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18.10.2018

Tags: France, Regulation, Healthcare, AI, Big Data

Dr. Julien Borowczyk, Secretary of the Social Affairs Commission at the French Assemblée Nationale, offers his insights on the upcoming changes to the French healthcare system. He walks our audience through France's toughest healthcare problems, the recent Conseil stratégique des industries de santé (CSIS), and the potential for AI and Big Data in French healthcare.

Could you introduce yourself to our international audience?

I am the secretary of the Social Affairs Commission at the Assemblée Nationale. I am a doctor by training and when Emmanuel Macron created En Marche, I was inspired by the movement and decided to try my hand at politics. It was a hard decision for me, though as I love treating patients and did want to let go of that activity. But, I managed to organize my schedule so that I can still spend time in my doctor's office on Monday mornings and Friday afternoons.

I decided to take this role, specifically, out of my interest in biotechnology and medical informatics – I see great potential in the medical applications of AI and other technologies, and I wanted to gain a better understanding and play a bigger role in bringing those potential advancements to fruition. But I also bring a liberal mindset to the role, and I am able to consider what the patients needs are in the field today. In that way, I am rather a blend of a pragmatist and a visionary.

My experience as a doctor has been particular helpful with the recent PLFSS (*le projet de loi de financement de la Sécurité sociale* – the financing plan of the social security). I am able to offer valuable insight because I understand the realities on the ground in our medical system, and I can thereby comment on how the budgetary changes will impact patients. At the moment, I am working to build a multidisciplinary medical team in the cabinet. We are creating the "Comitée Professional Territorial de Santé" that will bring together medical professionals from many backgrounds and regional expertise.

What do you think are the key measures that need to be taken in reforming the healthcare system in France?

By far and away the biggest problem facing the French medical system is the "medical deserts" that have manifested in underserved areas. The question on everyone's mind needs to be, "how can we provide medical care to areas that do not have a sufficient healthcare infrastructure?" Sure, we have telemedicine, but it is still crucial that we have a physical interaction between doctors and patients. Telemedicine is a good tool, but it cannot replace actual doctor-patient relationships.

So, the question becomes, how do we make up for the deficiency of doctors in certain geographic regions of the country? Do we force the doctors to move? Personally, I do not think so – I think that the best strategy is to give a financial incentive for the doctors to move to underserved areas and provide a social service for the region and the country, at large. These assignments would not be meant to be permanent. Doctors could go and live for a few months or a few years in these areas and then return to cities or their hometowns. But, who knows? When doctors move across the country for these short-term assignments, they may end up enjoying their area and settling down. Regardless, we need to bring multidisciplinary health expertise to local hospitals. This measure should help to eliminate the medical deserts.

Secondly, we need to restructure the approved healthcare pathway in France. As emphasized by Agnes Buzyn, Minister of Solidarities & Heatlh, we need to focus on fostering a team environment amongst are caregivers and decentralizing the very nature of healthcare in France. Nowadays, we need to focus more on ambulatory/outpatient health – caregivers in villages and towns can handle procedures that are traditionally done at the hospitals. We need to have these local, decentralized caregivers work together with regional hospitals in changing the structure, and this change will ultimately be more efficient for our doctors and nurses, as well as our patients.

These are the two key measures that deserve our attention at the moment. Another one that is about to be implemented in November is the common access of patients' electronic medical records among caregivers. Until now, there was no common server where medical professionals could access a patients' dossier. Now, we are working on broadening the scope of the medical records. Everybody that interacts with the patient along the healthcare pathway has a chance go and get to know the patient and impact the quality of his or her care. We want those interactions to be taken into account, as well.

I think that the introduction of universally accessible medical records amongst caregivers is tantamount to providing good healthcare in France. In an emergency situation, time is often wasted because the doctors on hand do not know the history of the patient. It takes centuries to find out who the patient is before administering the correct treatment, but happily, that is changing.

But, as this sensitive information becomes more and more available to caregivers, how is the government ensuring data privacy for the patient?

The French government has done well to take data privacy into account, considering the sensitivity of the matter. Doctors and relevant actors are given access to medical records via their *Carte Vitale* (Social Security cards). Now, keep in mind that the cards themselves will not contain the information, as they do in some countries. We think that if you have a card that has *all* of your important information, it is too vulnerable to theft. Rather, the card will have a sort of password that will give you access to a server. Medical practitioners will then have special systems that let them access the relevant patients' information when it is needed. Patients will naturally have access to their own information, as well. The question now is how to help patients guide who has authorization to access their information in a responsible and beneficial way.

There was a popular idea floating around on the matter that was proposed by the ANEMF (Association Nationale des Etudiants en Médecine de France). They feel it would be helpful to implement a "health service," which would consist of three months of preventative education at schools. I find this idea very interesting. This would consist of basic anatomical education, lessons about sexually transmitted diseases, and an introduction to the French healthcare system, more generally. This education would help inform our citizens from a very young age to constructively manage their health data. We need to ensure that there is a standardized minimum knowledge of the healthcare system among the French people.

Again, I think this is a promising idea, and it is my job to communicate this proposition and my opinion to the Minister.

On that, how important is preventative education in France?

Preventative education is immensely important, and it needs to be reiterated throughout a child's educational career. We need to ensure that people from a young age understand the consequences and risks of sexually transmitted diseases and other preventable ailments. It is not enough to teach them to use a condom or to behave in certain ways – we need them to truly understand the severity of the issue and inspire them to wholeheartedly adopt safe, preventative precautions.

Unfortunately, we are not doing so well in this regard in France. Our rate of vaccination is shockingly low. But I think that if people truly understood the real consequences of, for example, not vaccinating their children, they would change their behavior. I think that it is important to make accurate disease information accessible to everyone. For instance, if somebody searches the internet for information on, say, the Chicken Pox vaccine, there is a very good chance that they will stumble upon fake news that will sway their decision to vaccinate. This is a global problem, of course, but it is especially true in France, as we have a culture of defiance against healthcare providers. In France, we see healthcare as a fundamental human right, and our social security system makes healthcare accessible to everyone. Nonetheless, we are suspicious of our providers. So, what we have to do is provide an official source of trustworthy, objective information that is comprehendible to the average person. Unfortunately, medicine has become so efficient and specialized that it is beyond the comprehension of the average citizen.

It is for such reasons that we need to further link the people with our legislators – I believe that a comprehensive internet website with objective and credible descriptions of medical ailments and procedures would help abate these types of problems.

How do you think that the announcements at the recent CSIS (Conseil stratégique des industries de santé) will positively impact the French healthcare sector?

There are three takeaway points from the CSIS that I think will positively impact our healthcare ecosystem. The first of such points is that it sent a clear message to the world that France wants to be a country of innovation, research, and global leadership. The CSIS signaled that France wants

the elite pharmaceutical researchers to come and work here. We want them to know that they can operate here and get a fair price for their work. After all, if they work here, they stimulate the economy and create jobs.

The second point has to do with ATUs (Temporary Authorization for Use). The availability for ATUs is going to be much more widespread, even for patients struggling with rare diseases. This is revolutionary, and it will help spread the potential benefits of new products.

The third point that will greatly benefit the French healthcare ecosystem is the restructured method of pricing drugs. Until now, we have two different prices for pharmaceuticals and medical devices: those prescribed at hospitals and those prescribed in retail and outpatient setting. This has led to problems between the government and the pharmaceutical industry, and by simplifying this process, I think that the industry is understanding that we value their research and their innovation. We are building confidence.

Moreover, beyond what was discussed at the CSIS, I think that we need to give some autonomy to the patients. We need to encourage them to take some ownership and responsibility over their healthcare, they need to understand what is inside the drugs that they take. And on our side, we need to be clearer regarding the benefits of taking a particular drug. There was, for example, massive defiance and outrage over the cholesterol drug Statin not too long ago in France. People were outraged by the negative side effects, but they didn't consider the many lives that were also improved by the drug. I think that there needs to be better communication between the media, patients and healthcare providers over the medicines that they are taking.

In France, the pharmaceutical industry has a real image problem. The public does not like the idea that "one can make a profit on healthcare". What is your role in reviving the image of the healthcare and life sciences sector?

I am a pessimist. I do not believe that there will be a sudden revolution in the way that the French public views the pharmaceutical sector. But, I think that there are two ways to help curb this image problem. First, I reiterate that there needs to be a credible source that can inform patients of diseases and treatments. This way, they don't mistakenly attribute negative, unrelated symptoms that they develop to a medication that they are taking simultaneously. For instance, when a news outlet covers a story of a patient that got a vaccine and then reports that he is handicapped, we, in the cabinet, get dozens and dozens of people asking us about it and they decide not to get vaccinated. Encouraging the media to be responsible with their coverage, and also providing a

credible reference source for patients, would help.

Secondly, it is important that the public understands how risk-intensive the pharmaceutical industry is. It is not a humanitarian organization, of course – they have a profit motive, but they also take huge risks. A company could spend ten years and USD one billion in drug development, only to have it not work or be rejected by authorities. That is a significant risk, and I don't think that the mainstream media does a sufficient job informing the public of this aspect of the business. I think that the journalists at large media outlets should be encouraged to include this fact in their reporting. The media has a big responsibility in public health – take my example of the vaccine I cited earlier. Reporters ought to be reminded of the responsibility that they have to prevent the spread of fake news about medicines.

Lastly, I stress again that we need to promote more autonomy and ownership of healthcare on the side of the patient. We need to empower patients to become capable actors in their healthcare pathway. Then, they will see that the actors and the care providers work together to cure diseases the best they can, and maybe they will adopt a better image of the drug producers. In my opinion, the most effective way of passing the information to the patient is to include better instructions that accompany prescriptions.

France is quite advanced when it comes to frontier technologies. What do you think about the application of Big Data and Artificial Intelligence in healthcare?

First, in order to apply these frontier technologies, I think it is critical to establish the electronic medical records database that I was talking about earlier. Once the data is widely accessible and comprehensive, in one location, it will be easier to let superior technologies sift through it and advance our processes. To make this happen, we need all of the actors in the healthcare sphere to work in unison – the HAS (Haute Autorité de santé), doctors' unions, the CNIL (Commission nationale de l'informatique et des libertés), etc.

I am not worried about the ability of France to launch the electronic medical record database. If anything, I think the challenge will come after, when all of the healthcare providers will be responsible for keeping each patient's records up to date.

On Artificial Intelligence, I think that it has remarkable potential. It is important to recognize its limitations, though – it will never be able to replace the human element in healthcare administration. Medicine is such a tricky craft that you will never be able to eliminate the oversight of a real human being. This was a topic of discussion in surgery not long ago, as it would be too

complex to automate most surgeries due to the variance in the layouts of each individuals cardiovascular system. Veins and arteries are not in the same exact place from one individual to the next. Therefore, you will always need a human being guiding the process to ensure success. Nonetheless, these new technologies will certainly help – you could, for example, have a small stethoscope on a smart phone or device from which you could send vital signs to doctors remotely. These new tools will help a great deal, but nothing will ultimately replace the human element and the compassion that doctors and nurses provide to patients.

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