Chapter 22
Use of Artificial Intelligence for Health Insurance:
A Bibliometric Exploration

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ABSTRACT

Artificial intelligence has emerged as the technology with potential to enhance access, transparency, efficiency of health insurance. Poor penetration of health insurance is a cause of concern for people from economically disadvantaged groups. The chapter explores bibliometric analysis of use of artificial intelligence for health insurance. The Scopus database was used for the bibliometric analysis. United States, Canada and India emerged as the leading countries for research in AI for health insurance. Mesko was the leading author. It was found that AI has the potential to transform health insurance for preventing fraud detection and leakages in public health insurance system.

I. INTRODUCTION:

Large-scale language models, including GPT-4, have the potential to effectuate transformative change in healthcare but must be regulated very carefully given the distinctive nature of the training. GPT-4 was released last March 2023. On one hand, GPT-4 would be a better support system for all the medical-related tasks. However, there are major concerns on GPT-4's reliability in terms of using it on matters concerning the patients. The tool thus needs efficient regulatory oversight so that its pursuit would not compromise data security. (Meskó & Topol,2023). In terms of race, gender, and type of insurance payer,

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the topics for clinical notes and psychiatric note differed extensively, just like previously known clinical observations. There were differences in accuracy of predictions suggesting that the machine may be biased in its predictions by gender and insurance type for ICU mortality (Chen et al., 2019). High disparities in risk factors for health and chronic diseases indicate the importance of community-specific targeted public health initiatives. These disparities reflect the essential need for priorities within communities as a strategy to level off health inequalities. The CDC and local coalitions are taking this data to enact targeted strategies that fill up these gaps (Liao et al., 2011).

The prevalence of non-adherence highlights the need to identify at-risk patients. Understanding these influencing factors can help tailor interventions to improve medication adherence (Sedjo & Devine, 2011). There are regional differences in prevalence of medical conditions (Steele et al., 2008).

Long-standing inequities in funding and access to essential services have created health disparities among Indigenous peoples, increasing their risk for severe COVID-19 illness. Inconsistent data collection on underlying health conditions has limited understanding of mortality disparities. Socioeconomic factors and barriers to healthcare access may have further exacerbated these challenges (Arrazola, 2020). AI is useful for fraud detection and prediction (Tiwari et al., 2023; Kakkar et al., 2024). Technology has emerged as a potential mechanism for distribution of pharmaceutical products (Ahalawat & Tiwari 2024). Digital discrimination is prevalent across various domains, including risk assessment in policing and credit scoring (Ferrer et al., 2021).

Artificial Intelligence (AI) has been found to be a potential solution for health inequalities in poor countries by WHO (Alami et al., 2020). Ai is emerging as a potential tool for enhancing the significance of health insurance (Tiwari et al., 2023). XGBoost has performed better than other algorithms (Dhieb et al., 2020).

AI has the potential to become a facilitator for system driven change (Bullock et al., 2020). Tech firms are making efforts to integrate regulation with technology to enhance their control over the market (Benkler, 2019). The past few years have been richly rewarded when it comes to fulfillment of finding artificial intelligence (AI). There are shifts in a number of processes including insurance claims submission and processing as well as in bias mitigation in studies, among many other processes. Even though there are considerable uses of AI in identifying risk factors associated with eventual health conditions within individuals leading to more individualized prevention strategies, the need to implement these responsibly cannot be overstated (Thesmar et al., 2019). Privacy, confidentiality, information sharing legislation are critical issues in insurance as well as application of AI in patient's treatment (Bohr & Memarzadeh, 2020).

If all the various stakeholders can come together in a manner that allows a workable model to evolve, then AI has the potential to bring about some very nice changes in healthcare and health insurance. AI is useful for risk management. (Prakash et al., 2022; Jain et al., 2023). AI suffers from trust issues (Zarifis et al., 2021). Technology has its own limitations. The rise in cyber frauds has challenged widespread adoption of AI by stakeholders (Kapadiya et al., 2022). White box algorithm was found to be better in predicting fraud claims of health insurance (Johnson et al., 2023).