

Health Innovation Policy for the People: Undercutting profit motive for better outcomes

For at least the last 25 years, Rhode Island has relied on the medical-industrial complex to serve as an economic engine.

The quest for patentable, scalable cures for the diseases of industrialism has taken up a huge amount of the energy and resources devoted to economic development in RI.

There are deep-seated problems with this strategy, the resultant neglect of public health measures, and the role this innovation-based economy plays in making the cost of healthcare astronomical - as well as its role in the gentrification of our communities and the increase in homelessness that follows from this strategy.

What may be among the biggest indictments against centering attention on the patentable medical-industrial complex is that, despite the miracle cures and information that flows from this system, life expectancy in the United States has increased much more over the last 100 years due to the provisioning of clean water and sewage treatment than from all of the miracle cures for industrial diseases.

But, of course, no one gets traction telling the folks focused on innovation and economic development that public health measures do more good than their innovations and that measures to reduce the harms of industrialism work better than cures after the fact.

What profit is there in the old idea that an ounce of prevention is worth a pound of cure? It has been a lonely and frustrating fight for an outsider, but recently something happened that gives me a bit of hope.

I read "Health Policy Innovation for the People," by Dr. Shobita Parthasarathy, PhD, of the University of Michigan Gerald R. Ford School of Public Policy, where she is director of the Science, Technology and Public Policy Program.

By the time I had finished the introduction, I realized this was one of the most important articles I had ever read on the medical-industrial complex, and I started sending it out to everyone I know who works on these issues.

Dr. Parthasarathy reported on many of the problematic aspects of the innovation system, including the U.S. Patent and Trademark Office and the entire system built up around patents, the flow of research dollars, the panels of [mostly] old white men and representatives of drug companies deciding what research is acceptable, the monopoly basis of the big research universities, the disdain for the research on women's health and public health measures, and how the system appears to funnel money to keep the big players happy.

The National Institutes of Health spends 500 times as much money on genetic research as it does on the

effects of structural racism on health, despite the vast disparity in lifespan between white people and people of color in the US.

I cannot really do justice to the article in a synopsis, so I strongly recommend you read the 20 pages, but let me offer up a few examples of how the current patent-protected system has really failed our communities, especially communities of color, and the public's health.

An egregious example

One of the most egregious examples of the current system floundering is the pulse oximeter, a device that clamps onto the end of a finger and measures blood oxygen levels. First produced by Hewlett Packard, the device is a critical tool in the struggle with COVID, as low blood oxygen levels serve as a definitive sign that more care is needed.

It turns out the original pulse oximeters did not read properly on dark-colored skin, something that Hewlett-Packard eventually figured out and rectified. But the current manufacturer is allegedly producing pulse oximeters with the original flaw and apparently shows no signs of rectifying this problem.

As a direct result of this flaw, many African Americans and others with dark skin did not receive prompt treatment for COVID-19 - and may have died in disproportionate numbers from the disease.

Thousands of people who could have received early intervention and been saved were not, allegedly due to protections by the patent system. The US Food and Drug Administration apparently considered this type of racial bias to be outside of what it could regulate.

In breast cancer research and treatments

The focus on patentable and scalable treatments instead of public health has also shown up in breast cancer research and treatments. Here is a rather lengthy quote from the article by Dr. Parthasarathy. Read it and weep:

• “U.S. biotechnology company Myriad Genetics announced that it had identified two genes linked to these cancers, BRCA1 and BRCA2, and then applied for U.S. and European patents and began offering tests [Parthasarathy, 2007].

Citing these pending patent rights, Myriad then systematically shut down all other providers in the United States and tried to do the same in Europe. It offered its own “gold standard” test to U.S. consumers, which sequenced the DNA of both genes for approximately \$2,500 and provided customers with information about whether they had mutations that might cause disease.

But European scientists and public health officials challenged the company's proprietary position and continued to conduct research and offer BRCA testing through their health systems.

Soon afterward, French researchers announced that they had found a major flaw in Myriad's approach: it missed large deletions and rearrangements in the genes that increase susceptibility to disease. [Myriad Genetics had halted similar research in the United States.]”

Upbraided and cajoled

The NIH had to be severely upbraided and cajoled to put women and breast cancer patients onto the panels that made recommendations as to what research to fund, and while it eventually created a program to fund research into the environmental issues around breast cancer, it has since shut down that program.

Providence has a major problem with asthma. South Providence neighborhoods have some of the highest rates in the country. The patent system has meant that many lower-income people may have no way to afford inhalers, and, of course, most of the research spending is on patentable medicines rather than the environmental triggers for asthma.

An ounce of prevention is worth a pound of cure, but the profit seems to be the motivational factor, despite the massive societal costs of asthma.

Here again, I offer up a couple of quotes from Dr. Parthasarathy's article, because I could not explain it any better:

- ***The story of asthma, a disease that disproportionately affects Black children, is similar.*** [Alexander and Currie, 2017] *In recent years, the cost of albuterol inhalers, which help to control the disease, have also increased considerably due to patent-based monopolies.*

Albuterol has been available as a generic tablet for use in inhalers for decades, but in the 2010s, the tablet was altered slightly after federal regulators required the redesign of inhalers so that they did not emit environmentally dangerous chlorofluorocarbons.

The inhaler and tablets were re-patented. Likely as a result, the market price for albuterol tablets increased over 4,000 percent and triggered a decline in use, presumably due to insurer questions and limits and uninsured patients simply unable to afford it. [Kenner, 2018; Rosenthal, 2013]

- ***“Let's consider again the example of asthma. Its cause is unclear and there is no cure, but many of its triggers are external and specifically environmental, including air pollution, chemical fumes, and dust. It is also strongly associated with poverty.*** [Kravitz-Wirtz et al., 2018]

More and more people are being diagnosed with the disease, but its prevalence is increasing much more rapidly among historically disadvantaged communities of color.

These communities are also likely to experience worse disease outcomes, including hospitalization and death.

In response, governments have increased research funding, but this work has focused primarily on genetic and biological mechanisms rather than on how to transform environmental and socioeconomic conditions necessary to prevent and mitigate disease. [Whitmarsh, 2008]

This approach fits with both the dominant concerns and approaches of scientists in this field as well as the private sector.

How to turn the system around

Parthasarathy then goes on to offer up a number of recommendations as to how best to turn this system around. These include having community members as experts on the panels determining what research should be funded, and making sure that the research money is spread around better. [Harvard, for instance, receives more funding than all of the Historically Black Colleges and Universities put together.]

And, by focusing much more attention and research on social and environmental determinants of health. Parthasarathy goes on to ask for serious reform of the patent system, which seems to be focused on profits rather than health.

Giving voice to my concerns

I have long voiced my concerns with a medical-industrial complex that delivers the most expensive [by far] healthcare in the world, but that ranks no better than 37th in the delivery of healthcare, systematically excludes vast swathes of the population from the latest advances and ignores the environmental hazards in the community because it would mean taking on powerful economic and political interests.

Dr. Parthasarathy has done us all a service by exposing it so clearly. I want to expand her thesis a bit by pointing out what I see as the problems of using the medical-industrial complex as a tool of economic development in Rhode Island – and what I believe is an exaggerated focus on the innovation system as a major focus of the entire economic development strategy in the state.

Rhode Island spends a considerable amount of money each year to promote and develop the innovation economy. The main supporter of this work is the Commerce Corporation of RI.

The economic development investments by CommerceRI appear to be looking for the next big thing, with a focus on patentable and scalable innovations. While they may have invested in a few programs that are focused on economic development in the neighborhoods, that is not their primary focus. They are looking for gazelles and unicorns.

Predictable results

In my experience, when you attempt to talk with CommerceRI and discuss ideas such as the ridiculousness of giving tax breaks to the rich or eliminating environmental regulations, they seem to be unwilling to listen, despite the overwhelming weight of the evidence pointing out that their approach does not work and that it promotes greater inequality.

So, the results are entirely predictable: growing inequality, gentrification [when you keep putting more money in the hands of the already wealthy, it always drives up housing costs and displaces lower-income community members], unaffordable healthcare, decreased longevity, failing public services and an obsession with real estate development.

The real estate obsession, in my opinion, is among the most troubling aspects of the agency's investment strategy, as it is ownership, rather than wages, that drives most of the rapidly growing inequality in our communities.

The data is very clear that lower taxes on the rich and tax breaks for the rich do not contribute to general prosperity, and that strong environmental regulation is correlated with healthier economies.

This last point is important as stronger environmental regulations are correlated strongly with healthier populations, meaning people can be more productive and less money is spent on healthcare so it can be spent elsewhere in the economy.

Some day Rhode Island will understand that economic development works best as a bottom-up process, not a top-down trickle.

Investment could be funneled toward communities that need the jobs the most, creating jobs for the people who already live here and matching the skills of Rhode Islanders, focusing on whole systems rather than after-the-fact cures, and putting the new climate economy at the center of our work.

But until that day, the results will be the same as always, with growing economic inequality and division and a decline in life expectancy.

Greg Gerritt *is the director of research at ProsperityForRI.com.*