Digital Health Research: From Engineering to Digital Health

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ABSTRACT

Artificial intelligence (AI) has the potential to revolutionize all aspects of human life and endeavours. We are constantly bombarded by the hypes and promises of AI in medicine. In this talk I will discuss the challenges faced in the deployment of AI in clinical medicine: algorithm robustness, data governance, stakeholder consensus, legal compliance, ethics and moral code of conduct.

The idea behind AI in medicine is not so much to replace medical practitioners (at least not any time in the near future) but to widen the horizon of medical expertise. The real impact is to be able to start cloning all the expert knowledge, so we have access to all types of care, and digest information to improve human health.

COVID-19 Vaccine Trial: Myth vs. Evidence

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ABSTRACT

Vaccination efforts are one of the cornerstones in trying to control the COVID-19 pandemic during these times. Currently available vaccines are being rolled out across the world and many studies are ongoing to see the effects on prevention of infection, impacts on variants of concerns and preventing hospitalization and severe disease. Long term availability of vaccines that has received full and emergency authorization for use is a cause of concern as the disease continues to cause new infections. Thus, ongoing vaccine trials are important to give us long term safety and efficacy data and new trials of vaccines are always encouraged as it would eventually contribute towards a more sustainable vaccine supply chain in the long run.

Nine sites in Malaysia embarked on the phase 3 clinical trial of an inactivated COVID-9 vaccines in collaboration with IBCAMS China in January 2020. After ironing out the necessary details with the NPRA and MREC committee, the trial began swiftly with successful recruitment of 3000 participants who were subjected to a placebo-controlled trial. As the months progressed, unfortunately a 3rd wave began in Malaysia which resulted in a massive wave of COVID-19 infections that resulted in enormous transmission of infections in the community and a massive crunch on the healthcare systems. The government swiftly responded not just by expanding the healthcare services but also resulted in a rapid escalation of vaccine roll out across the nation and swiftly resulted in more than 95% of the adult community being vaccinated. This soon became an ethical dilemma in continuing a placebo-controlled trial in the wake of a deadly pandemic and soon discussions began to alter the trial design protocol in order to cater for the need of the nation during these pressing times. This crossover trial design was necessary in order to ensure continuation of the trial in a more ethical manner and that reliable information will still be collected on longer-term safety, efficacy and duration of protection provided by the vaccine.