



Raxa Health, India

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Digital connections to improve India's health

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Healthcare in India has long been provided in unconnected silos by individual doctors and in small hospitals. Care is typically initiated by patients who seek treatment in the private sector for which they pay providers an “out-of-pocket” fee.¹ Most patients receive either printed or short, hastily handwritten summaries of their care. This serves to tie patients to the provider who knows them, but it means that when they do happen to move and seek another provider there are no reliable means of transferring information.

As a healthcare provider I often have to redo blood tests and even re-administer drugs because there are no shared electronic records, paper records may be incomplete or hard to interpret, and I can't always rely on a patient's memory. Because of the lack of information patients have little choice but to agree with providers' management decisions. These duplicate and redundant care practices not only contribute to unnecessary costs for patients but increase avoidable harm and leave people feeling ignored and disconnected from the healthcare system.

Public sector providers (those paid by private insurance) have some interest in reducing these costs and improving the quality of care but still constitute a limited share of all care provided. Only about 20% of all health expenditure is public.

On 26 September 2021, the prime minister of India, Narendra Modi, officially launched the Ayushman Bharat digital mission (ABDM).² This ambitious digital initiative, much like the central government's unified payment interface (UPI) for financial transactions, seeks to improve care and reduce costs across healthcare by creating a database of health records that will connect patients to a digital ecosystem with providers and payers.

ABDM's architecture, inspired by UPI, is unusual as the government seeks to serve neither as provider nor payer but as a store and clearinghouse for medical records. Under UPI, governmental systems aggregate the bank accounts of customers and sellers to enable zero cost (for the customer and seller) bipartite financial transactions. As a result, the growth in its adoption has been exponential.³ The intention is for ABDM to have a similar effect on healthcare delivery by removing barriers from, and reducing the cost of, healthcare data creation and exchange.

There are 1.3 billion Indians and while our healthcare activities are more complex than the financial transactions of UPI, a similar digitisation holds great promise. If, as is being rolled out, healthcare records can be linked with federated, interoperable, consent enabled “digital lockers,” it will give the patient's current provider instant access to their care histories across all providers to better inform clinical interventions.⁴

Payers could also benefit. Digitisation will catalyse the transition of insurance claims from the current lengthy process involving multiple parties into a nimble, instant, cashless underwriting. This should enable payer coverage to expand from infrequent secondary and tertiary interventions to primary care, where most healthcare expenditure occurs. As is happening in other countries, patients will have instant access to their records. This should empower them to make more informed provider choices.⁵

In the future, artificial intelligence will be able to use this digital bank to upgrade the scale and quality of care. India has a dearth of adequately skilled providers and data could upskill existing providers with contextual decision support at the point-of-care.⁶ Primary care could be revolutionised by highlighting data from patients' histories with relevant clinical protocols, destressing individual providers under pressure to treat many patients.

Since 2019 community health workers, who make up the majority of India's provider workforce, have been able to prescribe drugs and their ambit could be increased with appropriate data enabled safeguards.⁷⁻⁹ Algorithms will be able to use aggregated data not available to individual human providers to help patients initiate evidence based care through active monitoring and predicting provider outcomes such as surgical complications and in-hospital mortality.¹⁰⁻¹² At a population level, data will revolutionise public health by giving authorities real time information about the prevalence and spread of disease, enabling them to intervene efficiently in local geographies or risk stratified sub-populations.

Because of India's size and variegations, this endeavour will have challenges. Digitising data has a time cost that providers will be reluctant to pay for in a system where the average patient visit is as little as two minutes.¹³ Enforcing privacy in India is challenging and having all these data available in digital form increases the possibility that it may be misused. Despite high level political support for ABDM, health in India is under state (not federal) jurisdiction and so, as a player with limited leverage (Ayushman Bharat has only served 5% of its intended beneficiaries), the central government will have to incentivise state and private sector providers and payers to organise and participate in digitisation.¹⁴ Even if this is successful there are other cautionary tales from the UK, where the NHS is still wrestling with interoperability, and the US, which is yet to see complete interoperability despite “information blocking” having been legally prohibited.¹⁵⁻¹⁷

Healthcare has been neglected thus far in the seemingly inevitable rise of digital technology, but ABDM is an ambitious, public scheme whose time has come. Digitising health in the rest of the world

has been challenging and will be in India, too. But, as with the adoption of mobile phones, India could leapfrog other countries in healthcare digitisation by not repeating their mistakes.

Competing interests: SN leads Raxa Health, a social venture focused on digital health. Raxa Health's systems are connected to ABDM.

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