Accelerating the scale up of health innovations for public health impact

The time is now for innovators to leverage the growing momentum and build solutions for greater impact



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Globally, over the last decade or so, we have seen tremendous focus on, and financial resources being put into, innovation in the health care sector. The intent behind this effort is that these new innovations – diagnostics, devices, digitally—enabled health services - have the potential to address previously unsolved health challenges at scale, save lives and do it affordably. In India too, financial resources, from the public and private sector, are being poured into the sector. 100% foreign direct investment is now allowed in medical devices. While this is a welcome trend, and investment in early-stage innovation is the need of the hour, it is equally important to address the challenges that stand in the way of scaling up innovative products – from the prototype stage to the market-

ready stage - where they can have widespread impact.

Shift from lab to market

First, innovators need a well-designed clinical validation study to generate good quality data proving the effectiveness of the solution. Second is the very critical step of operational validation to aid and inform its adoption by the user. It is also important to ensure that the product gets access to certified laboratories for performance and safety testing and meets national and global standards. Third, at different stages of the product cycle, optimal compliance to navigate the regulatory landscape for product manufacturing, and sale, including export, should be adhered to. Fourth, it is important to develop an understanding of the complex public health systems in the country's landscape along with developing an understanding of global markets. Fifth, at the right time in the development journey of innovation, it is important to conduct an adequate analysis of health economics and market dynamics for ensuring a sustainable business plan. This becomes crucial because, in many cases, the markets are not broken, and the government procurement agencies, donors, international agencies, and others who purchase these products, have different needs and constraints compared to consumers of other generic goods and commodities.

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While these ingredients are crucial for scale-up, the complexities involved in integrating and complying with them, often leave innovators feeling overwhelmed, and prevent even the best ideas from going beyond proof-of-concept stage. This happens because there is a lack of access to the specialized expertise needed to deftly navigate through these hurdles. On the other hand, in cases where such strategic planning and support to scale up and drive mass adoption has been given alongside product innovation- we have already seen great results.

Take rice fortification technology, a viable tool for addressing anemia that afflicts nearly 89 million children in India. It has taken consistent effort to establish efficacy – to date, more than 25 studies have assessed the nutritional potential of fortified rice – and once that was achieved, work was done to rapidly increase adoption worldwide at scale. This has meant working closely with public and private stakeholders to introduce, test, use, and scale fortified rice. Fortified rice is now currently being rolled out through the government's public distribution system in ration shops in India.

Similarly, Freeze Safe–a low-cost freeze-preventive carrier designed by PATH, which prevents vaccines from freezing is on the brink of global adoption. The innovation has shown the potential to address massive vaccine wastage. In order to speed up the carrier's



Neeraj Jain (right), demonstrating a promising technological solution- freeze preventive vaccine carrier. Photo: PATH

manufacturing and drive adoption at scale, the Freeze-Safe reference design was put into the public domain for any manufacturer to use it in their vaccine carrier products. PATH also provided technical support to different manufacturers to apply for World Health Organization (WHO) - Performance, Quality, and Safety (PQS) prequalification. Today, an Indian-made carrier has used the reference design and passed WHO's PQS laboratory tests for User Independent Freeze Prevention, which prequalifies it for use in global immunization programs.

PATH also played a key role in the testing and scaling up of various Integrated Digital Adherence Technologies (IDAT) at the national level to enable better data management through Nikshay-India's national TB program application. 99DOTs by Everwell is a wonderful example. (Requirements: Patients with mobile phone access): It is a real-time, low-cost solution for monitoring and improving medication adherence in a patient-centric way using envelopes wrapped around anti-TB medication.

PATH Diagnostics rapidly responded to fill diagnostic gaps during the global COVID-19 pandemic with laboratory-based activities to support diagnostic developers. This included establishing a COVID-19 biorepository with over 20,000 clinical samples for use in the development and validation of COVID-19

diagnostics as well as conducting in-house evaluations of new commercial rapid diagnostic tests to verify performance claims and fit-for-purpose testing in international settings.

The above-mentioned examples show how a strategic and carefully managed approach during an innovation's development journey can help it scale up for high impact. These best practices can be used for other innovations as well – particularly where high efficacy is well established, but the scale up challenge remains.

Take TrueNat , for example, which is a portable point of care machine with the potential to benefit thousands of TB patients in low resource settings by enabling efficient and faster diagnosis. There are still an estimated 300,000 missing TB cases in India, which is a big barrier for arresting the spread. TrueNat – developed by the Indian firm MolBio Diagnostics - can have a huge impact in this area.

Another promising digital solution is qXR by Qure.ai which is an artificial intelligence algorithm designed for use in a screening setup for chest X-rays. But to reap their benefits to the fullest, these have to be integrated into the public health system, and deployed in the private sector at scale where more than two-thirds of TB patients in India seek care and treatment. The seamless integration of an innovation in both the public and private sector health systems thus become necessary for real-life impact.

Time is changing

Some ground-breaking initiatives – the Pradhan Mantri Ayushman Bharat Health Infrastructure Mission (PM-ABHIM) and the 15th Finance Commission (XV FC) health grants and the Ayushman Bharat Digital Mission (ABDM) – are underway to irrevocably change the public health landscape in India. They put forth immense opportunities for innovations and technological interventions to firm up and be adopted by health systems.

As India strengthens its health ecosystem, make its health infrastructure pandemic ready and build digital structures for real-time health data, the public health policy environment in the coming years seems conducive to the introduction and rapid scale-up of innovative tech-related interventions. The time is now for innovators to leverage this growing momentum and build solutions for greater impact. And the expert system-integrating and not-for-profit platforms like the Impact Lab by PATH with expertise in bringing critical stakeholders together-governments, non-profits, private sector, and regulatory bodies and international organizations, can support innovators through a well-designed road map for their innovations to be adopted by health systems. ■

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