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"The way medicine approaches human suffering has always been determined by the technology available at any given time" (M.D Bessel van der Kolk, 2014)

While industries and societies recover from the devastating effects of the COVID-19 pandemic, the world has long forgotten the abrupt impact on healthcare systems worldwide. Reallocation of essential resources and capacity as hospitals and healthcare workers rallied their front line defence in the fight to contain the virus outbreak with impending hopes of safe and available vaccines. Consequently, the event catapulted medical innovation and advancement as pharmaceutical companies raced to develop and distribute safe vaccines to the general population.

At the core of medical advancement are clinical trials. Clinical trials validate whether these newly developed vaccines, drugs or procedures adhere to ethical processes and whether they are considered safe for consumption by the general population and with any adverse side effects. Clinical trials are inherently complex, embedded with rules and regulations. At the same time, these organisations face industry challenges, such as those associated with patient recruitment and retention, site and resource management, and scarce resources (Gibson, 2021; Laaksonen et al., 2022).

At the onset of the pandemic, clinical trial programs were severely impacted by stay-at-home orders, resulting in reduced site capacity and logistical challenges, with industry leaders delaying and even suspending the start of several clinical trials and ceasing patient recruitment efforts (Margas et al., 2022; Miseta, 2020). Conversely, the pandemic reshaped clinical trials through accelerated integration of innovative Big Data (BD) technologies and the adoption of hybrid and decentralised clinical trials (DCTs) models, disrupting conventional patient recruitment strategies (Clarke, 2021; Fassbender, 2019). BD

technologies and analytics present several

AN EVALUATION OF BIG DATA TECHNOLOGIES AND CLINICAL TRIAL PATIENT RECRUITMENT

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opportunities to tackle and address bottlenecks associated with patient recruitment by making trials more accessible to patients, reducing the risk of delays and the costly consequences of innovative treatments reaching the market.

Biography

Janine is a creative-minded and passionate individual with a proven track record for delivering results. She advocates the ethical use of data and data analytics supporting data-driven decision-making and strives to provide business value through actionable insights. Janine has a wide range of skills and deep expertise in Advanced Analytics, Machine Learning, Data Mining Methodologies, Data Quality, and Visualisation. Her successful career spans several industries, including Banking - Credit and Collections, Retail, and Manufacturing. While working full-time, she is also pursuing a PhD at Monarch Business School Switzerland. Besides her passion for Data Science, she is deeply passionate about giving back to her community. She is committed to several initiatives, such as the Door of Hope children's mission, and serves as Ambassador for The Warrior Project - Community against gender-based violence. Research Interest: My research interest is primarily the ethical use of data and data analytics. Whilst I advocate data-driven decision-making and strive to provide business value through actionable insights, my personal experience prompted my attention and dedication to Big Data ethics. The onus rest on us as data practitioners to advocate the ethical use of data and data analytics.