Healthcare's Coming Digital Transformation

At *The New England Journal of Medicine* Catalyst event 'Technology & Data in 2030', Drs Eyal Zimlichman of Sheba Medical Center (Ramat Gan, Israel) and David Bates of Brigham and Women's Hospital (Boston, MA USA) discussed the future of healthcare's digital transformation over the next ten years. They focused on use cases for artificial intelligence (AI) and needed healthcare organizations' preparations. Areas that will see improvement are digital pathology and sensing technologies.

Dr Zimlichman points out that AI has already impacted radiology, that radiology is far ahead of other clinical areas in terms of AI integration. Over the next ten years, he expects AI to improve decision support for better patient safety and efficiency and automation of tedious tasks. Workflow integration is key to the successful implementation of any AI solution. Radiology is ahead of other clinical areas in terms of AI integration. There, it was observed that many AI solutions that failed did not integrate well into the workflow, unlike those that were successful. Over the following years, an expected area of focus will be solving the problem AI workflow integration in clinical care.

Dr Zimlichman indicates that the right operational tools can help hospitals run more efficiently. Hospital control towers will optimize patient flow and placement and better situational awareness of which patients are deteriorating and need to be quickly moved. AI integration into these control towers will decrease staffing and increase efficiency, which is vital for hospitals. Many organizations that struggle with AI need mechanisms to facilitate innovation internally (e.g., at academic medical centres) and with start-ups and broadly implement them. Predicting and preventing illness will drive down healthcare costs and benefit the public's health.

Connected sensing technologies are another growth area. While they provide an enormous quantity of data, digesting that data can be problematic, which AI can address by identifying helpful data points. For chronic disease management, AI facilitates understanding the disease progression and give the ability to act before hospitalization becomes necessary. In short, sensing technologies will provide the means 'to predict and prevent'. For acute care, connected sensors can remotely monitor and provide patient smart alerts. Wearables or medical devices may combine with monitoring or prescribing apps and may see prescription use. Given the current boom in health-related apps, it may be likely that stricter regulation may come to ensure safety and efficacy.

Precision medicine has seen slow progression. The 'multi-omics will include genomics, metabolomics, proteomics, microbiomics, digital pathology and radiology, and other fields. AI may process these data to predict better which drugs to prescribe and which patients may develop complications. Zimlichman points out that the policy toward payments is a critical issue. Policy changes toward telemedicine helped increase those services during COVID-19.

'Incentives can push innovation to change healthcare'.

Source: [NEJM Catalyst](#)

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