Reducing the Costs of Healthcare:

Be Careful What You Wish For

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I recently initiated coverage of a very small company called H-Source Holding Ltd. (OTC: HSCHF & TSXV:HSI.V). H-Source has a platform that allows hospitals (and others) to better manage their supply chains. The platform includes a marketplace that allows for the listing and exchange of excess inventories by/among hospitals. Recall, I am a generalist microcap analyst, as opposed to the more typical industry analysts. As a result, while I often write coverage in industries I covered in the past, I sometimes encounter new industries, or more likely portions of industries that are relatively new to me. In those instances, the initiating coverage is general prefaced by boning up on industry issues that are new or at least less familiar to me. That was the case with H-Source.

I believe there are some pressures that are beginning to build in the global healthcare picture that may change the industry landscape, which could in turn impact capital and investment in the space. I will elaborate, but first, here are a few excerpts from the a fore mentioned research that may set this up a bit:

> The National Health Expenditure Accounts ("NHEA") are *"the official estimates of total health care spending in the United States"* and according to their data *"U.S. health care spending grew 3.9 percent in 2017, reaching $3.5 trillion or $10,739 per person. As a share of the nation's Gross Domestic Product, health spending accounted for 17.9 percent"*. NHEA has been measuring this information since 1960 and the data indicate that healthcare spending as a percentage of GDP has never been higher. Further, estimates suggest it is likely to climb higher still. While there are certainly demographic reasons for some of that change (an aging U.S. population for instance), the minutia behind the healthcare industry is complex to say the least, with many constituents with varying priorities some in direct conflict to one another. The industry, in our view, is increasingly becoming a zero-sum game. What is perhaps even more discouraging is that while the U.S. is spending more on healthcare per capital than any other country in the world, the system's performance vis-à-vis those same proxies is consistently rated as underperforming by many who compile such things. **We're not sure those methodologies always compare apples to apples**, but for those who deal with the U.S. healthcare system on a regular basis, whether they be providers, payers or consumers, there are many who will have little problem supporting those conclusions.
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> …2013 the Institute of Medicine ("IOM") created a report called: ***Best Care at Lower Cost-The Path to Continuously Learning Health Care in America.*** That report, among other things notes the following:

*"Healthcare in America presents a fundamental paradox. The past 50 years have seen an explosion in biomedical knowledge, dramatic innovation in therapies and surgical procedures, and management of conditions that previously were fatal, with ever more exciting clinical capabilities on the horizon. Yet, American health care is falling short on basic dimensions of quality, outcomes, costs, and equity. Available knowledge is too rarely applied to improve the care experience, and information generated by the care experience is too rarely gathered to improve the knowledge available. The traditional systems for transmitting new knowledge—the ways clinicians are educated, deployed, rewarded, and updated—can no longer keep pace with scientific advances. If unaddressed, the current shortfalls in the performance of the nation's health care system will deepen on both quality and cost dimensions, challenging the well-being of Americans now and potentially far into the future… These shortfalls are occurring even as costs are rising to unsustainable levels. … **Additionally, new opportunities emerging from technology**, industry, and policy can be leveraged to help mold the system into one characterized by continuous learning and improvement. In this context, (the committee) identified three imperatives for achieving a continuously learning health care system that provides the best care at lower cost: (1) managing rapidly increasing complexity; (2) achieving greater value in health care; and (3) **capturing opportunities from technology**, industry, and policy".* https://www.ncbi.nlm.nih.gov/books/NBK207212/ .

There is a particular part of the above that I alluded to but did not elaborate on that I would like to address here: *We're not sure those methodologies always compare apples to apples, but for those who deal with the U.S. healthcare system on a regular basis, whether they be providers, payers or consumers, there are many who will have little problem supporting those conclusions.*

Healthcare has dominated U.S. public opinion as well as U.S politics for much of the past few years. Beginning with the implementation of the Affordable Care Act and extending through the most recent elections, the healthcare "debate" is not going away.

What I find particularly discouraging about the narrative is the often-cited notion that healthcare's deficiencies in the U.S. are a clear example of the failures of capitalism. That argument goes something like this: The U.S spends more on healthcare than any other country yet the system's performance lags much of the rest of the world. Therefore, since the U.S. healthcare system still includes *some* free-market elements including a multi-payer approach (as opposed the single government payer approach of most of the others) the problem must be capitalism. I have some issue with that view.

While I tend to think the debate carries through much of the industry, some of the more recent focus has been on drug prices. Indeed, early this year, President Trump "threw down the gauntlet" on high drug prices for Americans, and certainly some of the argument was quite familiar. That is, the U.S. is subsidizing and paying the price for benefits that are being gained by other countries across the globe. When it comes to pharmaceutical prices, he is most certainly not wrong. The notion that the U.S. "free market" has been subsidizing the pharmaceutical costs of government pay systems around the world is not new, and frankly, in my view note even disputable. That issue alone provides a reasonable argument for why the free market is essential to the advancement healthcare in general and pharmaceuticals specifically.

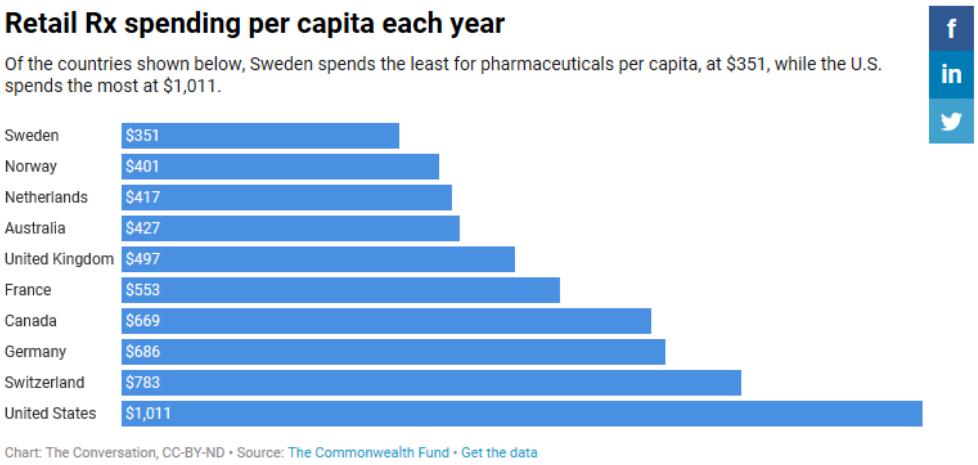
A recent Fortune article (http://fortune.com/2018/08/09/trump-drugs-prices-pharmaceutical-research/) notes the following:

The U.S. is a pharmaceutical powerhouse. Our drug companies invest about one-fifth of their revenues into research and development, more than any other industry does. Developing a new drug is an expensive endeavor. On average, it costs $2.87 billion and takes more than a decade of

hard work. The burden of paying for this research and development falls disproportionately on Americans. According to a 2018 report by the Council of Economic Advisers, an agency within the executive branch, the U.S. market funds nearly half of the world's medical research and development.

Given the above, I tend to think it is a bit disingenuous to suggest that government-based healthcare systems that are benefitting from the subsidizing of our free market healthcare system are somehow "better" than ours? I can't help but wonder how well those systems would "perform" if they paid the same for pharmaceuticals as we do. Further, to deride the free-market system that provides those systems with that benefit in the first place is like biting the hand that feeds them.

Of course, the easy solution, and what apparently our President and many Democrats actually seem to agree on, is to stop. Stop paying higher drug prices via schemes or regulations that allow Americans to buy drugs at prices more in line with those paid by the rest of the world. That is hard to disagree with, especially given the disparities. The chart below helps illustrate the gap. I would add, the authors of this chart suggest these disparities are largely related to pricing as opposed to Americans simply taking more drugs than others:



https://theconversation.com/why-the-us-has-higher-drug-prices-than-other-countries-111256

It wasn't always this way. As the site referenced above suggests, the disparity in U.S. prices vs. the rest of the world's drug prices seems correlated with the advent of a number of "blockbuster" drugs the 1990's. They note "*The number of drugs grossing more than $1 billion in sales increased from six in 1997 to 52 in 2006. The recent introduction of extremely pricey drugs treating hepatitis C are only the latest of these".* I think that fact helps drive home the point about Americans subsidizing primarily **expensive** drugs, which in the aggregate, creates the disparities noted above. Further the hepatitis C reference provides a good example.

In 2013, the FDA approved Sovaldi for the treatment of chronic hepatitis C. The drug (and its eventual derivatives) essentially cure the most widespread viral disease on earth. Hepatitis impacts **vastly** more people than HIV. This was a truly monumental pharmaceutical breakthrough, but the price ($85,000) was prohibitive for even the world's richest healthcare systems. Moreover, for countries like India, which has a much lower standard of living than many nations but was home to one of the largest hep-C populations, the breakthrough was on the face bitter sweet. However, after considerable international backlash, Sovaldi manufacturer Gilead Sciences (California), allowed several generic manufactures to produce and supply

the drug to almost 100 nations for a small fraction of what others around the world were paying. In the U.S for example, some states allowed treatment to only the sickest patients because treating all their hep-C (Medicaid) patients would have tipped over their entire state budgets. As a result, the drug was likely more accessible to patients in India than in the U.S where it was developed. As an American, there is something unsettling about that notion.

On one hand, the above example is maddening. It drives home the exact point that lawmakers are beginning to zero in on, which is the inordinate burden the U.S. is shouldering for breakthrough healthcare therapies. Regardless, I suspect that even in the face of the pricing disparities, there are many hep-C patients that are happy that Gilead came up with what they did… **regardless of the price**. In my view, *that* is the real rub that no one really wants to talk about, which is that ultimately one way or the other the people who receive the benefit of high-priced breakthrough drugs are rarely the same people who pay for them, regardless of the price. That fact is the basis for a great deal of the complexity in healthcare today. Of course, the other side of that hefty price tag, is that the cure replaces perhaps years of healthcare costs associated with caring for hep-C patients who become increasingly sicker without it. For some reason, that never seems to be part of the debate.

The real question is, if U.S. lawmakers conclude that the answer is that somehow, someway, U.S consumers are no longer going to be forced to subsidize the rest of the world's access to cutting edge U.S. pharmaceuticals, they should prepare themselves for the unintended consequences.

As referenced above, drug development requires vast amounts of capital and capital seeks return. It is naïve to believe that R&D spending on breakthrough pharmaceuticals will just continue if price controls prevent *risk appropriate* returns on that capital. By extension, if the R&D stops, so will the breakthroughs. I submit, the current state of things provides its share of moral dilemmas, which is really what much of this is about. Do we withhold a lifesaving treatment from a patient because they, or their government cannot afford it while providing it to someone else who can? If we allow that, are we essentially placing more value on one life than we are on another? Perhaps, but, if we create a system to make all drugs available to everyone who needs them by insisting that developers make less money and the result is a lack of development for a drug that might save someone else in the future, didn't we just place more value on a particular person's life today than on someone else's tomorrow? Unfortunately, governments have a tendency for that sort of choice, because people in the future don't vote or riot in the streets *today*, but that doesn't make the choice more moral, or even the best policy.