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EDITORIAL ARTICLE

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Innovation beyond Artificial Intelligence and Automation

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Innovation has been the buzzword for some time in the field of Pharmaceuticals and Pharmacovigilance! Some of us equate innovation to automation and associate difficult technical jargon like Machine learning; Artificial intelligence etc. interchangeably with innovation and some of us take an extremely sarcastic and sardonic view of the whole buzz and imagine a disastrous future ahead of us where human jobs are taken over by machines and robotics.

Caught in this quandary one wonders if innovation only relates to automation and pertains to the domain of technical wizardry of artificial intelligence!

Well, I beg to differ.

By definition, innovation means a new idea, product, or device. Technical wizardry can help, but surely that is not the only aspect at work when we start unraveling innovation!

Innovation doesn't even have to be equal to automation! Rather innovation should lead us to augmentation. Automation perhaps has an ominous undertone to it, as it can denote chipping away from the work that people do and potentially taking away jobs! On the other hand, augmentation means starting at what work people do today and making it easier and better with the use of technology! Augmentation is an innovation that complements and does not compete with human intelligence or human emotions (Weadon M, 2010).

As a Pharmacovigilance professional, there have been some common areas of innovation that have taken the center stage in our attention over the last few years. Automating processing and review of adverse event reports, automating various workflows about regulatory compliance, using predictive models for signal detection, and using artificial intelligence for literature surveillance have been some of the areas where the Pharmacovigilance industry has heavily invested. There have been many platforms where this has been discussed and will continue to be discussed. And rightfully so. There is enormous potential for technology to take the world of Pharmacovigilance by storm!

But today let us feel challenged to look at innovations beyond automating processes, innovations that finally touch the lives of patients, and innovations that touch us as humanity! Below are just some of the areas of innovation that we generally don't think of when we think of innovation in the world of pharmaceuticals!

Innovation is in reaching the patients in need

Innovations mean working on the formulations of the drug to increase its reach to a target population. For example: developing mouth-dissolving formulations for the pediatric population so that children in need have a better acceptance of a medicine. Innovation could reflect in coming up with drug device combinations where a device can deliver the drug better and eliminate side effects! Pharmaceutical companies are invested in pursuing these innovations as well today.

Innovation is in repurposing drugs

As professionals in the field of drug development, we are aware of the time and effort it takes to bring a new drug to the market! The intricacies of a drug finally reaching the population in need are quite some! Repurposing drugs, also known as re-tasking or reprofiling of drugs is defined

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as a process of identification of new pharmacological indications from old/existing/failed/investigational/already marketed/FDA approved drugs/pro-drugs and the application of the newly developed drugs to the treatment of diseases other than the drug's original/intended therapeutic use. Repurposing drugs have been and continue to be an innovative approach to cut short some of the time and challenges of drug development and reaching the people in need. While no denying, that technology plays a good part in the in-silico model of repurposing drugs, it is perhaps not the first thing that comes to our mind when we think of innovation in the field of Drugs (Davenport et al., 2015).

Many drugs are already on the market which is the result of repurposing. For example, Aspirin: which was originally approved as NSAID got later approved for the prevention of cerebrovascular disease. Or Sildenafil, approved for pulmonary hypertension got reprofiled for erectile dysfunction!

And there continue to be many re-purposed drugs in development.

Innovation is sustainability

Very few of us would associate innovation with sustainability. Yet, innovative solutions for sustainably doing business are key in bringing about the way we look at preserving the only inhabitable planet that we all share! Though a little distanced from the world of Pharmacovigilance perhaps, but not unrelated I would say. The Pharmaceutical industry has been cognizant of its role in sustainability efforts and there have been innovative efforts in bringing down the carbon footprint and reducing environmental damage.

Innovation is reinventing how teams work, and how we recognize new ideas at work.

How we go beyond the bureaucracy and embrace ambition and momentum at work. Innovation is also looking at the changing landscape of leadership in the RUPT (Rapid, Unpredictable, Paradoxical, and tangled) world that we work in today! Looking for cultural diversity (instead of proverbial culture-fit), being mindful of our cognitive biases, and embracing our imperfections are some of the ways the leaders of the world are innovating today when it comes to leading the change!

And finally, innovation is in reinventing yourself! When was the last time you took a hard look at yourself and became your best admirer and your worst critic? When was it the last time you thought about how you can do things a little differently to add more value to the often-mundane work that you do? What can you do differently? Do you need to learn a new skill? Do you need to speak up in places that intimidate you?

I leave you with these questions as we embrace innovation as a way of life after all!

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