

## The Past, The Future and Artificial Intelligence

I know you have heard some rendition of the following line:

*Technology is amazing! just think what it can do for healthcare and our broken system!*

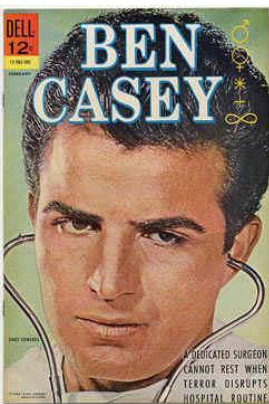
Just think, technology is going to cure all healthcare woes. We are on the edge of the next great age. Information technologies will finally allow an integrated healthcare system. Nirvana is just on the horizon!



But seriously, how much is hype? How much is hope? How much is reality? Obviously, I cannot predict the future. That said, let's analyze what we can reasonably expect in the very near future.

### A Look Back in Time

To do so, we must first travel into the past and see the world through our grandparents and parents' eyes. Let's look at the first real explosion in technology that occurred in the early 1960s when everything appeared possible. It was a time when the United States led the way in technological achievements in healthcare. From new medications, such as antibiotics and blood pressure medications, to new interventions such as coronary artery bypass and valve replacement.



It seemed that these technological breakthroughs would create a system of healthcare that would solve the world's healthcare problems. And in the 1960s, US hospitals and physicians were looked upon as the leaders of the healthcare revolution. After all, aside from the wonders mentioned above, our hospitals had modern items such as complete air conditioning, adjustable electrical beds, central sterile supply services, automatic x-ray processors, and automatic analyzers in the lab. Hospitals even had ID bracelets for patients and pneumatic tubes for mass communications.

Healthcare was at the forefront of pop culture. All three major networks carried hospital dramas (Dr. Kildare, Ben Casey, The Nurses). The

government was involved for the first time with a legislative cure to the massive problem of poor healthcare for the elderly...Medicare.

So, everything in the healthcare world improved overnight, right? Over the next several decades the healthcare system was on the right road to solid performance with decreased costs, right? As you know, the answer to these questions, as we look back, is “absolutely not”!



Cars in front of UCLA Medical Center 1960

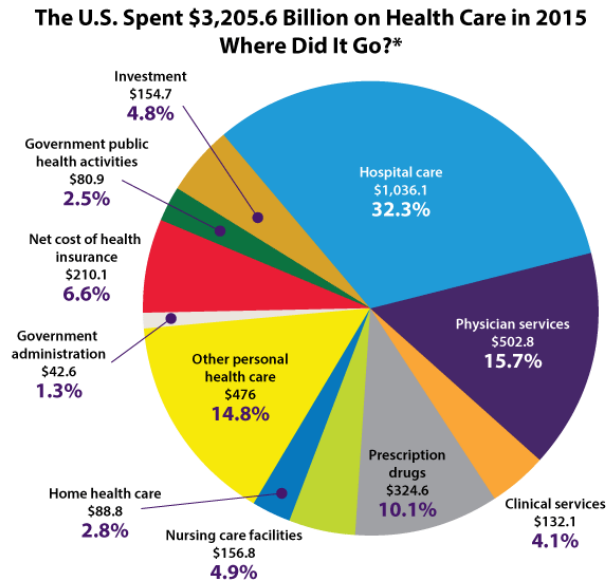
Cracks in the facade were well known by our parents and grandparents. In fact, despite the predictions of a world built on the greatness of technology, it wasn't difficult to read between the lines to foresee the problems we are experiencing today; problems that are occurring even with 20/20 hindsight and almost 60 years of experience. Today, as back in the 1960s, there is a wide chasm between amazing technology and the calls of inadequate health care and unmet needs.

*On the one hand, attention is called to increasing evidence of astounding progress: the discovery and application of cures, drugs and techniques, which can only be described as 'miracles.' On the other hand, there are constant allegations of inadequate medical care, of unfilled health needs among the American people, and apparently widespread discontent with various medical institutions” (Somers and Somers, 1961).*

It is also interesting to note that even in the 1960s, people were questioning the safety of hospitals. Hospitals were no longer places where miracles occurred; they were often potentially hazardous. Citing deficiencies uncovered by the Joint Commission on Accreditation of Hospitals, the Good Housekeeping Journal asked in 1961, “is your hospital safe?” “Is this operation necessary?” asked The New Republic in 1963. “What is the patient really trying to say?” asked Time magazine in 1964, in reference to the need to improve doctor patient communication. Sound familiar? Maybe we should look back before we make too many hasty predictions about technology being the panacea for a broken healthcare system. These words are chillingly like comments we hear today.

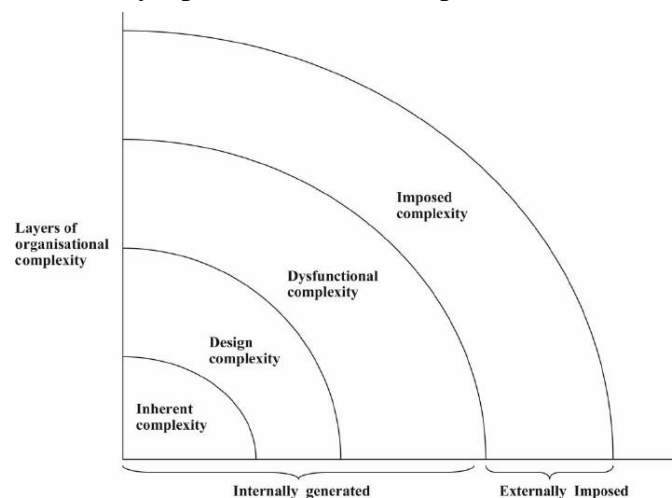
## Why Can't We Do Better?

Any reader then might reasonably ask, if these problems in healthcare were present almost 60 years ago, why on earth have we not done a better job solving them? Is money the problem? No, we continue to spend millions and billions of dollars, but little has changed. The national healthcare expenditure in 1960 was \$27 billion dollars. Today it's over \$3.3 trillion.



A not so simple explanation is that we have so many disparate entities interacting that it is very difficult to have a comprehensive solution. We have a system where there are so many layers between the patient and the physician or provider that it is tremendously inefficient and costly. At each level, there are competing interests, competing data and competition for dollars.

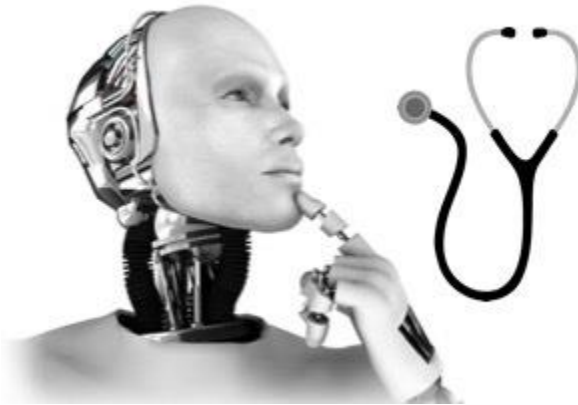
Any solution must be able to weave a coherent whole from a complex pattern of the competing interests of patients, physicians, pharmacists, ancillary healthcare providers, private insurance companies, government insurance companies, governmental bureaucrats, non-governmental bureaucrats, law-makers, attorneys, pharmaceutical companies, investors and so many more.



Multiply this by the fact that we have 50 states with their own regulations and international drug conglomerates, each with their own financial interests added to the mix. Once you realize all the competing stakeholders, it is not hard to understand how very complex a potential solution is.

### Is Artificial Intelligence the Answer

The newest ideas to help our ailing system of health care is artificial intelligence. Let there be little doubt that artificial intelligence will significantly alter the healthcare environment. The question is whether AI will provide a solution or become just another layer to an already complex system. After all, will AI remove insurance companies, the governmental and non-governmental bureaucrats, law-makers, attorneys, pharmaceutical companies, investors and many others?



The amount of data stored electronically, whether by EMR, digital imaging, or another platform, is literally mind boggling. In general, digital data is growing astronomically.

*With the evolution of digital capacity, more and more data is produced and stored in the digital space. The amount of available digital data is growing at a mind-blowing speed, doubling every two years. In 2013, it encompassed 4.4 zettabytes, however by 2020 the digital universe – the data we create and copy annually – will reach 44 zettabytes, or 44 trillion gigabytes.*

There is simply no way any single individual can incorporate this data; AI will absolutely be needed to integrate the massive knowledge base.

You may not have heard of Google's DeepMind AI. But this project has just taught itself to walk. If you look at <https://www.youtube.com/watch?v=gn4nRCC9TwQ> you might say it looks peculiar, but it is in fact amazing - an artificial intelligence taught itself to walk. Oh, by the way, it also beat the grand champion at the hardest game in the world, Go, which takes not only knowledge by intuition.



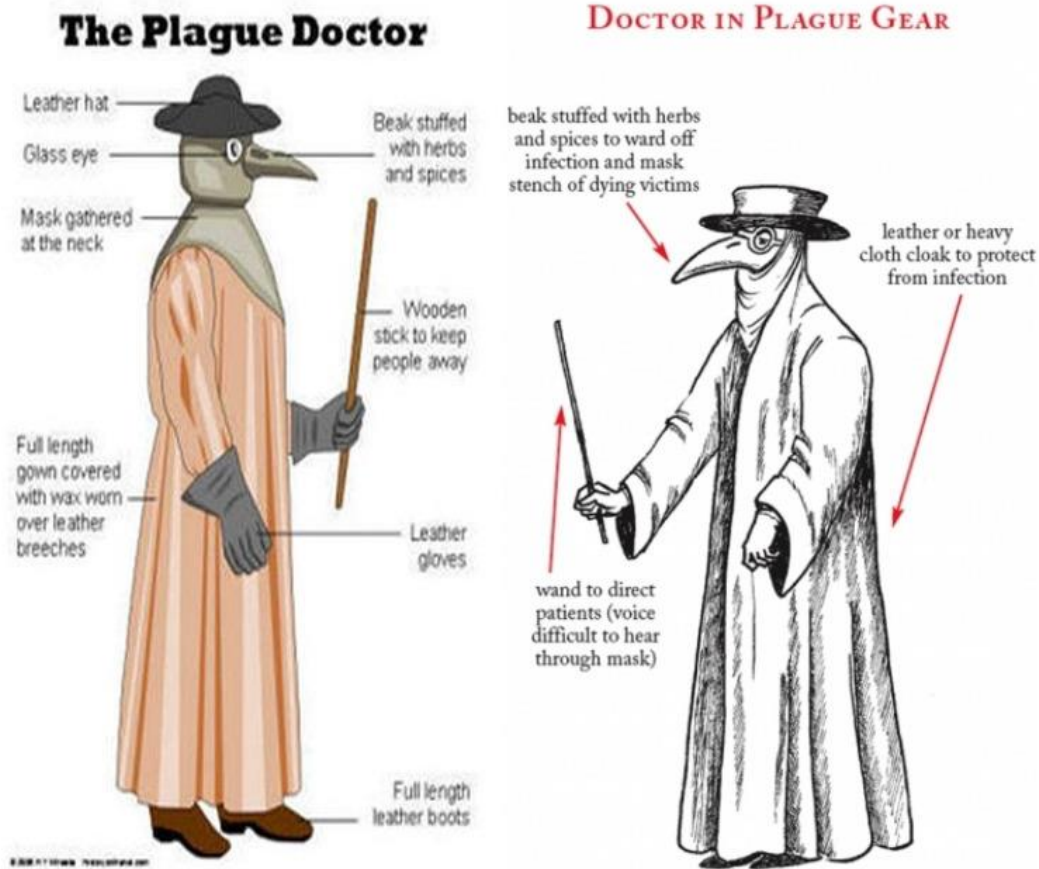
In case you don't know, IBM Watson launched its special program for oncologists. The computer *"has an advanced ability to analyze the meaning and context of structured and unstructured data in clinical notes and reports that may be critical to selecting a treatment pathway. Then by combining attributes from the patient's file with clinical expertise, external research, and data, the program identifies potential treatment plans for a patient."*



### The Physician vs. AI

Although today's patients overwhelmingly would prefer a personal doctor-patient interaction to interacting with AI, don't be so sure about the future. You may have noticed how quickly your children have picked up on computer interactions on social media and are experimenting with new AI apps on their smart phones. If you have read these newsletters in the past you will realize millennials trust their own internet research over the advice of physicians. Incorporating technology into their daily lives is a given.

The doctor pictured below is wearing an outfit that was used during the plague. This was not a fantasy.



But doctors of today are living in a fantasy world if they think they are protected from the vast changes of medicine. An article by the Potomac Institute titled “The Future of AI in Healthcare: No Doctors Required”, cites some of the fallacies that doctors may harbor.

- Doctors will always be needed to give that special, reassuring human factor. *Although the human factor may be vital, it does not require a medical degree to provide comfort or solace.*
- Only doctors can pick up nuanced subtleties of a patient’s mood, behavior or appearance to make a diagnosis. *AI systems, even currently, can pick up secondary items such as facial cues, blood work and a line of questioning the same way doctors do.*
- Doctors will be assisted by AI in calculating diagnoses and treatments, but doctors will be needed for the final decision because the doctor can process additional variables. *AI framework already can make better decisions in certain situations and will improve with time. Doctors are prone to bias and human error and are limited in their recall.*
- Doctors have a “sixth sense”, medicine is an art. *Intuition is a pattern recognition, something computers are better at.*

- Doctors will be needed for physical examinations. *Physical exams can already be supplemented by robot gloves with amazing sensors. UCSD has already started using a device to help physicians evaluate patients. Experiments are already underway for robotic gloves to detect breast cancer.*

## The Future

The doctor in the not too distant future, may indeed be artificial intelligence. The transition will not occur overnight. Our medical descendants' success will depend on their ability to integrate themselves into a very different system than the one in which we currently practice.

There are a myriad of startups in the healthcare AI world. Many of these will be successful, but most will flounder. And, as the past 60 years have demonstrated, the situation is not just one of technology and its new and exciting cures. With each new generation, the layers of intricacies only increase with more self-interested parties wanting input and a piece of the financial pie. Remember the long list of interested parties mentioned above? Add to that list the entire tech industry, including programmers and entrepreneurs. Oh, by the way, will artificial intelligence have a vested interest at a certain point?

Will technology solve the systemic problems of our healthcare system or will it add additional layers? Can technology not only offer new cures, but new robust delivery that is acceptable to the mass majority of parties involved? Only time will tell. I pray for the best!

If you have thoughts or reactions to what I have written, I would love to hear from you. You can write me at [reed.wilson@privatepracticedoctors.com](mailto:reed.wilson@privatepracticedoctors.com)

## Private Practice Doctors and A Brand-New Opportunity for You!

Speaking of new and exciting changes, we hope to introduce you to an amazing new product. We know many of you continue to use your own ability to negotiate merchant account rates. Through a partnership with Elavon/Union Bank, Private Practice Doctors has a new service available to you. For an amazing flat fee of 2.99% for any major credit card, Elavon/Union Bank will set up a secure payment portal for your patients to pay bills online using your existing webpages or a new designed webpage. This site will integrate seamlessly with your site to allow patients to pay immediately online at no additional charge. We highly encourage you to see the demonstration video and let us know if you have any questions.

[http://players.brightcove.net/3033408018001/E1Q2jvhKg\\_default/index.html?videoId=5724297758001](http://players.brightcove.net/3033408018001/E1Q2jvhKg_default/index.html?videoId=5724297758001)

Just to reiterate:

The retail market cost of the Payment Navigator Medical Office Program is:

- \$499.00 per card transaction terminal.

- \$149.00 set up fee.
- A flat fee for all credit card transaction volume
- A monthly service charge

**PPD Membership Cost:**

- \$199.00 per card transaction terminal
- \$0 set up fee
- 2.99% flat fee for all credit card transaction volume
- No monthly service charge

Some Reference Articles

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4193636/>

<https://potomacinstituteceo.wordpress.com/2016/09/12/the-future-of-ai-in-healthcare-no-doctors-required/>

<https://www.forbes.com/sites/forbestechcouncil/2018/02/21/can-technology-be-the-magic-pill-that-cures-health-care/#febafb6671e2>

[http://jacobsschool.ucsd.edu/news/news\\_releases/release.sfe?id=2190](http://jacobsschool.ucsd.edu/news/news_releases/release.sfe?id=2190)

<http://www.newsweek.com/2017/06/02/ai-cure-america-sick-health-care-system-614583.html>