

Abstract

A digital health platform to manage COVID-19: decentralizing technology to empower rural and remote jurisdictions

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Abstract

Introduction: The variation of coronavirus disease (COVID-19) outbreaks across rural and remote jurisdictions makes it imperative to invest in scalable digital health platforms to not only minimize the impact of subsequent COVID-19 outbreaks, but also to utilize such approaches to predict and prevent future communicable and non-communicable diseases.

Methods: The methodology of the digital health platform comprised: (1) Ethical Real-Time Surveillance to Monitor Risk: evidence-based artificial intelligence-driven individual and community risk assessment of COVID-19 by engaging citizens using their own smartphones; (2) Citizen Empowerment and Data Ownership: active engagement of citizens using smartphone application (app) features, while enabling data ownership; and (3) Privacy: development of algorithms that store sensitive data directly on mobile devices.

Results: The result is a community-engaged, innovative, and scalable digital health platform, with three key features: (1) Prevention: this feature is based on risky and healthy behaviours, and has the sophistication to continuously engage citizens; (2) Public Health Communication: based on their risk profile and behaviour, citizens receive specific public health communication that helps them make informed decisions; and (3) Precision Medicine: risk assessment and behaviour modification is individualized so that the frequency, type, and intensity of engagement is based on individual risk profile.

Discussion: This digital health platform enables the decentralization of digital technology to effect systems-level changes. With more than 6 billion smartphone subscriptions globally, digital health platforms enable direct engagement with large populations in near real-time to monitor, mitigate, and manage public health crises, particularly in rural communities that do not have equitable access to health services.

