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Commentary

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In 2018, the Prime Minister announced the Ayushman Bharat scheme. With the promise of providing financial protection to 500 million poor Indians (Ayushman Bharat PM-JAY), and a robust primary care system (Health and Wellness Centers), it was a new day for Indian healthcare — the largest integrated effort of its kind anywhere in the world.

Let us hypothesise that it is the year 2030. A farmer living in a remote village in India, instead of having to travel many hours to reach a hospital in the city that is equipped to diagnose and provide treatments, only needs to visit his nearest health facility. His doctors readily access his medical records through an online digital locker, with due consent, of course. AI-guided tools accurately diagnose in seconds, doctors tele-consult with the country's top specialists for patients as drones deliver weekly medicines to their house. It is truly the future of healthcare.

While such radical improvements to the Indian healthcare system may have otherwise taken decades, a once-in-a-century healthcare crisis like COVID-19 has forced us to hasten this process. The pandemic has wreaked havoc globally, with the microscopic virus bringing many healthcare system goliaths to their knees. While India fared better than expected despite its supply gaps, its infrastructure and workforce shortages did show signs of fraying at the seams. As we reflect on the vastness, diversity, and variability of health systems

in India and abroad, it is imperative to ask — how can we build resilience in our health system for the future?

In India, the mission to accelerate Universal Health Coverage (UHC) has been underway as a priority. [“Achieve universal health coverage \(UHC\), including financial risk protection”](#) is a Sustainable Development Goal of the United Nations. In line with this goal, in 2018, the Prime Minister announced the Ayushman Bharat scheme. With the promise of providing financial protection to 500 million poor Indians (Ayushman Bharat PM-JAY), and a robust primary care system (Health and Wellness Centers), it was a new day for Indian healthcare — the largest integrated effort of its kind anywhere in the world. Notably, since its inception, PM-JAY has provided free treatment to more than 1.5 crore poor and vulnerable patients for secondary and tertiary ailments at more than [23,000 empanelled hospitals](#) countrywide. These impressive numbers are only the beginning as PM-JAY ramps up its services to more eligible beneficiaries.

The National Digital Health Mission (NDHM) is another critical intervention by the government to breathe new life into India’s digital health ecosystem. The NDHM is a unique mission, providing digital public good infrastructure for healthcare innovators to build upon. NDHM promises to be a breath of fresh air for solutions such as telemedicine, electronic health records, and longitudinal patient records. However, according to the 2018 National Health Profile, there is one government bed per 1,844 patients and one doctor per [11,082 patients](#). Furthermore, the “double burden” of disease — the coexistence of communicable and non-communicable diseases — complicates India’s co-morbidity profile. The success of these ambitious national healthcare initiatives will hinge on our ability to bridge our supply gaps for addressing our evolving healthcare burden quickly and effectively.

If necessity is the mother of invention, this crisis has been an incentive for innovation. India’s healthcare system is as vast as it is diverse. Healthcare is within the purview of states, making them the custodians of healthcare for their people. A federal structure allows the union ministry to guide states, but states’ capacities, priorities and on-ground realities govern the end outcome, due to which innovation adoption used to be a slow process. When COVID-19 struck, governments, often characterised as slow-moving bureaucratic machines, sprang into action and welcomed innovative solutions to improve their state capacity (their ability to deliver services in a timely and effective manner).

Within months, India built and launched a contact tracing app, Arogya Setu. Orders for innovative, made-in-India ventilators that prided upon being portable and economical began to be placed by various state governments. Drone companies partnered with state governments to test various use-cases such as monitoring adherence to social distancing rules, delivering medical supplies and even thermal imaging to check individuals’ temperatures. Some States also deployed innovative solutions such as tele-ICUs (remote monitoring of critical COVID-19 patients through a mix of remote-technology and ICU specialists) to bridge their specialists’ gap, especially in ICUs. Government hospitals also picked up innovations designed for remote monitoring of patients’ heart rate, respiratory rate, and oxygen saturation.

The cutting edge of emerging technology drove the gamut of innovations adopted by the public and private sector — 3D printed Personal Protective Equipment (PPE), AI chat-bots for improved and seamless information dissemination, AI-guided diagnosis, and clinical decision support. Fuelled by an urgent need to battle the crisis, innovative solutions found their place in crowded public health systems that

needed them most.

COVID-19 accelerated the push for innovation adoption to tackle existing challenges quickly by addressing critical supply challenges. India should now leverage this momentum and nurse it into a thriving, innovative healthcare system. One that addresses the actual needs on the ground, readily testing solutions on the ground with a clear path to adoption and serving as a feedback loop for academics, entrepreneurs, and other disciplines to come together and solve pressing medical challenges. India has made vast progress on various levels, but there is much room for further holistic policy development.

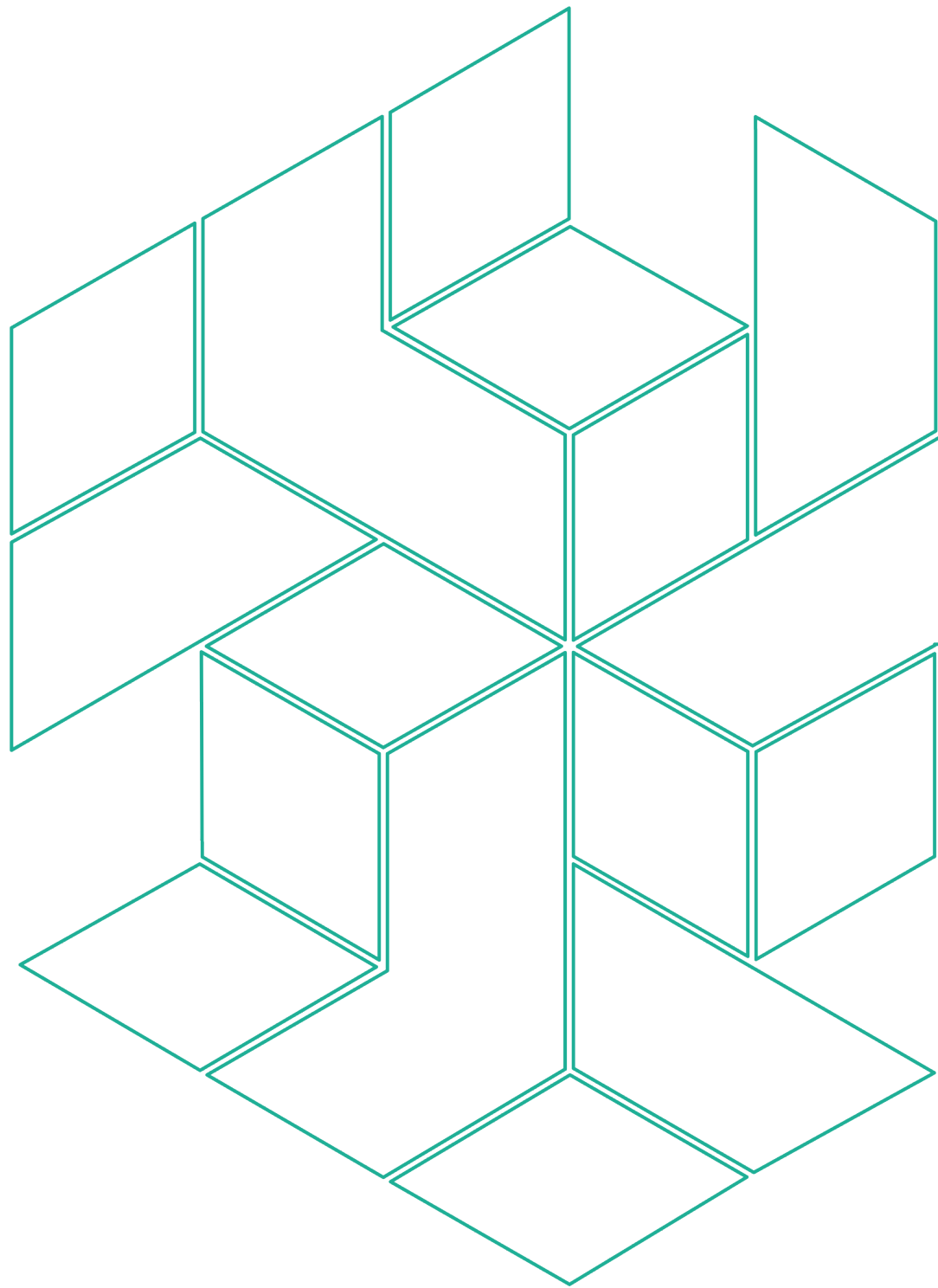
On the regulatory side, a holistic and mature regulatory framework for medical devices and digital technologies is necessary to provide confidence to clinicians and hospitals that innovations are safe to test. Novel inventions also face challenges in gathering enough credible evidence to demonstrate their effectiveness, leading to low trust among adopters and end up spending most of the funds on multiple pilot studies. A comprehensive and widely accepted system for generating evidence can rapidly establish a market for innovative solutions. In addition, these repeated pilot studies that innovators need to perform due to lack of widely accepted evidence put undue financial stress on innovators during the critical early phase of their commercial development. Indian venture capital funding must also ramp up significantly to bring a suitable quantum of funding to address the healthcare concerns of 1.2 billion people.

These challenges are varied but not intractable. COVID-19 demonstrated that in times of need, the priorities of public and private sector health providers, innovators, investors, researchers, and businesses could align quickly. Private sector initiatives such as ACT grants and the Swasth initiative, public sector initiatives such as the Department of Biotechnology's CAWACH and the NHA's Market Access Programme are working to offer the healthcare ecosystem much-needed modernisation. By aligning them with national priorities such as Ayushman Bharat and NDHM, innovations can improve access to affordable and high-quality healthcare.

Earlier this week, we celebrated World Health Day, which serves as a reminder that the 2030 vision mentioned above for the Indian healthcare system is within reach. This pandemic has been a good reminder that a thriving healthcare system must work for everyone, and with an innovation-friendly mindset, we can reimagine the future of health in India, not just for the most affluent but for all Indians.

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