Sharing EIR experiences to strengthen immunisation programming for the future

Key takeaways from a Linked workshop held from 23-25 July 2024

The Linked Immunisation Action Network hosted a workshop from 23–25 July 2024 in Jakarta, Indonesia, on designing and managing electronic immunisation registries (EIRs). Led by the Institute for Health Policy with support from Results for Development, this dynamic workshop brought together delegations from five middle-income countries (MICs), with Ministry of Health representatives from Bhutan, Indonesia, Guyana, Uzbekistan, and Vietnam. Country and regional partners from the CDC, UNICEF, WHO, and the World Bank also participated alongside independent experts Kate Wilson, Henry Mwanyika, and Dr. Nihal Abeysinghe. With minimal formal presentations and a focus on facilitating collaborative learning through the sharing of experiences between peer countries, this workshop was highly interactive and aimed to foster peer-to-peer discussions and practical knowledge sharing.

The workshop's objectives were to:

- Understand participant countries' EIR system status, challenges, and successes.
- Facilitate experience-sharing through guided discussions.
- Provide a platform for countries to showcase their EIR systems, discuss future plans, and receive peer feedback.
- Enable participants to develop plans to adapt and apply new learnings to improve immunisation outcomes in the near to medium term.

At the workshop's onset, country representatives led and participated in small, interactive country briefings, rotating through the room to build connections and a greater understanding of current challenges and aspirations. While the participating countries were at different stages of EIR development, this movement-based "country walk" approach proved effective in building trust and fostering in-depth peer discussions. Below is a summary of each country's EIR status as of July 2024.

- **Bhutan** has multiple EIRs in place—DHIS-2, the Bhutan Vaccine System (BVS), and the Electronic Patient Information System (ePIS)—and wants to learn how others have integrated competing and overlapping project-level systems. Bhutan has selected ePIS to be its primary, comprehensive EIR and was interested in how others have integrated the backend systems and linked EIRs to their vaccine supply chains.

- **Guyana** is at a more formative stage - currently transitioning from a paper-based system to an EIR and now piloting a web-based interface with clinics. The team was interested in learning how other countries managed the paper to digital transition and encouraged health workers to switch from paper to digital. They were also interested in how other countries have worked with private sector health facilities to gain buy-in and maximize EIR adoption across all providers.

- **Indonesia**'s EIR strategy is quite mature. The country developed a nationwide platform - Satu Sehat (Healthy One) for routine immunisations, which combines data from electronic medical records (EMRs) used by healthcare facilities, the SMILE application used for vaccine logistics, and the ASIK mobile app used during community outreach. The Satu Sehat platform covers immunisation as well as other facets of the Child Health Record. While widely operational, the country's geographic and linguistic diversity means that scaling the system to reach everyone continues to be a challenge. Indonesia wanted to learn from other countries how they tackled improving the accuracy of their coverage denominator through integration with a national ID, how to improve extended community health outreach for catch-up vaccinations, and how to improve the usage of Satu Sehat across the archipelago.

- **Uzbekistan**, similarly, is quite mature with an EIR that already integrates with the national civil registration database and functions as the main national immunisation information system. Now, they are focused on extending this integration with other national systems and are developing an EIR 2.0, with UNICEF support. They were interested in learning new regulatory and integration strategies at the policy and technical levels, as well as how to attract financing from external funders.

- **Viet Nam** also has a locally developed National Immunisation Information System (NIIS) used across all nationally funded immunisation facilities; however, they face challenges with backend system integration, particularly private health care providers and school records, exacerbated by the absence of a common identifier. They wanted to learn ways in which they could improve data quality through backend system integration and improved data entry. They were also interested in learning about strategies for improving data management and reducing data duplication in the NIIS.

Several recurring **common challenges and areas for future learning emerged,** including:

1. **Unique identifiers for whole-of-life tracking:** Integrating existing national identifiers into EIR systems or managing an EIR when a national identifier does not exist. This is a foundational issue, as a country's ability to identify the population to be vaccinated (the denominator) is critical to planning, implementing, supplying, and following up on campaign and routine immunisations to achieve coverage targets. In October 2024, Linked held a webinar on this topic featuring Estonia and Thailand's experiences to support countries' efforts to address this issue; the **full webinar can be viewed on our website [here](#)**.

2. **System integration across sectors:** In most countries, multiple competing systems exist, and countries seek strategies to efficiently integrate systems, including non-health sectors and private healthcare service providers. Furthermore, every participating country continued to maintain paper-based records in addition to their digital systems, which they aim to phase out as the EIRs become more accessible, accurate, and secure. Solving these integration challenges will be key to reducing data duplication, improving data quality, and reducing the data entry burden on healthcare workers - which all five countries are focused on.

3. **IT training and capacity building:** A key challenge identified was training and capacity-building-to strengthen digital literacy and ensure the EIRs' successful implementation. Most of the countries still face EIR adoption issues, particularly in more remote areas where there are still requirements to enter data in paper and digital systems. Administrators need to identify strategies that demonstrate how the EIR saves time and makes healthcare workers' lives easier.

4. **Internet connectivity and infrastructure:** Participants highlighted poor internet connectivity and infrastructure as practical limitations, particularly in rural areas. Similar to the challenge listed in (3), this can de-motivate health workers to adopt and consistently use the EIRs.

Throughout the three days, participants engaged in group discussions and breakout sessions, where countries described current challenges they were experiencing, and peers offered their insight and advice. The following topics, selected from participant prioritisation, formed the basis of these discussions:

- Developing the policies and technical infrastructure to scale EIRs nationally and efficiently manage them, including working with policymakers, developing roll-out strategies, and fully transitioning to digital systems without the need for paper-based documentation.
- Integrating EIRs with other health information systems and non-health systems, including using and integrating unique national IDs, establishing data standards, integrating with private sector providers, and ensuring adaptability to facilitate the addition of new features over time.
- Improving data accuracy, quality, protection, and use, including techniques for reducing data duplication, training and policies to improve data quality, and tactics to improve data.

On the second day, participants had the opportunity to visit one of two local health centres or "Puskesmas" to understand how data is collected and analysed in Indonesia's EIR. The field visit featured presentations that explored how the ASIK, SMILE, and Satu Sehat applications are used to improve immunisation coverage and described the outreach processes used to reach zero-dose children. Participants also visited an immunisation service room to observe the data entry process and the healthcare centres' vaccine storage to learn how immunisation supply management and logistics are integrated with their EIR. Finally, mothers from the local community shared their experiences using the immunisation app and how it has helped them as caregivers. New learnings and good practices were discussed by the participants on their return, focusing on practices that could be adapted and implemented in home countries, and suggestions offered for further improvement of the Indonesian system.

Following breakout discussions during the morning of day three, participants reflected on the workshop to identify learnings that can be applied in their home country. With the support of partners, country teams developed realistic and feasible action plans with detailed activities and outcomes. Each country presented their action plan for peer feedback.

Distilling areas identified in the action plans and reflecting on discussions, the **following topics emerged as key takeaways** from the workshop:

1. **Unique identifiers**, including the various options, workarounds, and their importance in terms of ensuring data quality and completeness, reducing data duplication, ensuring complete registration to reach zero-dose children, and problems around including children immediately after birth when national identifiers may not have been issued and/or the national system cannot identify children.

2. **Interoperability of EIRs with other health and non-health systems** and the "whether" and the "how to" of implementing this, including different strategies and discussions on how to build consensus with other departments or ministries to integrate systems and put in place ongoing policies.

3. **The importance of staff training and capacity building**, including challenges in getting healthcare workers and private providers to enter data or use the EIR system, including issues of low IT literacy levels among healthcare workers and practical issues with internet connectivity and resources.

4. **Data quality and protection**, and how this is crucial to stakeholder and public buy-in; some participants primarily thought of data security, while others were more interested in legal constraints around personal data protection.

5. **Using EIR data to improve immunisation programs and coverage** by ensuring data is available in a format that is useful for decision makers (e.g., informative and intuitive dashboards), and which does not exclude or ignore the marginalised.

Overall, countries developed a common understanding about how, when working together, they could each strengthen their respective EIRs. The partners also appreciated the collaborative approach, sharing that the workshop deepened their knowledge of country challenges and provided a good basis for them to apply when working with these countries and others in the future.

We are grateful for the active participation and collaboration from all participants, which allowed the workshop to be country-driven and responsive to current needs. We hope that the connections established during the workshop will form the basis for a lasting cohort of immunisation professionals around the globe.

For those of you who did not attend the meeting, the **presentations can be found [here](#)** on our website. If you are interested in learning more about a specific theme or country experience discussed during this workshop, please let us know!