2018 INFUSE – CALL FOR INNOVATION

Leveraging digital technologies for registration, identification, digital record-keeping and follow-up to ensure healthier futures

Imagine a future in which all children have access to life-saving vaccines no matter where they live – a future in which parents and health workers ensure their timely vaccination, a future in which they have their own digitally stored health record that cannot be lost or stolen, a future in which, regardless of gender, economic or social standing, this record allows each child (and parents) to have access to a bank account, go to school, access services and ultimately build a prosperous life.

This future is possible today. With the latest advances in digital technologies that enable more effective ways to register, identify births and to issue proof of identity and authentication for access to services – we are on the brink of building a healthier and more prosperous future for the world's most vulnerable children.

These technologies can help the developing countries that Gavi, the Vaccine Alliance supports to accelerate immunisation delivery, ensure equity, drive efficiencies in health systems, and facilitate access to a broader range of social services and opportunities throughout children's lifetimes.[1]

In 2018, through INFUSE, Gavi is calling for proven innovations that leverage these digital technologies. The innovations should greatly enhance the efficacy of immunisation delivery, and modernise methods to identify and register the children who most need life-saving vaccines and who currently are being missed by legacy processes.

WHAT IS INFUSE?

Innovation for Uptake, Scale and Equity in Immunisation, or INFUSE, aims to identify proven solutions that, when expanded, have the greatest potential to modernise global health and immunisation delivery. INFUSE was launched by Gavi, the Vaccine Alliance at the World Economic Forum Annual Meeting 2016 in Davos.

Each year, INFUSE calls for innovations that can help Gavi, governments and partners reach more children with life-saving vaccines. INFUSE then works with expert partners to select the most promising innovations and "infuse" them with the capital, expertise and other support needed to scale them up.

By doing so, Gavi accelerates the speed at which developing countries can gain access to and increase appropriate technologies to modernise their health systems. INFUSE also works to attract and support innovations and organisations at varying levels of maturity to foster a healthy and vibrant immunisation innovation ecosystem that will shape the solutions of tomorrow.

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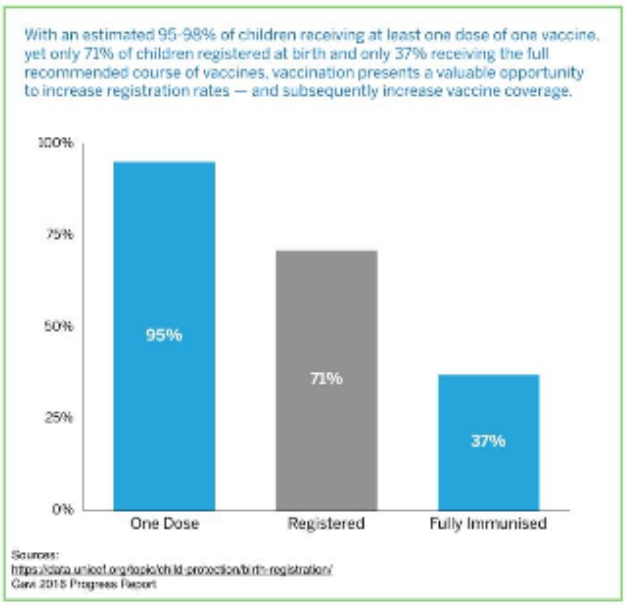
[1] Gavi considers developing countries in need of support to be those with a gross national income per capita below or equal to US$ 1,580 on average over the past three years (according to World Bank data published every year on 1 July).

THE CHALLENGE

Approximately 80% of children in Gavi-supported countries receive basic life-saving vaccines. No other public health intervention reaches more children and affects more families. Yet, 20% of children remain under-immunised, without the full set of basic vaccines, leaving every fifth child without even basic protection. And as regards comprehensive protection, only 37% of children in Gavi-supported countries receive the full recommended course of vaccines in their national immunisation programme, leaving many children exposed to numerous vaccine-preventable diseases.[2]



One reason for low coverage rates, and a common challenge in many developing countries, is that an increasing number of people live under the radar, invisible to the often outdated, paper-based methods used to certify births, deaths and marriages. The World Bank estimates that nearly 1.1 billion people worldwide, including one in three children aged 0–5 years, lack any proof of identification.[3] These children and adults do not officially exist because their births were not registered. Without the means to prove who they are, it is very difficult – often impossible – for these individuals to access necessary services, leaving them marginalized. Furthermore, without accurate population registries, public organisations struggle to broadly and accurately deliver the most basic human services, including enumerating or baseline populations for service delivery. Additionally, there are gender implications: if a mother is not registered, her children, especially girls, are far less likely to be registered as well; creating a vicious cycle of official invisibility, lack of opportunity and poverty[4].

Addressing this challenge requires harnessing efficiencies in immunisation delivery and transformative innovations at scale. Digital technologies that enable more effective identification and registration are increasingly a foundational building block to drive these efficiencies, and a valuable tool to ensure that the right children receive the right vaccines, at the right time, in the right place.

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[2] Gavi, *Annual Progress Report 2016* (http://www.gavi.org/progress-report/)
[3] The World Bank, Identification for Development (http://www.worldbank.org/en/programs/id4d)
[4] How can we strengthen CRVS systems as a means to improving gender equality? (https://sustainabledevelopment.un.org/content/documents/11006SideEvent-Summary_CRVS-Systems.pdf)

THE OPPORTUNITY

In many developing countries, the most common form of identification for children is a health card, not a birth certificate. Indeed, an estimated 95–98% of children receive at least one vaccine dose, and with that vaccine they receive a paper-based child health card. The near ubiquity of these documents presents an enormous opportunity and is just one example of the promise of digital technologies, such as a *digital* health card.

According to the ID2020 Alliance – a public-private partnership that includes Gavi – the use of digital health cards for children could directly improve coverage rates by ensuring a verifiable, accurate record and by prompting parents to bring their children in for a subsequent dose.[5] From the parents' perspective, digital records can make it convenient to track a child's vaccines and eliminate unnecessary paperwork. And as children grow, their digital health card can be used to access secondary services, such as primary school, or ease the process of obtaining alternative credentials. Effectively, the digital health card could, depending on country needs and readiness, potentially become the first step in establishing a legal, broadly recognised identity.

Looking beyond the child health card, and from the perspective of health workers, digital technologies can streamline analytics and outreach without adding significant complexity to the workflow. From the perspective of international partners, digital technologies also provide a basis for verifiable proof and accurate, aggregate data that can easily interoperate with other identity management systems, negating the need for each organisation to independently identify beneficiaries.

For registration purposes, biometric-based devices are routinely used to capture the fingerprints or irises of adults. But the biometric tools currently in use have limitations: high-accuracy infant biometric devices do not yet exist, biometric devices are often not designed for low-connectivity environments or built to withstand wear-and-tear, and the devices must provide low-cost ways for individuals to biometrically authenticate themselves.
Once authenticated, both parents and adolescent children need mobile applications – and digital tools that are not smartphone dependent – to access their immunisation and identity data. Health workers require systems to send targeted notifications for follow-up doses, as well as systems that can analyse aggregate data to identify coverage and equity trends, map population data and inform policy-making.

Additionally, innovations are required to help countries transition from paper-based to digital records. Many of these solutions must be capable of working in poorly resourced settings in the developing countries Gavi supports – for example, where there is no reliable electricity – and of helping to leapfrog current approaches to reach everyone in a sustainable manner, whether they live in remote villages or urban areas.

Innovations such as those mentioned above and below address certain key system barriers to driving coverage in immunisation but can also address inequities more directly related to gender, education, income, social class and geography, which are often among the underlying factors that undermine immunisation coverage.

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[5] The ID2020 Alliance (http://id2020.org/)