E5 Early Detecting of Infectious Disease Outbreaks: AI Potentials for Public Health Systems

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The world is increasingly connected through technology, bringing people closer despite vast distances. However, this has led to urbanization, population growth, and a complex global economy. Climate change is also a consequence of our consumerist lifestyle. These changes have also increased the risk of global outbreaks and pandemics (Haileamlak, 2022). Fortunately, technological advancements offer tools such as digital surveillance, data analytics, and Artificial Intelligence (AI) to help manage such crises. AI models excel at analysing large amounts of data quickly, revealing complex trends and patterns beyond human capability (Aleixo et al., 2022; Sylvestre et al., 2022). The objective of this presentation is to introduce a comprehensive framework integrating AI with the public health system to harness its strong analytical capabilities and support the early detection of infectious diseases. The proposed framework involves data collection from various sources, cloud-based or centralized repository data storing and pre-processing, AI model development, and data analysis, resulting in an effective early warning system to inform public health authorities promptly. Integrating AI into the public health system enhances response efforts and swift tackling of challenges for better health outcomes. However, effectively harnessing AI's potential and integrating it into existing systems presents significant challenges, requiring the retention of technical expertise and a comprehensive understanding of AI functionalities among healthcare professionals. Addressing these obstacles is vital for enhancing public health resilience and effectively responding to future outbreaks, as demonstrated during the recent use of AI in the COVID-19 response.

Keywords
Outbreaks; AI; Public Health; Digital Surveillance

References

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