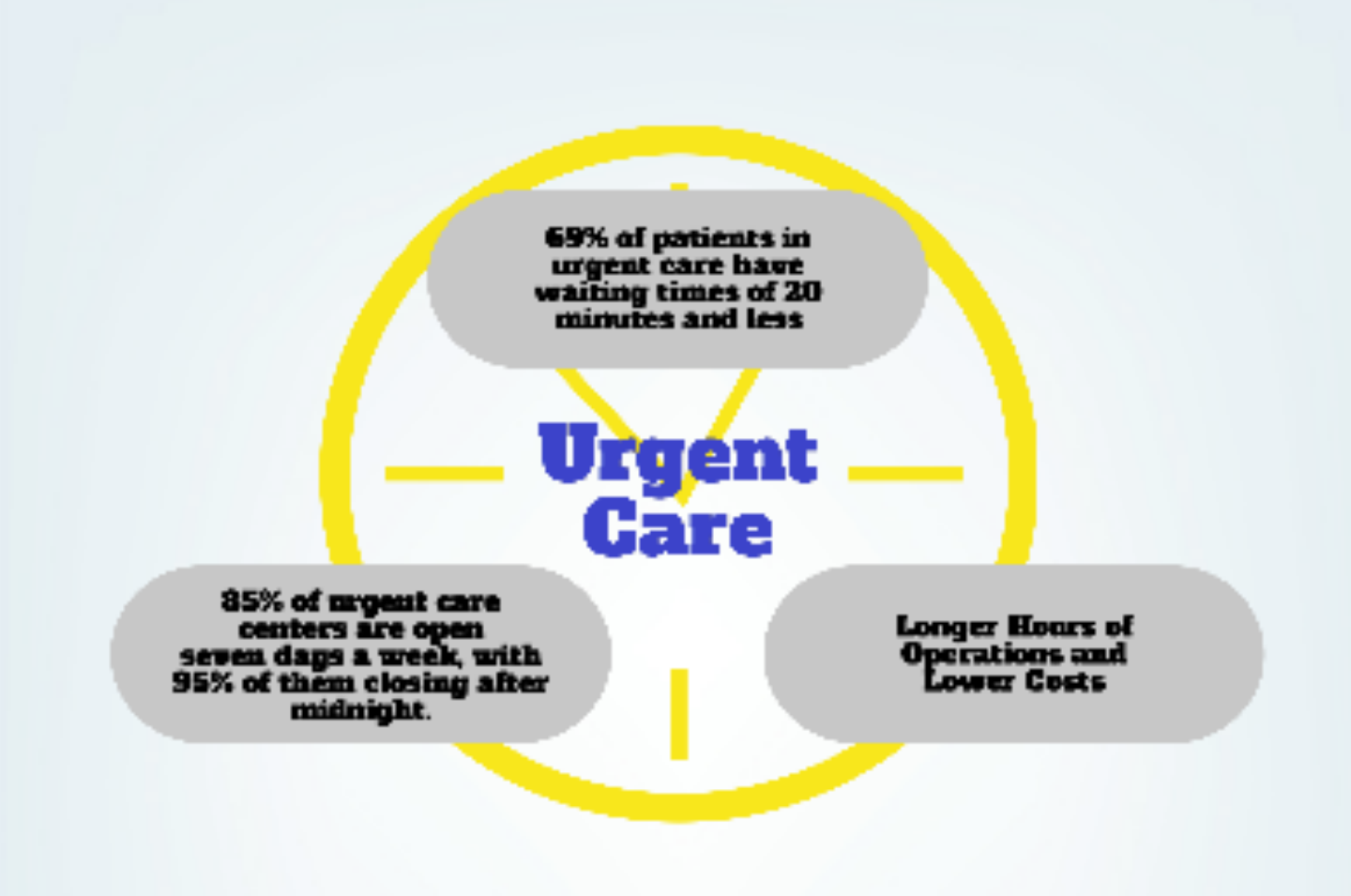
$800 million in cash.[3] This changing structure has led to the development of serious gaps in preventative patient care, raising questions if there is an associated drop-off in quality of healthcare. This question is even more important considering the role urgent care centers have as a replacement for primary care.

Because of this business-modeled structure, there is serious incentive to transform urgent care centers into businesses aimed at reselling centers for greater profit. And this is in fact the case. One private equity partner who participated in the development of WellPoint-LLR Partners-Physicians Immediate Care venture states, 'our goal is to significantly grow the business over a period of time, and then we do seek to exit either through selling the business to another, larger business or taking it public."[3] This transformation from physician backed urgent care centers to those backed by larger private e-quity firms has changed the goal of these urgent centers, incentivizing physicians and physician assistants to treat as many patients as possible, while potentially forfeiting quality of care.



A byproduct of this restructuring is a strain on physician and patient interaction. Many urgent care centers as a result, have physician assistants, overseen by primary care specialists, see patients. Because physician assistants do not have the same knowledge as physicians, they often insist on more medical testing, again increasing profits for the center, while simultaneously increasing the cost of care for the patient. To further improve their margins, urgent care centers can cherry-pick patients as most of these centers do not accept Medicaid and thus can turn away uninsured patients upfront. In contrast, hospitals and ERs are legally obligated to treat everyone.[4] Thus, while many procedures offered by urgent care centers are at a lower upfront cost, we need to consider the hidden costs.

Thus while urgent care centers have provided an easier access to healthcare, significant gaps lie in the quality of preventative care. What we see now in medicine is the result of a large cultural shift in medicine. Instead of a model based in greed and margins, a system fostering a mutually constructive relationship must be implemented where urgent care and primary care function jointly. To truly derive the benefits of the urgent care system, a there must first be a truly collaborative relationship with the medical community.

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the role of Patient Satisfaction in Healthcare Outcomes

by Dominic Gregorio

There is an assault, both implicit and explicit, on individual autonomy in the healthcare field. It is an urgency to ban many forms of consensual health-related exchanges—from purchasing certain types of health coverage to trying new drugs and experimental treatments—as well as a series of unfounded claims: that patients' desires are not so important as arbitrary statistical quality measures,[1] that patients are incompetent to make spending decisions when it comes to their own health care dollars,[2] and even that insurance customers do not deserve to consent to purchase whatever insurance policies they choose.[3]

The assault comes from many directions. It comes from government-force advocates such as Paul Krugman, who declares that "choices must be made" in health care spending but that "consumer choice...wouldn't work"[4] (as stated by Mr. Krugman in a 2011 New York Times op-ed where he admitted that health costs are out of control but argued that advisory boards, not patients, ought to be the ultimate arbiters on Medicare spending decisions). It comes from a small minority of medical practitioners who believe that hospitals competing for consumers on the basis of price and quality is sickening, because it commodifies patients' desires.[5] It comes, unfortunately, from University of Pennsylvania professors like Ezekiel Emanuel, who kindly remind us that "in health care, choice is overrated."[6] It comes even from some members of Wharton's prestigious Health Care Management department, who teach in classrooms that patient satisfaction is not a measure of the quality of health care (e.g. HCMG 212).

The idea that the set of competent patients with physician counsel is made up of fundamentally incompetent decision-makers is an incoherent one. It is fallacious, unfounded in empirical data; it is authoritarian, calling into question the validity of individual consent; and, most ironically of all, it undermines the integrity of the very patient-caretaker relationship whose soundness demonstrably leads to superior health outcomes. To the extent that this claim is utterly false, truth-seekers in industry and academia must mitigate the fallacy in favor of sound ethics and superior health outcomes.

The first argument for individual health autonomy is almost a tautology. Health care exists to impart satisfaction on patients. Usually patients consider longer lives satisfying, which is a good reason for health economists to care about outcome measures such as mortality rates. However, patients do not always seek longevity. Some also want more pleasing lifestyles, which health economists attempt to quantify as QALYs (quality-adjusted life years).[7] Others are most satisfied by the decision to die comfortably without life support, and the right to consent selectively to treatment is reinforced both by common sense and by the overwhelming literature on medical ethics.[8] Even Dr. Emanuel concedes that he will exercise his right to refuse life-prolonging treatment after his seventy-fifth birthday, because that is the decision which would most satisfy him.[9] Power players may respond that patients can have conflicting feelings about medical care, and therefore valuing their input will interrupt treatment goals. However, empirical evidence suggests that just the opposite is true.

As it turns out, seeking patient satisfaction is associated with improved patient health, for several clear reasons. Firstly, the desire to feel well drives patients to seek care. This may seem like common sense, but multiple studies cited by the NIH back up the idea that patients expect to receive care that makes them feel well when they visit the doctor.[10] Next, patients who enjoy their care are more cooperative with physician advice and more likely to adhere to treatment regimens correctly. Again, the seemingly obvious is confirmed: several investigators from Wake Forest found a positive relationship between patients' satisfaction and treatment cooperation, especially when it came to taking their medicine.[11] Finally, patients are incentivized to visit their doctors on a regular basis in pursuit of the enjoyable experience and the enjoyable

outcome. The result is that patients who are pleased twice—by pleasant office visits as well as better health—actually conform better to the quality measures so worshipped by anti-autonomy advocates. The efficacy of wielding the contentedness of patients to improve their health has been confirmed by a wider literature review published by the NIH.[12]

Fortunately for health care consumers, those in power who argue for less patient autonomy are not inherently evil. There exists substantial agreement across leaders in the field: Krugman goes on in his Times editorial to voice his support for medical ethics and the invaluable patient-provider relationship;[13] Dr. Emanuel supports the right of patients to select those treatments to which they consent;[14] and all self-respecting healthcare management instructors profess their preference for healthy patients. It is simply that when we confront the evidence, it becomes apparent that seeking those noble ideals requires us to value the patient's happiness and the patient's ultimate right to make choices in the pursuit thereof.

The rebuttal posed by Kruger, Emanuel, and others goes like this. Consumers might be competent to make informed decisions in other markets, but health care is different: the information is harder to understand, and making the "wrong" decisions could negatively affect health. However, the fact is that in the medical field we have a standard for competence. We consider conscious, alert, oriented adults who are not incapacitated by intoxication or mental disorder to be competent health decision-makers. It does not mean that we leave them uninformed. It does not mean that we do not argue in favor of life-lengthening decisions. But it does mean that we respect the patient's ultimate choice whether to give or withhold consent for any variety of health-related interventions. This standard ought to be evenly applied so as to include a respect for the patient's right to choose health financing plans according to preference. It is ridiculous to say that a patient has the right to choose between life and death but not between health plans. Yes, patients have differing levels of expertise and should receive the appropriate level of informative guidance from their physicians and health organizations; but no, they should not all be banned from buying a health plan whose deductible is one dollar higher than Ezekiel Emanuel's favorite type of plan. Medical ethics mandates that future healthcare reform respect competent patients' right to consent to more diverse forms of health coverage. It also mandates improving outcomes by appreciating the role that patients' contentedness plays in producing them. The failure to comply with these ethical mandates betrays a form of intellectually crippling superiority complex.

Unfortunately for the healthcare intelligentsia, superiority complexes don't save lives. Instead, quality medical care with patient and family cooperation does. All logic and evidence point to the fundamental truth: ideal

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care is only achievable when policy frameworks respect the sanctity of patients' rights to consent to care which satisfies them.

Select, pseudo-omniscient academics may rail against patient autonomy to their hearts' desires. But until and unless they manage to impose a total, Orwellian control on health care decisions, individual patients will continue to make the predominant swath of decisions affecting their health outcomes. In light of this immutable fact, it is imperative that all who seek to maximize patient outcome recognize the pivotal role that patient satisfaction can and must play in reaching that noble goal.

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The Cost of a Sugar-Driven Society

BY: Sophia Busacca

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"Do you want a drink for just a dollar extra to go with your meal?"

Sweet teas and fizzy sodas; deceivingly healthy sports drinks and juices; coffee. For many, these beverages are a perfect complement to any meal. So, most times, people accept that offer without a second thought. We are what we eat. But we are also what we drink. And oftentimes, what we drink has more hidden sugar than we might think.

Sugar is incredibly addictive, cheap, and easy to obtain since it is in just about any item in convenience and grocery stores. Following in Berkeley, California's footsteps, in 2016 Philadelphia enacted the "Soda Tax." I remember when it first became public knowledge that Philadelphia was going to try and pass a "Soda Tax." The first thing I immediately thought was that if people really want their soda, they will buy it. Either the price will not affect consumption, or they can drive over the Ben Franklin Bridge to New Jersey and purchase their beverage elsewhere.[1]

Sugar is deadly. It is a drug. It acts very similar to the way cocaine does on our brain. When researchers examined sugar on the brain, they found it caused the same parts of the brain that cocaine affects, to be affected by sugar as well.[2] In the journal Nature, a 2012 article described sugar as a toxic substance that should be regulated like tobacco and alcohol because of its' affects on the brain. Too much sugar both in the form of natural sucrose and high-fructose corn syrup not only makes us fat, but also will impair our brain function. [3]

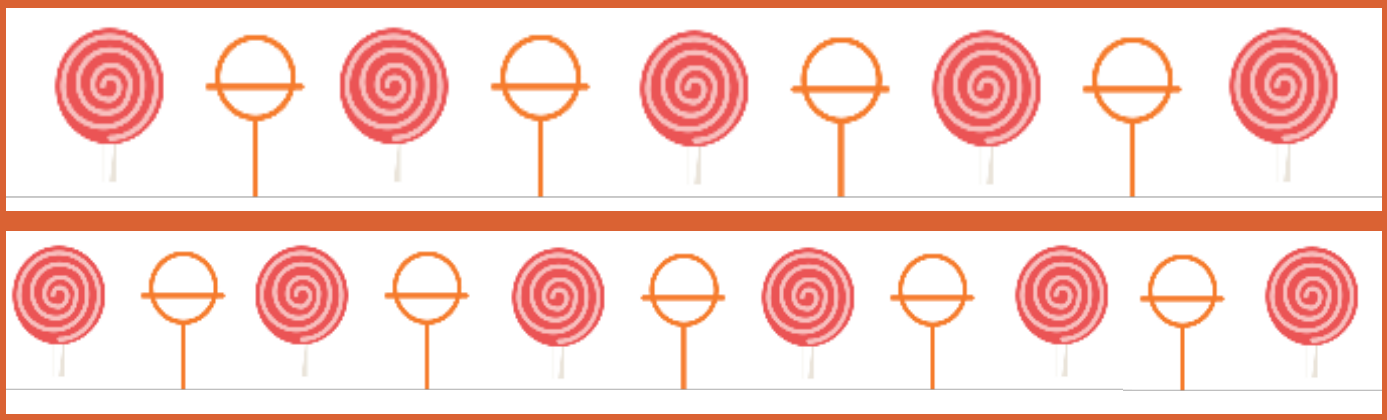
Dr. Ludwig, on his series on sugar out of UC TV, explains that sugar causes obesity and obesity causes a variety of metabolic and physiologic consequences. The high intake of refined carbohydrates such as sugar elevates the triglyceride levels and blood pressure (BP). Because of the elevation of triglyceride levels and BP it lowers the good fats. It will lower high-density lipoprotein cholesterol levels that are good for our body. The combination of lowering high fats and increasing low fats puts individuals at risk for coronary heart disease.[4]

One of the most prominent and most expensive causes of obesity is diabetes. Sugary drinks have a high glycemic load and this causes insulin resistance and effect pancreatic islet cells, which are responsible for the release of glucagon and insulin.[5]

The cigarette and smoking industry has to spend money on advertisements outlining the consequences of smoking. It is a public health concern. But what about children's juice, the soda at restaurants, and sweetened drinks? I question how society is relating these to happiness and not a low quality of life.

The beverage industry does not want its' consumers to know that they are gulping drinks that are directly related to obesity, diabetes, and heart disease.[6]

Because the beverage industry is global, advertisements and convenience have caused consumption rates to increase around the globe.[6] In a Health Policy Report published by the New England Journal of Medicine, meta-analytical, longitudinal, and cross-sectional studies found a positive correlation between body weight and the intake of



sugary drinks.[6]

Market Failures exist around less-than-optimal production and consumption. There is a plethora of health related consequences because of the consumption of sugary drinks. When an individual choses to drink a sugary beverage, the short-term gratification takes precedence over future consequences.[6] The health related costs to the consumption of sugary drinks are incredibly high. The costs for obesity and weight alone are 14.7 billion or 9.1% of the United States' healthcare expenditures. Medicare and Medicaid funds most of obesity related healthcare costs. This in turn is the crux of market-failure.

By looking at price elasticity of demand we can see that taxing a sugary beverage can cut consumption and through advertising and campaigns hopefully begin to educate the importance of choosing healthier beverages.

Price elasticity for soft drinks falls in the range -0.8 to -1.0 meaning that for every 10% increase in prices there is an 8% decrease in consumption. By taxing sugar-sweetened beverages with an excise tax (a tax based on units such as volume or weight) will provide an incentive to reduce the amount of sugar in these beverages. An excise tax will potentially lead to a minimum reduction of 10% in calorie consumption. This benefit will be great to consumers who regularly drink sweetened beverages since often times these consumers are price-sensitive and overweight.[6]

Not only would the tax be beneficial to the health of consumers but the money generated from the tax can be used to fund childhood nutrition programs, obesity-prevention programs, or healthcare for the uninsured. Just by having national tax of 1 cent per ounce would raise $14.9 billion in the first year alone. Philadelphia is investing the money from the Soda Tax to its' public schools.[6]

While Philadelphia and Berkeley have faced many objections to the tax, they are leading an effort to "Make America Healthy Again." Corporations are dominating the sugar industry and corrupting peoples' health. They are advertising instant gratification, and not taking responsibility for the issues their drinks are causing. They are lobbying Congress for their drinks to pass through the Food and Drug Administration and covering up the secrets about the toxic effects too much sugar can have on the body. Our escalating healthcare costs are accompanied by the burden of diseases that are related to poor diet. We need a solution. There are two solutions. One is to fight corporate America and reduce the sugar in drinks, and another is to tax the drinks that will lead to future health problems and bills.

Let's teach our parents and youth to put their sugary soda, juice, or tea down and think about their future health. Then we need to incentive eating healthy and choosing quality to feed our young people in the schools. We need everyone to have access to healthcare, and that starts with solving the issue of food deserts and America's sugary drink addiction.

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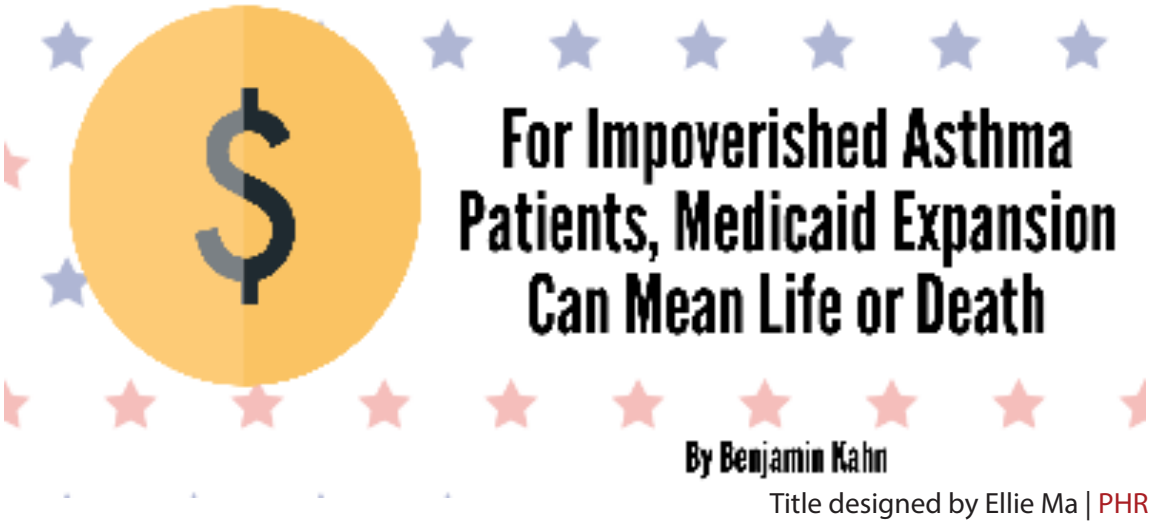

For Impoverished Asthma Patients, Medicaid Expansion Can Mean Life or Death

By Benjamin Kahn

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In June of 2016, House Speaker Paul Ryan unveiled the Republican plan to replace the Affordable Care Act (ACA) to the American Enterprise Institute. Speaking on a panel at the event was future US Secretary of Health and Human Services Tom Price. "They believe the government ought to be in control of health care," Price explained, regarding the Affordable Care Act and his vision for US healthcare. "We believe that patients and doctors should be in control of health care," Price continued. "People have coverage, but they don't have care." Price neglects to mention the 28 million Americans who lack health insurance. Uninsured patients face distinct challenges; among these, untreated asthma is of particular concern due to its prevalence in poor populations.

The US Center for Disease Control and Prevention (CDC) states that asthma prevalence and mortality have been rising for the last 15 years.[1] The effects of asthma are a major expense for Medicaid, to the tune of $56 billion dollars a year. These costs, which include treatment, physician visits, Emergency Room visits and hospitalization, place a huge financial burden on American taxpayers.[2] Treatment of asthma with controller and rescue medications prevents asthma attacks, deaths due to asthma, and costly trips to the ER. So access to these medications is both a bargain for the taxpayer, and a matter of life or death for asthmatics.

The Affordable Care Act, passed by Congress six years ago, has definitively achieved its goal of expanding health insurance coverage to poor populations. The CDC reports that since the enactment of the ACA in 2010, the uninsured population of the US has decreased from 16% to 8.9%.[3] The Congressional Budget Office (CBO) finds that 12 million Americans have obtained health insurance through exchanges made through the ACA, and that an additional 11 million people were made eligible for Medicaid under the ACA.[4]

Prior to the ACA, Medicaid was offered in most states to individuals whose income lay below the Federal Poverty Level (FPL).[5] This cutoff for Medicaid eligibility left major gaps in coverage, because there are millions of people who make more than the FPL ($11,800) but still cannot afford to purchase health insurance. By offering billions of dollars in federal subsidies for states to expand Medicaid eligibility to 138% of the FPL, the ACA has facilitated coverage for millions of individuals who otherwise would not be able to afford it. This is critically important for asthmatics, as poverty is a major determinant of the disease, and access to medication is necessary to prevent deadly attacks.

The benefit of Medicaid expansion to low-income citizens is evident. States that have chosen to expand their Medicaid programs under the ACA boast significant increases in Medicaid enrollment and reductions of uninsured rates.[6] Medicaid expansion reduces coverage disparities and increases access to care and utilization of health care services among low-income populations.[7, 8, 9]

As citizens of these United States it is important for us to understand the motivations that influence policy decisions of this magnitude.

Now more than ever, it is our duty to scrutinize the actions of our representatives, and ensure that the needs of our most vulnerable citizens are met. Neglecting this responsibility will allow our country's weakest to fall victim to the chasm of uncertainty between 'repeal' and 'replace'.

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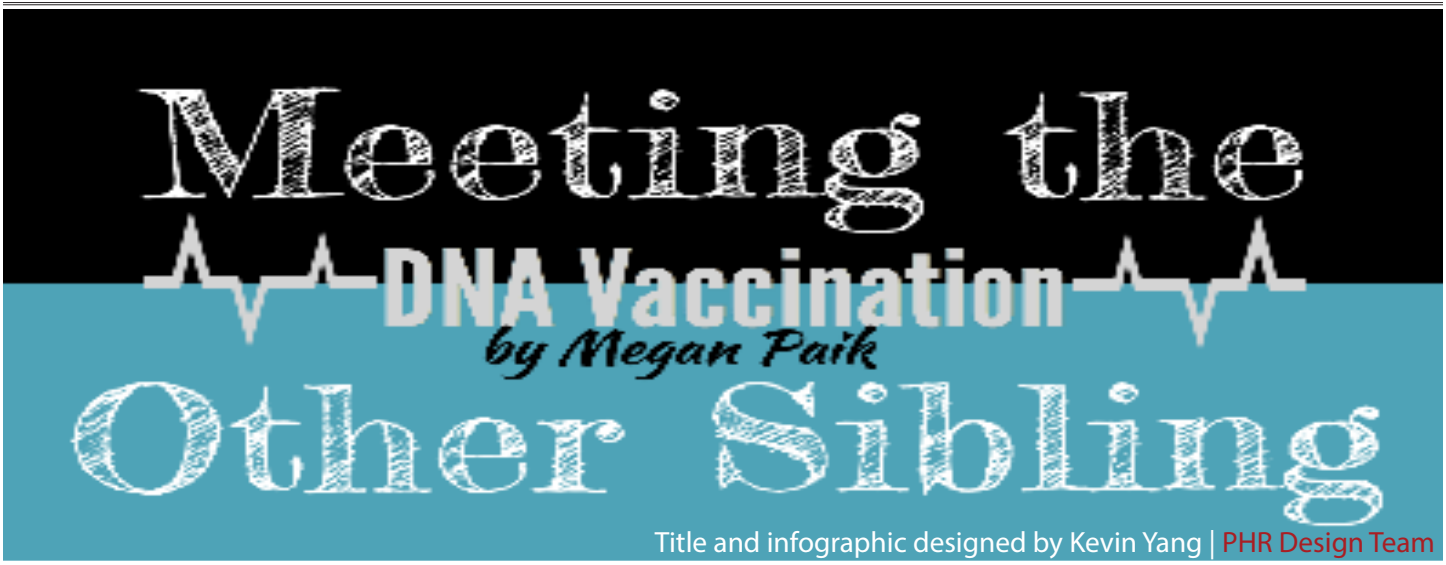
Meeting the Other Sibling

DNA Vaccination

by Megan Paik



Title and infographic designed by Kevin Yang | PHR Design Team

DNA vaccination is a relatively lesser-known, novel alternative that uses the injection of genetically engineered DNA to generate an immune response. Vaccinations provide immunity to a disease or pathogen by training the host's immune system to produce specific antibodies for an antigen, or a protein that is foreign to the body. Traditional vaccines are composed of weakened or dead pathogens and generate an immune response when the host's immune system recognizes the antigen on the pathogen.[1] In contrast, DNA vaccination encodes the gene of the antigenic protein onto a plasmid DNA. The genetically engineered plasmid is then injected into the host. The cells of the host uptake the DNA, and begin producing the antigenic protein, thus stimulating an immune response without the need of the weakened pathogen itself.

DNA vaccines are just as effective as traditional vaccines, both in the magnitude of the immune response and the duration of the immunity acquired by the host.[2] In addition, the plasmid DNA used in vaccination can be specifically genetically engineered to maximize the effectiveness of the vaccine against a disease.

For instance, the difficulty of developing a vaccine for HIV stems from the rapidly-mutating nature of the virus. The tendency of the HIV virus to accumulate numerous mutations in a short period renders a traditional vaccine ineffective. Even if a traditional vaccine succeeds in inoculating the host against one form of HIV, it will soon lose effectiveness as the virus evolves to a form that is unrecognizable to the immune system. However, it is possible to develop a DNA vaccine that will be more effective than the traditional. Despite the mutations

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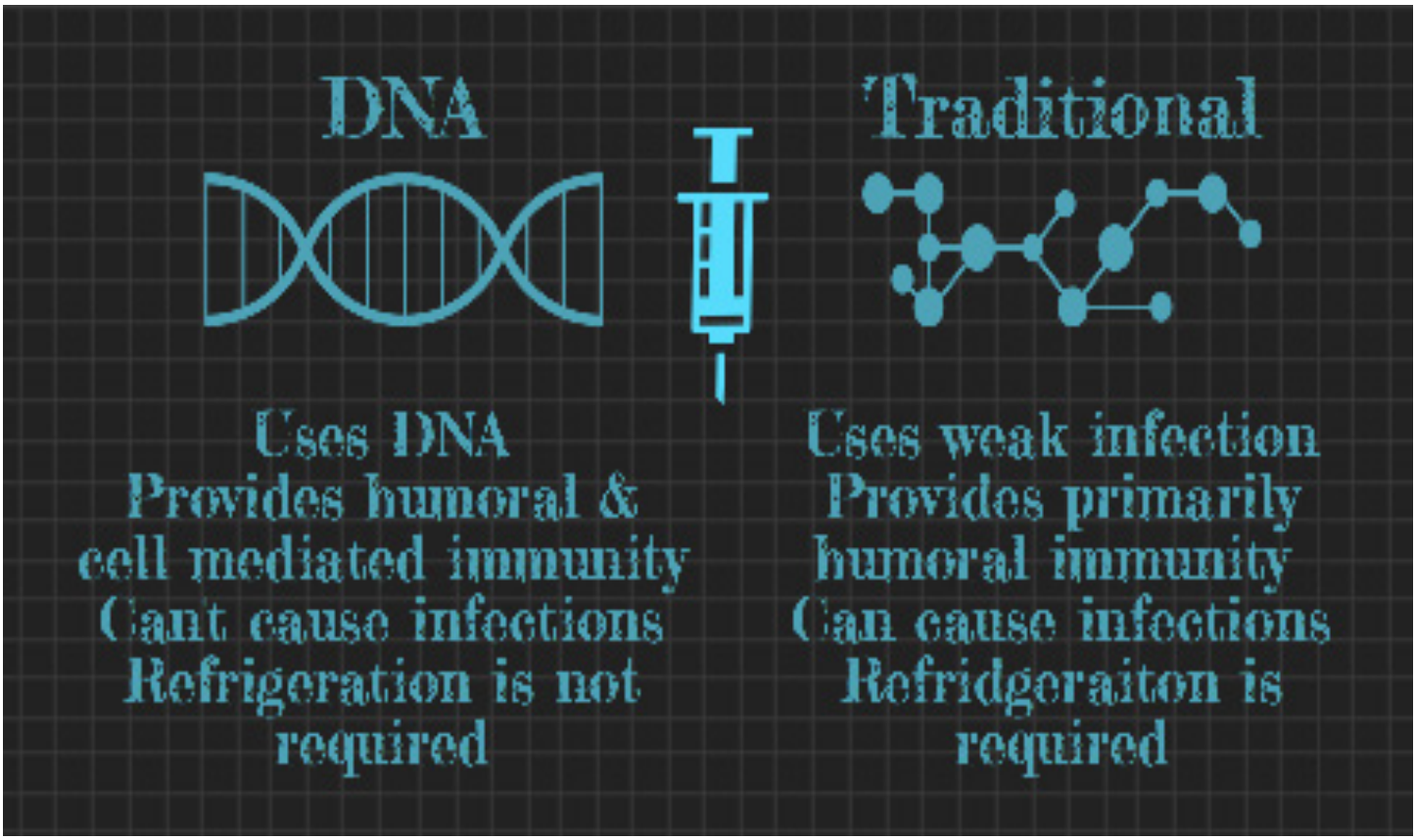
The novel formulation of DNA vaccines provides several advantages over the traditional vaccine, including superior safety, effectiveness, and versatility. Generally, vaccines currently in the market are safe; however, there is still a risk of the weakened pathogen returning to virulence or causing a secondary infection. This is particularly concerning for immunocompromised individuals. DNA vaccines do not use microorganisms and carry no potential to cause an infection.

While they avoid the risk of a malignant reversion, that the HIV virus accrues, the virus retains some of its genome throughout its evolution. If a plasmid DNA is encoded with the part of the genome that is consistent in the different forms of HIV, the immune system can be trained to recognize multiple forms of HIV that share the common gene.[3]

DNA vaccinations are also impressively versatile in their use, specifically in their therapeutic as well as prophylactic applications. Notably, DNA vaccines can be used as a form of immunotherapy for cancer.[4] Instead of



encoding a foreign antigen on a plasmid, it is possible to encode a protein that is almost exclusively found in tumor cells. When vaccinated with such a plasmid, the host's immune system recognizes the tumor cells as foreign, and attacks the tumor cells, effectively curtailing tumor growth and even regressing cancer development in cancer patients.

There are several concerns regarding the use of DNA vaccinations in humans. The main concerns raised about DNA vaccination are unintended immune responses against DNA and the possibility of genomic integration.[5] Clinical studies involving various DNA vaccines have not found evidence of a reactive immune response to the foreign DNA. In the case that anti-DNA antibodies were found, they disappeared after a short period of time and were completely harmless.[6] Extensive studies have been conducted on genomic integration of DNA vaccines. Variables such as delivery methods and target cells were manipulated, and the results clearly pointed towards an extremely low risk of genomic integration.[7]

The recent success of human clinical trials in DNA vaccines for Ebola and HIV paints an optimistic picture for their future application. The National Institute of Health has already proposed a DNA vaccine for Zika, which is currently in clinical trial. It is easy to see why the NIH is interested in this novel platform; DNA vaccines are quicker, easier, and cheaper to produce since there is no need to culture microorganisms. DNA vaccines do not need to be refrigerated during transport, reducing the cost and difficulty of transport. In a broader sense, their lower cost and ease of distribution can serve as crucial factors in increasing access to vaccinations in developing countries. DNA vaccines have the potential to transform the preventative healthcare landscape as an eventual replacement for the majority of traditional vaccines. As such, more funding should be geared into the development of DNA vaccines for human use.

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