Digital Transformation of Immunisation

Gavi, the Vaccine Alliance

Digital Health Information Strategy 2022-2025

Facilitated by HealthEnabled

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Gavi The Vaccine Alliance

Acknowledgements

For the past three years, Gavi, the Vaccine Alliance has engaged in an extensive participatory prioritisation and strategy development process. Many organisations and individuals have participated in facilitated working sessions, document review, evidence synthesis, prioritisation exercises, consultations, and workshops.

This effort has drawn on the tireless commitment of professionals at all levels of the health system who have tried, tested, evaluated, and learned from applying digital health information to achieve improved immunisation coverage and equity and overcome common challenges like unreliable denominators and loss to follow up. In particular, the Gavi Secretariat is grateful for the active participation of the Technical Committee members comprised of representatives from the WHO, UNICEF, U.S. CDC, Johns Hopkins University, the Bill and Melinda Gates Foundation, AeHIN, Health Informatics in Africa – HELINA and GaneshAid.

Seventy-three (73) individuals from 23 organisations representing immunisation and digital health policymakers, implementers and stakeholders provided input and contributions to this strategy development process as workshop and focus group participants, key informants and technical reviewers.

In addition, this first Gavi DHI Strategy greatly benefitted from the opportunity to apply the priorities and proposed approaches as part of the full portfolio planning processes in Cambodia, Central African Republic, Ethiopia, and Nigeria through a strong collaboration with UNICEF HQ, UNICEF Regional Offices, and UNICEF Country Offices under the leadership and guidance of Alex Muhereza and Remy Mwamba.

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As part of Gavi, The Vaccine Alliance's efforts to monitor the use of our digital health information resources and to gather recommendations to improve them in future versions, we have set up a dedicated e-mail DHI@Gavi.org. Please let us know what you have found useful and what we can do better in the next iteration. Thank you!

Acronyms

AEFI	Adverse events following immunisation
COVID-19	Coronavirus disease 2019
CSO	Civil society organisation
DHI	Digital health information
EAF	Equity Accelerator Funding
eLMIS	Electronic logistics management information system
EPI	Expanded programme for immunisation
FPP	Full Portfolio Planning (Gavi)
Gavi	Gavi, the Vaccine Alliance
GIS	Geographic Information System
HHS	Health Systems Strengthening
IRMMA	Identify, Reach, Monitor, Measure, Advocate
MEL	Monitoring evaluation and learning
MOH	Ministry of Health
SCM	Senior country manager (Gavi)
SFA	Strategic Focus Area
TCA	Targeted Country Assistance
UNICEF	The United Nations Children's Fund
VPD	Vaccine preventable disease
WHO	World Health Organisation

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Executive Summary

The aim of the first Gavi Digital Health Information (DHI) Strategy is to articulate a collective vision for the digital transformation of immunisation information systems as an entry point and foundational investment in digital health and data systems for primary health care and to identify how Gavi, the Vaccine Alliance will align and support DHI priorities and relevant enablers to achieve the Gavi 5.0 objectives leveraging Gavi levers.

The vision draws on early evidence that shows that DHI contributes to increased immunisation coverage, equity, and efficiency and builds on the case for DHI for immunisation in its ability to improve 1) planning and forecasting with increased identification and registration and entry of children into the primary health care system, 2) community engagement and social accountability, 3) service delivery, 4) monitoring, and 5) advocacy and action.

The Gavi DHI Strategic Vision is **digitally transformed, integrated, equitable, gender-intentional national information systems that identify and reach zero-dose and under-immunised children through improved access, quality, and efficiency to accelerate country immunisation objectives in line with Gavi's mission to leave no child behind with immunisation.**

It is supported by four prioritised outcomes, namely:

1. **Increased catalytic investment** – building on and contributing to global, regional, and national DHI initiatives and enablers using immunisation as a pathway to equitable primary health care (PHC).

2. **Coordinated support for enablers** – to strengthen capacity and sustainability for effective design, implementation, and monitoring of DHI interventions.

3. **Scaled and integrated priority DHI interventions** – within and across countries aligned to Gavi 5.0 Strategic Goals

4. **Improved programming and decision-making** – for identifying and reaching zero-dose and under immunised children through effective use of data for planning, service delivery, and monitoring.

The Strategy is based on a prioritisation effort that identified six DHI intervention area most aligned to the achievement of improved immunisation outcomes

and overcoming common immunisation programme challenges. These are:

1. Identification and reach of zero-dose and under-immunised children through geospatial applications, digital maps and micro-plans, satellite identification of settlements and community e-registry

2. Digital supply chain information systems (eLMIS) with timely data visibility, triangulation and use at service delivery points and national/subnational levels

3. Real-time planning and monitoring of immunisation campaigns through timely reporting, insightful dashboard, coordination, and communication

4. Effective sub-national data use through improved data triangulation, dashboards, visualisation, mechanisms to aid decision-making and systems interoperability

5. Digital interventions supporting vaccine confidence and demand for immunisation that help build trust and enhance engagement in support of children, their caregivers, communities, health workers and health systems

6. Electronic VPD surveillance data exchange for targeted vaccination and outbreak response with timely data capture, sharing, analysis, visualisation linked to decentralised testing data

Alongside prioritised digital health information interventions the Gavi strategy highlights the need for investment in digital health enablers, such as infrastructure, capacity, and governance; gender analyses, planning, and monitoring gender-intentional activities; and leveraging and transition of successful DHI interventions for COVID-19 to routine immunisation.

It also clarifies Gavi's strong comparative advantage and ability to influence the global agenda, convene multiple partners, including civil society organizations (CSOs) and the private sector, for coordinated action, provide a country-needs perspective, leverage financial resources and end-to-end funding pathways, and take advantage of the division of roles between the Secretariat and the Alliance. The Strategy provides guidance on what Gavi ought to stop doing – including project-specific support that creates silos and duplication, what it should continue doing - namely

scaling up of proven interventions, and what it should start to do - systematically track investments in DHI, documenting lessons learned and developing case studies.

Gavi's DHI Strategy aims to support appropriate solutions that are guided by the country immunisation strategy and programme, while strengthening the enabling environment and building on foundational investments to achieve scale and support the sustainable growth far into the future. The operational plan provides direction and coordination for specific activities at global and regional levels to align investments towards the collective vision for the appropriate and sustainable digital transformation of immunisation. A draft Gavi DHI Strategy was tested in Cambodia, Central African Republic, Ethiopia, and Nigeria to provide insight into how well the overall vision, mission, outcomes, and proposed activities would translate into action at the country level. This has led to the reframed approach to engage countries not in the development of Gavi DHI Country Costed Roadmaps, but rather National Digital Health Information for Immunisation Roadmaps that can guide overall investments and specific funding and technical support requests to Gavi. It also cultivated a more holistic approach to digital transformation of immunisation by matching prioritised DHI interventions to specific immunisation program needs. This translated into the building on existing investments in immunisation and the broader primary health care service delivery system.

The strategy is supported by an operational plan that includes global and regional activities estimated at $32 million USD. These investments support the development of tools and resources, provide technical assistance, and monitor and evaluate investments through some Gavi Strategic Focus Areas (SFAs) and Alliance members to strengthen the adoption and use of DHI priority interventions and enablers at the country and regional levels. At the country level, the strategy does not come with dedicated funding but provides a much-needed framework for how to optimise existing Gavi levers (cash grants, technical assistance, partnership) and country advocacy for DHI transformation.

A National DHI for Immunisation Costed Roadmap Toolkit has been developed to provide guidance on how to translate this strategy into action, by supporting countries to prioritise and cost interventions, enablers, and gender-related activities in a way that is aligned to the immunisation and digital health strategies and maturity of the country.

The overall impact of the strategy will be measured through a monitoring approach to document and assess allocation to, implementation of, and evaluation of targeted DHI interventions, enablers, and gender-intentional activities with prioritised research and learning agenda initiatives to contribute to the evidence base for digital health.

Through this strategy, Gavi is well positioned to leverage its convening power to bring immunisation and DHI stakeholders together at global, regional, and country level to ensure no child is left behind with immunisation through more effective engagement and coordination of digital transformation to promote greater scale, sustainability, and equity.

Background

For over 20 years Gavi, the Vaccine Alliance, has provided life-saving vaccines to more than 800 million children in 77 of the poorest and most vulnerable settings in the world. This undertaking is only possible through partnership with national immunisation programmes, the government institutions that ensure the safe and coordinated delivery of vaccines to health centres, mobile outposts, hospitals, remote villages, and urban neighbourhoods so that children in every corner of every nation have access to lifesaving, effective vaccines that protect them from infectious diseases throughout their lifetimes.

For the past six years Gavi has been building and supporting implementation, capacity, and investment in digital health information, with an internally calculated estimated USD $360 million invested during the previous strategic period (4.0) to increase data availability and use through complementary funding streams that contributed to the adoption of data approaches at the country, global or regional levels. Over time, Gavi investments focus more on digital health information and the systems and technologies that enable countries to strengthen data use for planning and monitoring immunisation programmes. Approximately USD $120 million of Gavi's data investments during 4.0 helped support 40 countries to adopt, test or scale-up at least one digital health information system. Much of this investment enabled countries to digitise paper-based systems,

strengthen and integrate national and subnational reporting systems. In the past 3 years intense focus on foundational tools, resources, evaluation, research, guidance and learning have advanced the evidence base and documentation of successful approaches for digital tools and technologies in support of immunisation programming.

Digital health information (DHI) can increase the access, reach, quality, and efficiency of immunisation programmes with systems to help manage the data and information necessary to effectively deliver vaccines to all children, monitor progress towards complete vaccination coverage, identify areas for targeted improvement and use resources more efficiently[1]. The evidence is summarised below and has been documented throughout the strategy development process in a series of technical briefs, landscaping reports, and resources.

The aim of the Gavi Digital Health Information (DHI) Strategy is to articulate a collective vision for the digital transformation of immunisation information systems as an entry point and foundational investment in digital health and data systems for primary health care and identify how Gavi, The Vaccine Alliance will align and support DHI priorities, relevant enablers, and gender-related activities to achieve the Gavi 5.0 objectives leveraging Gavi levers.

Figure 1: DHI Strategy Alignment

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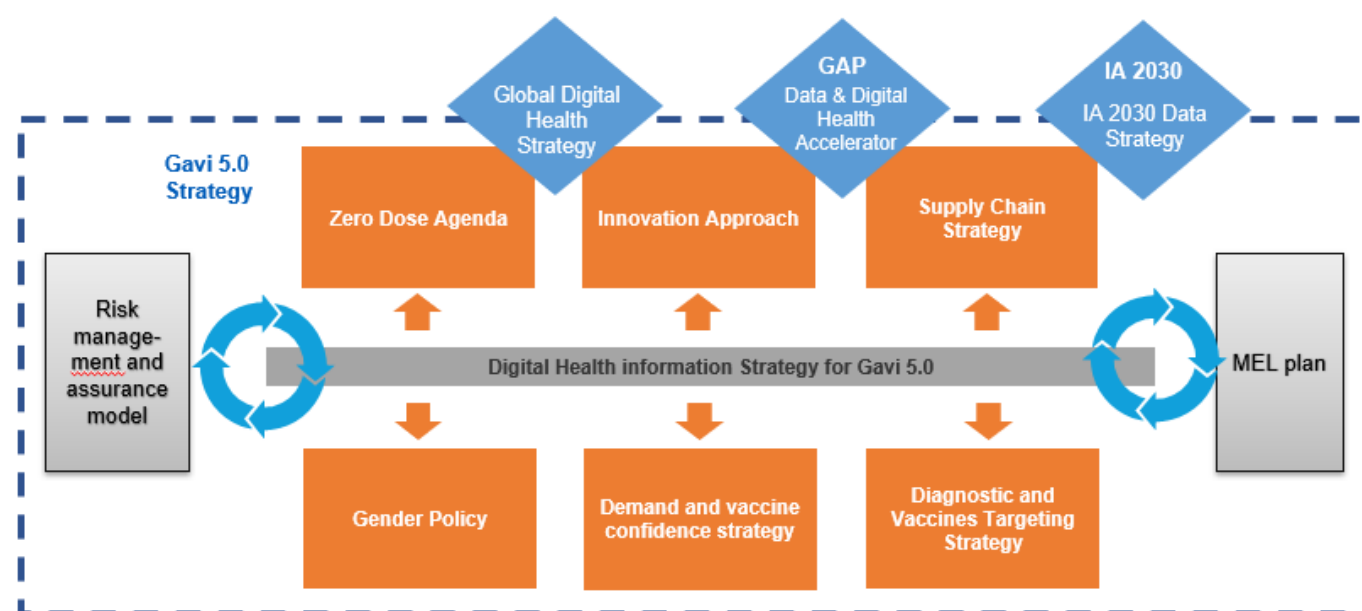
1 See Gavi Digital Health Information Strategy Technical Brief Series for more evidence and background

This Digital Health Information (DHI) Strategy is the result of three years of stakeholder consultation (funders, governments, private sector, NGOs, and CSOs), prioritisation, documentation, evidence reviews and field testing in five countries with peer-review and refinement at each stage. The development process identified the most promising and effective digital health information interventions and enablers to help national immunisation programmes achieve their priorities and overcome their challenges. The DHI Strategy is one component of the larger Gavi 5.0 Strategy and in support of other data-related and immunisation-focused global initiatives (see Figure 1: DHI Strategy Alignment). The digital health interventions included in this Strategy already play a role across national immunisation systems supported by Gavi with 40 countries receiving direct support from Gavi for strengthening and support in these areas. The DHI interventions are widely encouraged for funding in Gavi's new programme funding guidelines[2]. The spread and accessibility of digital health information will only increase in reach, utility, and coverage in the future. The DHI strategy is aligned to and a major contributor of the Gavi's Innovation Approach[3] that builds on its history and unique positioning as the main funder for scaling up immunisation interventions and where the Alliance will focus on scaling up clearly proven and innovations in Gavi-supported countries including the prioritised DHI interventions and their enablers.

The DHI Strategy has been designed to align and reinforce global efforts including the Immunisation Agenda 2030's Data Strategy (see more details below) and the Principles for Donor Alignment in Digital Health. Gavi has an important role to play in ensuring there is a strong market of digital solutions available to countries to support their immunisation programmes. Building on Gavi's experience with improving immunisation aspects of national health information systems, including DHIS2- recommendations have been made to sustain and/or expand this experience to other Digital Health Global Goods, while supporting country leadership and ownershipand being tool agnostic.

In addition, it has been advised through various consultations that Gavi ought to stop, start, and/or continue specific activities in support of DHI for immunisation.

Box 1: Prioritised activities for Gavi to establish, continue & increase, and stop

- **Establish** a unified Gavi Alliance vision for DHI in coordination with other donors/partners
- Systematically track Gavi investments in DHI, document lessons and case studies
- Dedicate necessary funds and human resources for DHI
- Support national digital health enabling environment and data governance structures

- **Continue & increase** scale-up of proven approaches
- Adapt and tailor DHI investments to country context, needs and priorities
- Coordinate with national technical bodies and working groups
- Communication, cooperation and sharing across Alliance members

- **Stop** project-specific support that creates silos and duplication
- Support for approaches too complex for a country's needs or capacity
- Spreading DHI investment too thin
- Support for solutions that are technology-driven
- Focus only on new innovations and pilot projects

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2 https://www.gavi.org/sites/default/files/support/Gavi_Programme_Funding_Guidelines.pdf
3 See PPC Paper May 2022 https://www.gavi.org/governance/gavi-board/committees/programme-and-policy-committee/minutes

Gavi's Comparative Advantage

Donors, implementing partners, private sector, and CSOs recognise Gavi's pivotal role in DHI and see the sustainable digitisation of national immunisation programmes as an entry point for coordinated investment in primary health care and advancement towards universal health care. The consultative process that is integral to this strategy development identified where Gavi, the Vaccine Alliance is uniquely positioned as an alliance to provide leadership and coordination to digital health in primary health care.

Strategic Lenses – Country Segmentation, Gender, and Covid-19 Innovations

The strengthening of digital ecosystems and implementation of DHI interventions takes place within the context of local and global social and political influences. These contextual dynamics are often specific to a particular history, culture and local norms and must be considered when providing support to any national immunisation programme. Three key areas that play a major role in every Gavi-supported country today have been identified to shape the development and implementation of Gavi's DHI Strategy. These Strategic Lenses- namely country segmentation, gender, and Covid-19 innovations

provide a perspective through which all aspects of the DH Strategy development process, country piloting, review and revisions have been viewed. These have been documented in the formative development phase in three complementary technical briefs.

A tailored and segmented approach to country support

Countries that receive Gavi support are low-resources settings representing a wide range of immunisation programme bottlenecks and challenges, technology infrastructure foundations, experiences, and digital maturity. To support such diverse needs and also provide guidance and promote meaningful progress for 57 different national contexts, the DHI Strategy includes a segmented approach, a framework that Gavi, partners and stakeholders can use to help countries prioritise digital health information interventions. The segmented approach provides the flexibility to support each country based on the segments of country it is within the Gavi context (high impact, fragile, core priority, and core standard) acknowledging the various level of maturity of the DHI interventions and enablers in each supported country. It is operationalised as part of the proposed national digital health for immunisation costed roadmap development process.

Box 2: Gavi's Comparative Advantage in Digital Health Information

Convening power, voice, coordination, and connection
Gavi has considerable convening power, the ability to bring stakeholders together, make connections, coordinate efforts at a global, regional, and national level and advocacy power to encourage coordinated DHI investments.

Country perspective
Gavi's work is grounded in country issues and country needs as well as country maturity level, providing a deeper understanding of priority areas and opportunities to support country health systems with DHI solutions with a focus on creating a pathway to equitable primary health care.

Influence & financial leverage
Gavi has power to set the immunisation agenda and the ability and moral persuasion to set priorities for other agencies and the private sector and to encourage coordinated investment in vital health and data standards as a condition for country investment.

Catalyse & Scale
Gavi is seen as a trailblazer and catalyst for scaling digital transformation by bringing proven approaches to operational scale in multiple settings.

End-to-end Gavi funding pathway
Gavi can align funding streams at all levels to support efficient funding of DHI priorities. Direct country support mechanisms, global and regional funding to Alliance and Expended Partners to enhance learning, support standard adoption, innovate and shape regional hubs of experts, Private Sector Partnership and CSO partnership to scale and sustain DHI.

Secretariat / Alliance
The division of roles and cooperation between the Secretariat (providing investment guidance, influence, and immunisation focus) and the Alliance (providing technical guidance, intersectoral agenda).

Figure 2: Case for Investment in Digital Health Information for Immunisation
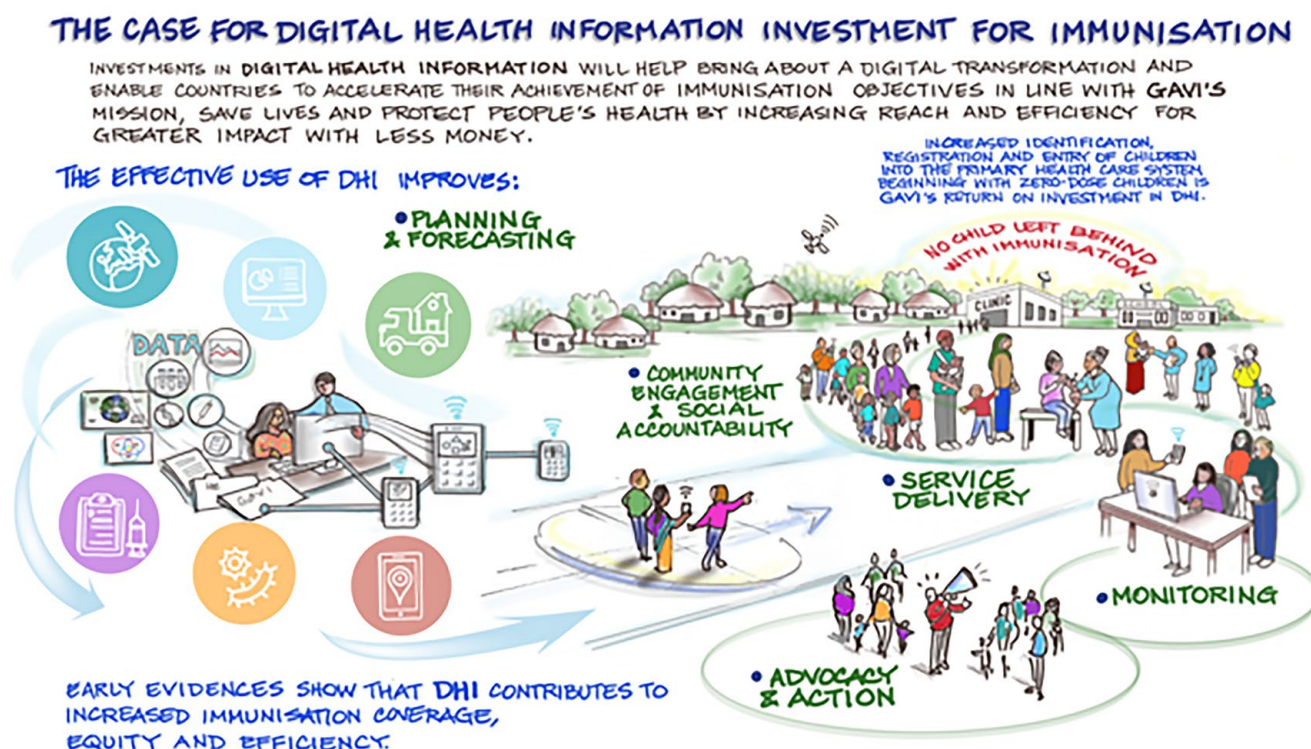
Gender dynamics impact participation in digital health

The intended use of digital health information and tools is influenced by the growing gender digital divide but also gender norms in the health workforce, access to technology and digital literacy among clients and caregivers, and the collection and use of data that perpetuate gender inequities or can be a powerful tool to shine a light on gender-related barriers and suggest areas for improvement. Gavi recognises the importance of a gender-intentional lens that incorporates the full spectrum of gender and sexual diversity and an intersectional gender approach where factors such as age, location, education, socio-economic, sexuality are included to ensure that all digital health and data interventions for immunisation are inclusive, equitable and deliver the full course of life-saving vaccines to every child. A gender-intentional approach is mainstreamed throughout the DHI Strategy, including guidance and tools for countries to include gender analysis and gender-intentional approaches for all stages of DHI planning, implementation and monitoring. Many countries programmes do not systematically account for the gendered experiences that impact access, uptake and demand of immunisation services or openly recognise diverse gender identities and sexual orientations. The gender-intentional approach aims to *'move the needle'* on gender analysis and programming while at the same time not provoking stigma and discrimination against any gender identity group. Activities to guide this process have been proposed as part of the national digital health for immunisation costed roadmap process and prioritised within the monitoring, evaluation, and learning (MEL) plan.

Learning from COVID-19 innovations and digital applications

The COVID-19 pandemic and vaccine roll-out have created new opportunities, interest, and applications of digital tools in response to the global health emergency. Many countries have adapted existing digital health information technologies or developed new ones to facilitate the planning, delivery, and monitoring of COVID-19 vaccines for improving stock visibility, tracking vaccine recipients, understanding community demand, and generating vaccine certificates. The Gavi DHI Strategy builds on successes and lessons learned from COVID-19 innovations and digital applications to harness applicable innovations for strengthening routine childhood immunisation programmes in a sustainable and resilient manner. At the country level, Covid-19 has facilitated many countries to engage with private sector and CSOs to rapidly scale up digital health interventions in an unprecedented manner. Many are keen to build on that momentum by transitioning and integrating those platforms into routine immunisation.

Case for Digital Health Information for Immunisation

The careful and inclusive efforts that led to the development of this Strategy together with partner and country experiences demonstrate that investments in digital health information will help bring about a digital

transformation and enable countries to accelerate their achievement of immunisation objectives in line with Gavi's mission, save lives and protect people's health by increasing reach and efficiency for greater impact with less money.

The case for DHI for immunisation highlights the ability of digital health information to support the identification, registration, and entry of children into the primary health care system beginning with zero-dose children. It supports this integrated approach through improved **1) Planning and forecasting** at national, sub-national, and facility level to improve reach and efficiency of routine and campaign activities; **2) Community engagement and social accountability** to increase vaccine confidence and demand; **3) Service delivery** to optimise quality, efficiency, availability, and access to immunisation services; **4) Monitoring** to ensure that the supply of vaccines and related services increases, sustains, and meets the demand for vaccines; and **5) Advocacy and action** through data visualisation to increase transparency, accountability, performance and coordinated investment. It draws on early evidence that shows that DHI contributes to increase immunisation coverage, equity, and efficiency. By investing opportunistically in prioritised digital health interventions and enablers throughout the Gavi 5.0 Strategic period, Gavi will accelerate the identification and reach of zero-dose and under-immunised children and realise a return on investment - lives saved and people living longer and healthier lives - with greater cost-efficiency than what is possible without the added value of digital health information.

Prioritisation of Digital Health Interventions for Immunisation

The foundational groundwork and assessment of country needs identified six areas of prioritised digital health information that show the most promise for real and lasting improvements in immunisation programmes to increase the identification, registration, retention, and complete vaccination of children. These are:

1. Identification and reach of zero-dose and under-immunised children through geospatial applications, digital maps and micro-plans, satellite identification of settlements and community e-registry

2. Digital supply chain information systems (or eLMIS) with timely data visibility, triangulation and use at service delivery points and national/subnational levels

3. Real-time planning and monitoring of immunisation campaigns through timely reporting, insightful dashboard, coordination, and communication

4. Effective sub-national data use through improved data triangulation, dashboards, visualisation, mechanisms to aid decision-making and systems interoperability

5. Digital interventions supporting vaccine confidence and demand for immunisation that help build trust and enhance engagement in support of children, their caregivers, communities, health workers and health systems

6. Electronic VPD surveillance data exchange for targeted vaccination and outbreak response with timely data capture, sharing, analysis, visualisation linked to decentralised testing data

By investing opportunistically in these six areas throughout the Gavi 5.0 Strategic period, Gavi will accelerate the identification and reach of zero-dose and under-immunised children and realise a return on investment - lives saved and people living longer and healthier lives - with greater cost-efficiency than what is possible without the added value of digital health information.

They show potential to improve immunisation programme reach and efficiency; however, none of them are independent, stand-alone or supported by irrefutable evidence. The success or failure of any of the digital health information applications in these six priority areas relies on the commitment, coordination and buy-in from donors and national immunisation programmes to implement interventions at scale in a way that captures learnings, lessons, monitor progress and make necessary corrections. Each of these six priority areas, regardless of the current level of evidence or justification, needs more practical experiences to advocate for further investment and lessons that can be transferred to other contexts. Their success also depends on the systems, infrastructure, and resources outside of the immunisation programme that make up the enabling environment and data management ecosystem.

The six priority DHI intervention areas are supported by evidence and lessons from implementation experiences that provide a justification for further investment over the next 5 years. The use of geospatial data in routine immunisation microplanning is a cost-effective investment that increases the identification of previously missed settlements.[1] Information from HMIS is used by managers for decision-making at sub-national levels to allocate resources, provide supervision and target actions and resources to areas of low coverage, poor performance or other issues raised by data in a central dashboard.[2] Real-time data collected during outreach vaccination activities improve the timeliness and completeness of daily reports, giving managers actionable data to follow-up on any missed settlements, low coverage and reports of vaccine hesitancy during campaign activities.[3] Documented experiences with digital supply chain information management systems[4,5], digital interventions to support vaccine confidence and demand[6,7], and electronic data exchange and surveillance for vaccine-preventable diseases[8] provide further support and evidence that justify the focused attention and investment on these 6 areas in order to achieve significant reduction in zero-dose and under-immunised children in the coming 5 years.

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1 Improving Immunisation Coverage and Equity through the Effective Use of Geospatial Technologies: A Landscape Analysis and Theory of Change (Sept 2020)

2 Sub-national multi-source data for immunisation programme decision-making (March 2022)

3 The Use of Digital Technologies and Approaches for Real-Time Monitoring of Supplementary Immunization Activities: Good practices and lessons learned (Jan 2021)

4 The impact of an integrated electronic immunization registry and logistics management information system (EIR-eLMIS) on vaccine availability in three regions in Tanzania: A pre-post and time-series analysis (Jan 2020)

5 *Investigating the use of digital solutions in the COVID-19 pandemic: an exploratory analysis of eIR and eLMIS in Guinea, Honduras, India, Rwanda and Tanzania* (Nov 2021) CERGAS at SDA Bocconi & MMGH report commissioned by the Bill & Melinda Gates Foundation, with the support of Gavi, the Vaccine Alliance and the World Health Organization.

6 Increasing demand for immunisation, preventing and reducing loss to follow-up, and promoting community engagement through the effective use of DHI interventions (March 2022)

7 Finding the Signal through the Noise: A landscape review and framework to enhance the effective use of digital social listening for immunisation demand generation (June 2021)

8 Timely detection of vaccine-preventable disease for targeted vaccination and outbreak response (March 2022)

Table 1: Digital Health Information Priority Areas

DHI Priority Area	Description	Justification and Evidence	Ambition for 2025
RECOMMENDED SYSTEMATICALLY FOR ALL GAVI-SUPPORTED COUNTRIES			
Identification and reach of zero-dose and under-immunised children	Geospatial applications, digital maps and micro-plans, satellite identification of settlements and community e-registry	**STRONG:** Facility-level microplanning enhanced with geospatial data and technologies is more effective in identifying and reaching missed communities	Countries will **know precisely where immunisation services need to be optimised** to increase zero dose and under-immunised children accessibility to immunisation services
Digital supply chain information systems (eLMIS)	Timely data visibility, triangulation and use at service delivery points and national/subnational levels	**STRONG:** Digital tools and systems to manage immunisation programme logistics can improve immunisation coverage and equity by reducing stock-outs of vaccines and supplies, reduce vaccine wastage and improve tracking of vaccine stock throughout the supply chain	Countries will be able to **reduce health facility stock-outs and vaccination missed-opportunities** by acting and reacting to end-of-month facility stock levels
Real-time planning and monitoring of immunisation campaigns	Timely reporting, insightful dashboard, coordination and communication	**STRONG:** Real-time monitoring of campaign activities can increase vaccinator accountability and data quality and improve the timeliness and completeness of daily reports, giving managers the actionable data to follow-up on any missed settlements, areas of low coverage and reports of vaccine hesitancy	Countries will be able to **rapidly address needs and gaps** during campaigns through better planning, implementation and monitoring to improve campaigns coverage
RECOMMENDED WHEN OPPORTUNITY EXISTS IN RELEVANT GAVI-SUPPORTED COUNTRIES			
Effective sub-national data use	Improved data triangulation, dashboards, visualisation, mechanisms to aid decision-making and systems interoperability	**MODERATE:** Immunisation data made available to district teams increases data ownership and responsibility, enhances their ability to identify and track down defaulters, allocate resources, provide supervision, and target actions and resources to areas of low coverage and poor performance	Countries will be able to **access, visualise and use data** on coverage, stock, surveillance and target population in all districts to make better planning decisions
Digital interventions supporting vaccine confidence and demand for immunisation	Help build trust and enhance engagement in support of children, their caregivers, communities, health workers and health systems	**MODERATE:** Digital applications extend the reach of the immunisation system to caregivers and communities to support vaccine confidence, decision-making and demand for services; digital tools for health workers can improve the identification, tracking and retention of children for on-time and complete vaccination; tools for immunisation programmes can identify, understand and respond to community concerns, perceptions and barriers to immunisation demand (digital social listening).	Countries will be able to **build vaccine confidence** by monitoring and responding to priority community needs, concerns and AEFI
Electronic VPD surveillance data exchange for targeted vaccination and outbreak response	Timely data capture, sharing, analysis, visualisation linked to decentralised testing data	**DEVELOPING:** Digital reporting, data sharing and alerts integrated into disease surveillance systems can facilitate rapid information exchange, coordination and response for suspected outbreaks or symptoms related to priority diseases. These tools are not yet widely implemented and documented; so justification, assessment and evidence not currently available.	Countries will be able to better target vaccination, rapidly detect VPD outbreaks and be prepared for the next pandemic and response

These DHI Priorities align with the data priorities outlined in the IA2030 Vision Data Strategy 2022-2024 Working Group Priorities to:

1. Align data leadership frameworks and develop a coordinated plan for action to advance harmonisation of capacity building efforts e.g., data curricula and leadership institutes. Ensure frameworks are user friendly with illustrative application case studies. **[Cross- cutting]**

2. Provide mechanisms to ensure that information collected on resources needed for running immunisation programmes is shared back to the country level with both MOH and ministry of finance (MOF) officials to better inform decision-making. **[Effective sub- national data use, Real-time planning and monitoring of campaigns, Digital supply chain information systems, Electronic VPD surveillance data exchange & Cross-cutting]**

3. Support the Vaccination Demand Hub to measure demand for both demand side data and behavioural-informed interventions. **[Digital interventions supporting vaccine confidence and demand]**

4. Invest in and develop proven approaches for generating and using local evidence on contextual and cultural factors to design tailored vaccine messages that will improve demand. **[Digital interventions supporting vaccine confidence and demand]**

5. Identify the skill sets needed for data use versus data collection and invest in capacity building for these skills at all levels. **[Effective sub-national data use, Real-time planning and monitoring of campaigns, Digital supply chain information systems, Digital VPD surveillance data exchange & Cross-cutting]**

6. Link post-outbreak and emergency root cause analysis data back to routine immunisation data by improving coordination between emergency response and health systems- strengthening groups. **[Digital VPD surveillance data exchange & Effective sub- national data use]**

7. Develop global guidelines for life course standards for data and programs. **[Effective sub- national data use & Cross-cutting]**

8. Develop data standards focused on linking information from across programs and create mechanisms for cross program stakeholders to connect and align. **[Effective sub-national data use & Cross-cutting]**

9. Maintain a robust health facility-based VPD surveillance system that can be used to rapidly detect VPD outbreaks. **[Electronic VPD surveillance data exchange & Effective sub-national data use]**

10. Donors coordinate, align and consolidate, by programme area, requests for data from countries. **[Cross-cutting]**

11. Develop guidance for selection and implementation of tools and approaches to meet objectives of converting data into actionable insights, define target populations, identify zero-dose children, and other critical areas to meet immunisation goals in countries. **[Identification and reach of zero-dose and under-immunised children & Effective sub- national data use]**

12. Provide easily accessible global guidance and documentation on interoperability (including country readiness assessments, existing guidance), to link and exchange data across critical systems such as CRVS, surveillance systems, lab systems, and other HIS to immunisation systems. **[Effective sub-national data use & Cross-cutting]**

This alignment demonstrates how the Gavi DHI Strategy can catalyse the achievement of IA2030 goals and objectives – especially those related to the availability and effective use of data at sub-national levels.

In the process of identifying the most promising interventions and approaches, areas have been deprioritised based on the level of complexity or low level of justification and evidence. For example, Electronic immunisation registries (EIR) are not prioritised due to the need for heavy and sustained investment for systems and more mature digital health information ecosystems that are not already strong in identifying and reaching zero-dose populations. As validated in the country roadmap development processes in Cambodia, CAR, Ethiopia, and Nigeria; most Gavi countries resources could be better targeted to digital health information interventions that are better suited to the Zero-Dose Agenda like more accurate denominator estimation, identification of missed communities, and/or more effective vaccine service optimisation through sub-national data triangulation and use and reduction of vaccine stock out. Likewise, mass push SMS messages that are not tailored to caregiver profiles, literacy or needs are not generally effective and therefore not likely to make significant contributions to demand.

Digital Health Information Enablers

Gavi's DHI Strategy is designed to assist countries to prioritise and strengthen key digital health and data ecosystem enablers alongside implementation of prioritised interventions. The countries that Gavi works in are low resource settings. These are countries that often struggle with many immunisation programme bottlenecks and lower digital health information maturity. Gavi-supported countries vary in their maturity and advancement along the seven WHO/ITU eHealth Strategy Toolkit digital health building blocks, namely 1. Leadership & Governance, 2. Strategy & Investment, 3. Legislation, Policy & Compliance, 4. Workforce, 5. Infrastructure, 6. Standards & Interoperability, and 7. Services & Applications. DHI enablers can significantly facilitate or hinder what is achievable in adopting a successful digital health information strategy that is fit for purpose across settings. As part of the DHI Strategy development process, Gavi through a consultative process has identified the following priority enablers.

Through a prioritisation process, countries are encouraged to assess and prioritise digital health enablers that can increase the likelihood of scale and sustainability of digital health interventions for immunisation. Alongside this, a process for gender analyses, planning, and monitoring has been developed to support countries to identify gender-related activities to account for the gender digital divide and identify and address gender dynamics to take incremental steps towards gender transformation within digital transformation. The National DHI for Immunisation Costed Roadmap Toolkit provides a process for countries to operationalise plans for investment in the six priority areas to ensure sustainable and effective application of digital health interventions, enablers, and gender-activities in support of immunisation programmes.

Box 3: Digital Health Information Enablers

- Country landscapes and maturity assessments to understand the context and prioritise digital health interventions and enablers

- Standards for interoperability, data governance, integrated data management and cross cutting information technology systems

- Dedicated and sustained resources to support scale up, institutionalisation and long-term maintenance of digital health applications

- Infrastructure - Information Technology equipment, maintenance, internet connectivity and data management and storage systems

- Diversity of solutions designed with sub-national users and healthy markets

- Private sector engagement

- Community & Civil Society Organisation engagement

- Governance structure for decision-making, national coordinating body and MOH strategic vision for DHI including the national health information system

- Scalable capacity building opportunities

Digital Health Information for Immunisation Strategy

There is no denying the overwhelming success of childhood vaccines in reducing morbidity and mortality and promoting health and wellbeing around the globe. Digital technology, tools and applications are a means to enhance the reach, delivery, uptake, and coverage of these lifesaving commodities and services. They play an increasingly important role in health system management and in the everyday lives of caregivers and communities.

The Gavi Digital Health Information Strategy is designed to directly contribute to Gavi 5.0 Impact of leaving no-one behind with immunisation and Strategic Goals to:

1. Introduce and scale up vaccines (including Covid vaccines)

2. Strengthen health systems to increase equity in immunisation

3. Improve sustainability of programmes

4. Ensure healthy markets for vaccines and related products.

Gavi's Digital Health Information Strategic Vision is **digitally transformed, integrated, equitable, gender-intentional information systems that identify and reach zero-dose and under-immunised children through improved access, quality, and efficiency to accelerate country immunisation objectives in line with Gavi's mission to leave no child behind with immunisation**.

It is supported by four prioritised outcomes, namely:

1. **Increased catalytic investment** – building on and contributing to global, regional, and national DHI initiatives and enablers using immunisation as a pathway to equitable primary health care (PHC).

2. **Coordinated support for enablers** – to strengthen capacity and sustainability for effective design, implementation, and monitoring of DHI interventions.

3. **Scaled and integrated priority DHI interventions** – within and across countries aligned to Gavi 5.0 Strategic Goals.

4. **Improved programming and decision-making** – for identifying and reaching zero-dose and under

immunised children through effective use of data for planning, service delivery, and monitoring.

These outcomes are shaped by real experiences, careful assessment of needs and expected outcomes, and driven by a motivation to bring life-saving vaccines to the most remote communities and children who still do not have reliable access to these life-saving medical products. The vision is built on digital health information interventions that are possible with today's technologies and lays the groundwork for adaptive systems to support future innovations and address new challenges.

Theory of Change

The Gavi DHI Theory of Change is a framework that describes the actionable processes through which targeted investment to promote the effective use of digital health information will improve immunisation programme sustainability, equity, and coverage by strengthening the availability and use of data and information in routine immunisation service delivery, programme planning and monitoring. The Theory of Change provides a high-level overview of how Gavi's funding mechanisms and convening power can achieve the country- and global-level outcomes necessary for efficient, equitable and quality immunisation programmes that identify and reach zero-dose and under-immunised children. It highlights the levers, inputs, outputs and outcomes at both the country and global levels.

Levers and mechanisms to promote action and implementation

There are a number of mechanisms and levers that Gavi and Alliance partners can draw upon to support the implementation of the DHI Strategy with related actions including alignment of funding, advocacy, influence, and coordination.

1. Alignment of Gavi funding at global, regional and country levels

Gavi's direct implementation modalities include country funding mechanisms such as Health Systems Strengthening (HSS), Equity Accelerator Funding (EAF), Catalytic Innovation Scale-up funding, Campaigns Operational (Ops) and COVID-19 Delivery Support (CDS) funding grants. Technical assistance at the country-level is provided through Targeted Country Assistance (TCA) with regional and global funding to enhance learning, support standard adoption, innovation, and shape regional hubs of experts with Strategic Focus Area (SFA) funding.

2. The Alliance voice for advocacy for DHI investments at all levels

Gavi has the reputation, influence, and voice to convene other global and national stakeholders to support coordinated investments in DHI enablers and interventions that will establish immunisation as the template and foundation for digital transformation of broader health systems and primary care. This can be done through more active Gavi participation is platforms such as the digital health donor coordination group and events such as the Global Digital Health Forum, and coordination with other donor supporting the digital transformation agenda in country.

3. Gavi's Influence and financial leverage to set conditions for country investments

With the foundation and guideposts laid out in this DHI Strategy, Gavi can promote countries to enact sound policy and standards necessary for lasting improvements in national health systems and immunisation programmes to increase the equitable and comprehensive reach of health services. This was validated in the test country roadmap development processes, providing a clear process for countries to systematically map digital health interventions to immunisation priorities and enablers to digital health maturity. While gender is identified as a priority by most immunisation programmes, more targeted support is needed to help countries analyse, plan, and monitor gender-related activities.

4. Coordinated response to prioritised needs and primary health care vision from global to national level

Gavi has the position and leverage to support countries in the development of comprehensive and sustainable roadmaps and plans for DHI foundations and enablers that can move towards the effective digitisation of the immunisation programme with added benefits to national health data management and primary health care in general. A key area for this coordination will be in the bringing together of development partners and immunisation programme with digital health and data-related governance bodies and gender stakeholders for joint costed gender-intentional roadmap development processes.

DHI Inputs and Outputs

The DHI Strategy Inputs are designed to support country EPI teams to be more targeted and proactive in their approach to the prioritisation of digital health interventions and enablers as well as gender-related activities. The key inputs highlighted in the Theory of Change include:

Figure 4: Gavi Digital Health Information for Immunisation Strategy Theory of Change

Impact

LEAVING NO-ONE BEHIND WITH IMMUNISATION

Gavi 5.0 Strat Goals

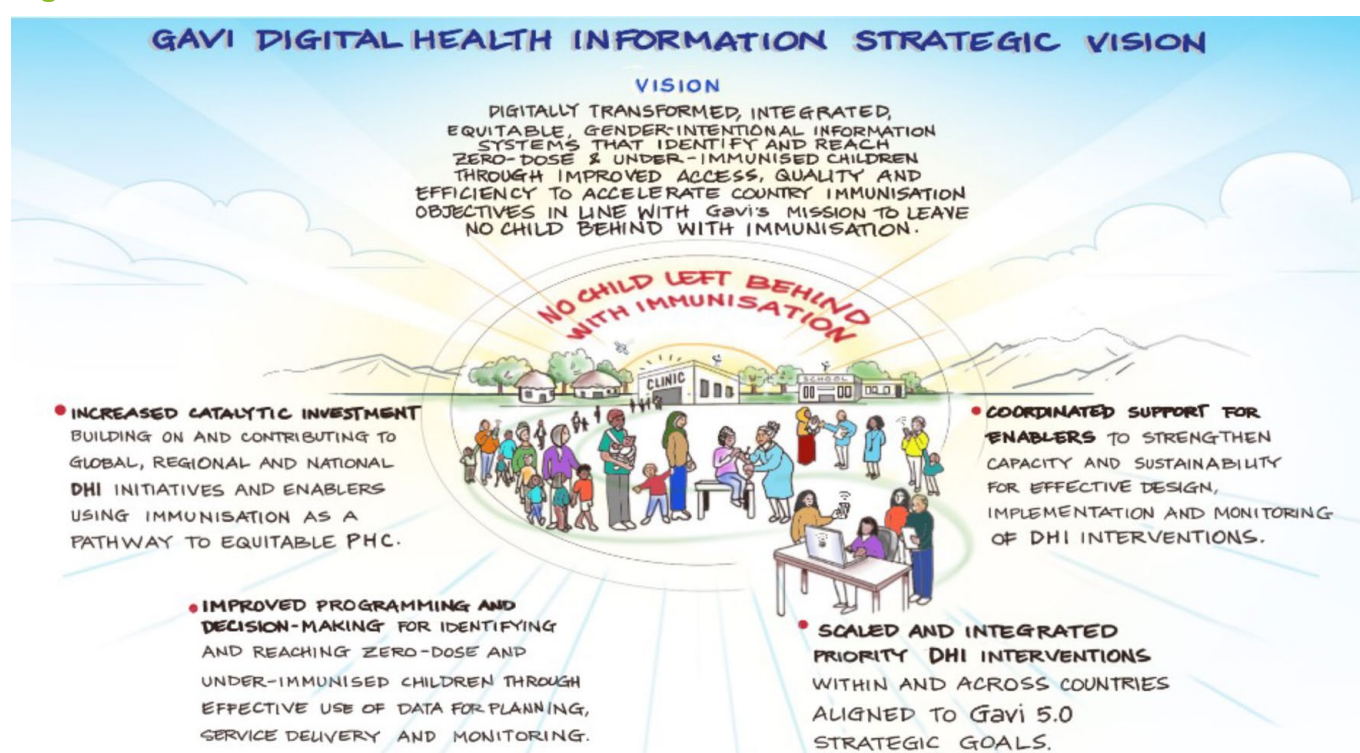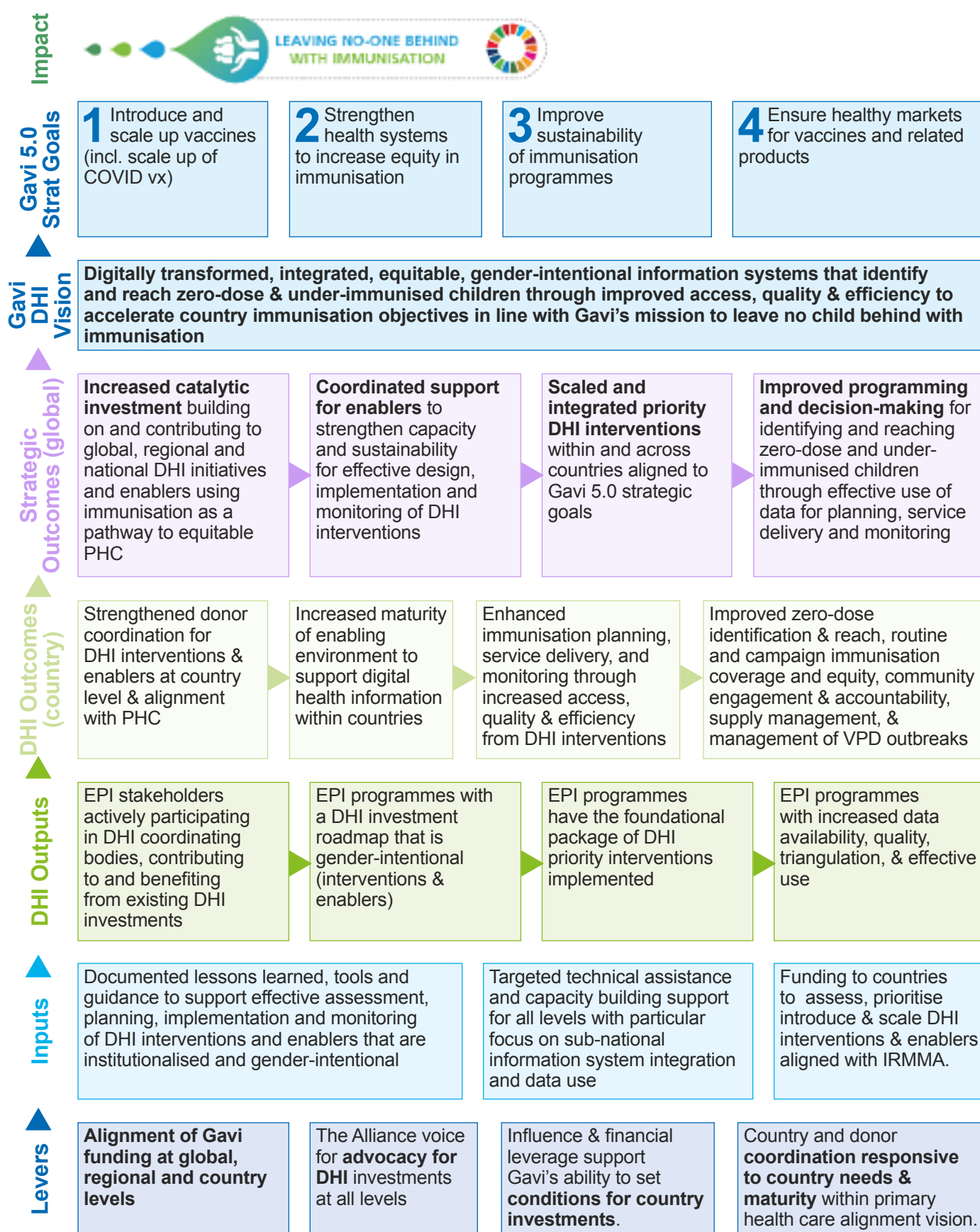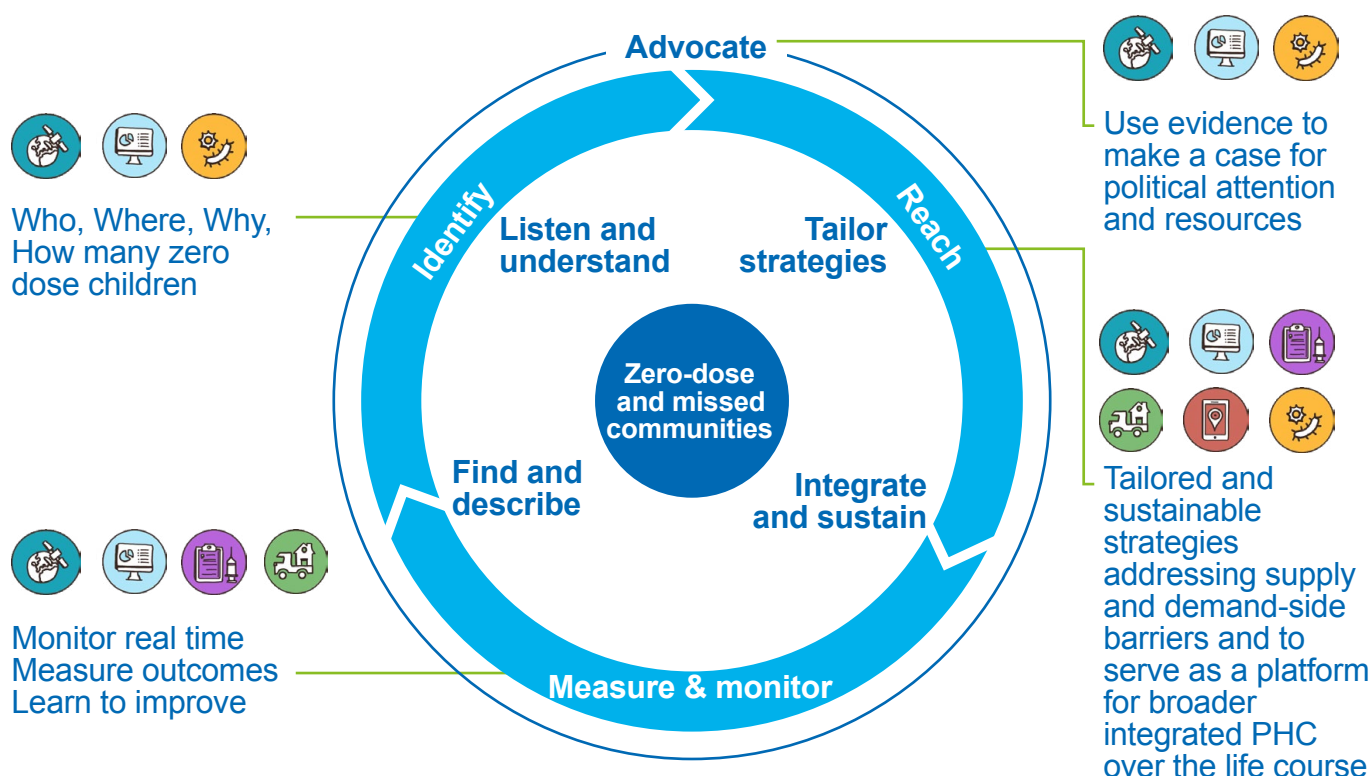| 1 Introduce and scale up vaccines (incl. scale up of COVID vx)	2 Strengthen health systems to increase equity in immunisation	3 Improve sustainability of immunisation programmes	4 Ensure healthy markets for vaccines and related products

Gavi DHI Vision

Digitally transformed, integrated, equitable, gender-intentional information systems that identify and reach zero-dose & under-immunised children through improved access, quality & efficiency to accelerate country immunisation objectives in line with Gavi's mission to leave no child behind with immunisation

Strategic Outcomes (global)

Increased catalytic investment building on and contributing to global, regional and national DHI initiatives and enablers using immunisation as a pathway to equitable PHC	**Coordinated support for enablers** to strengthen capacity and sustainability for effective design, implementation and monitoring of DHI interventions	**Scaled and integrated priority DHI interventions** within and across countries aligned to Gavi 5.0 strategic goals	**Improved programming and decision-making** for identifying and reaching zero-dose and under-immunised children through effective use of data for planning, service delivery and monitoring

DHI Outcomes (country)

Strengthened donor coordination for DHI interventions & enablers at country level & alignment with PHC	Increased maturity of enabling environment to support digital health information within countries	Enhanced immunisation planning, service delivery, and monitoring through increased access, quality & efficiency from DHI interventions	Improved zero-dose identification & reach, routine and campaign immunisation coverage and equity, community engagement & accountability, supply management, & management of VPD outbreaks

DHI Outputs

EPI stakeholders actively participating in DHI coordinating bodies, contributing to and benefiting from existing DHI investments	EPI programmes with a DHI investment roadmap that is gender-intentional (interventions & enablers)	EPI programmes have the foundational package of DHI priority interventions implemented	EPI programmes with increased data availability, quality, triangulation, & effective use

Inputs

Documented lessons learned, tools and guidance to support effective assessment, planning, implementation and monitoring of DHI interventions and enablers that are institutionalised and gender-intentional	Targeted technical assistance and capacity building support for all levels with particular focus on sub-national information system integration and data use	Funding to countries to assess, prioritise introduce & scale DHI interventions & enablers aligned with IRMMA.

Levers

Alignment of Gavi funding at global, regional and country levels	The Alliance voice for **advocacy for DHI** investments at all levels	Influence & financial leverage support Gavi's ability to set **conditions for country investments**.	Country and donor **coordination responsive to country needs & maturity** within primary health care alignment vision.

DHI Priority Interventions

Cross Cutting | Identify & Reach Zero-dose & under-immunized Children | Effective Sub-nat'l Data Use | Real Time Planning & Monitoring of Campaigns | Digital Supply Chain Information System | Digital Interventions Supporting Vaccine Confidence & Demand | VPD Surveillance, Investigation & Case-notification

Figure 5: Using the Identify, Reach, Measure and Monitor and Advocate (IRMMA) Framework to Inform DHI Prioritisation

Who, Where, Why, How many zero dose children

Monitor real time
Measure outcomes
Learn to improve

Use evidence to make a case for political attention and resources

Tailored and sustainable strategies addressing supply and demand-side barriers and to serve as a platform for broader integrated PHC over the life course

- Documented lessons learned, tools and guidance to support effective assessment, planning, implementation, and monitoring of DHI interventions and enablers that are institutionalised and gender-intentional

- Targeted technical assistance and capacity building support for all levels with particular focus on sub-national information system integration and data use

- Funding to countries to assess, prioritise, introduce, and scale DHI interventions and enablers aligned with IRMMA

Identify, Reach, Measure & Monitor, and Advocate (IRMMA) is the main framework used to prioritise immunisation interventions for zero-dose children as part of a national immunisation plan or strategy, providing an important platform for prioritising DHI interventions aligned to Gavi's strategic focus on reaching and vaccinating zero-dose children.

These inputs help guide countries to align and contribute to the following strategic outputs:

- EPI stakeholders actively participating in DHI coordinating bodies, contributing to and benefiting from existing DHI investments

- EPI programmes with a DHI investment roadmap that is gender-intentional (interventions & enablers)

- EPI programmes that have the foundational package of DHI interventions implemented

- EPI programmes with increased data availability, quality, triangulation, and effective use

To help provide concrete guidance on the sorts of DHI interventions that countries should prioritise, a foundational and advance package of recommended interventions has been developed in consultation with key experts in each priority area. These packages, and indeed the entire DHI Strategy, provide a framework that demonstrates a feasible pathway to incremental advancement in areas that have the greatest potential to bring about sustainable and meaningful change in immunisation programmes. The Strategy, the segmented and packaged approach will be adapted an applied opportunistically to fit the reality and context in each country, acknowledging that each country presents unique needs, ecosystems, and foundational interventions at various stages of advancement and scale. These packages are meant to be used as a guide to ensure that the critical foundations identified for priority areas are in place before investing in other more advanced interventions.

Table 2: Digital Health Information Foundational and Advanced Packages

DHI Priority Area	All countries Foundational package	High Impact: ADDITIONAL Advanced package
Cross Cutting	• National Immunisation Strategies, Programmes, and Policies with a targeted focus on zero-dose and under-immunised children (including IRMMA) are used to prioritise DHI interventions for scale building on relevant existing digital health interventions within PHC • National DHI ecosystem and cross-cutting ICT systems assessment and gender analysis to are used to prioritise DHI enablers and gender-related activities • Active engagement between EPI and digital health and data coordinating bodies is promoted to produce a National Gender-intentional DHI for Immunisation Roadmap (interventions & enablers)	
Identification and reach of zero-dose and under-immunised children	•Subnational triangulation dashboard with high-resolution/ fidelity population estimates Linkages with authoritative master lists that need to display immunisation services •Intelligent sub-national map displaying immunisation services, catchment area boundaries and estimated population (from different sources)	•Systematic use of geospatial data and technologies at scale •Digital microplanning at district/facility level is fully geo-enabled and at scale to support RI and campaigns •Satellite identification of missed settlements
Digital supply chain information systems (eLMIS)	•Aligned and coordinated Digital Supply Chain Information governance body •Assessment of digital & eLMIS maturity •Investment roadmap for eLMIS scale-up •Health facility stock visibility	•Comprehensive digital supply chain information system segmented package based on maturity assessment (A/established system, B/deployment, C/integration & interoperability, D/geographical extension, E/sustainability, F/track and trace)
Real-time planning and monitoring of immunisation campaigns	•Real-time monitoring for the planning and assessment of campaign readiness • Real-time monitoring dashboard with coverage, stock, and AEFI data	•Digital microplanning for the campaigns
Effective sub-national data use	•Integrated dashboard (coverage/VPD/Stock data) •Dashboard for microplanning and monitoring •Data use including operational data at sub-national levels	•Functional, interoperable, integrated, and regularly updated immunisation information system •Systematic use of immunisation data
Digital interventions supporting vaccine confidence and demand for immunisation	•Digital aggregate AEFI surveillance •Introduce or scale-up one intervention for community-based vaccine confidence and demand, this includes better engagement with community leaders and community health workers to identify and report births, register children for immunisation, and send out SMS reminders for routine immunisation	•System for monitoring vaccine confidence, community sentiment and barriers to access •Electronic system to facilitate two-way dialog with community •Implement electronic system for birth notification
Electronic VPD surveillance data exchange for targeted vaccination and outbreak response	•E-aggregate VPD surveillance information system •linkages between decentralised diagnostic information system, VPD Surveillance and EPI	•E-case-based VPD surveillance system •Geospatial data incorporated into disease surveillance, investigation, and case-notification systems

Table 3: Gender considerations for each DHI priority area

Gender-intentional Approach Mainstreamed	
Gender impacts participation in digital health	**Gender-intentional recommendations**
Women less likely to own a mobile phone and less aware of digital health services - Gender Digital Divide	Support countries to include gender analyses & planning for all stages of DHI for immunisation planning, implementation & monitoring
Gender dynamics may compromise success of digital health information interventions	Support partners to provide TA in gender analyses & gender intentional DHI strategy development
Gendered experiences with digital health information & services suggest the need to examine gender balance in supervisory/vaccinator teams	Promote gender responsive & transformative approaches across DHI for immunisation activities at country level

Table 4: Gender Considerations for Gavi Prioritised DHI Interventions

Priority area	Gender Considerations & Approach mainstreamed into the DHI strategy and interventions
Identification and reach of zero-dose and under-immunised children	Geospatial modelling and analysis to understand the relationship between gender and immunisation to reveal inequities in coverage, service delivery, access & demand
	Mitigate gender bias in access and control of geospatial data collection devices by enumerators, geo-enabled intervention design, and data use
Digital interventions supporting vaccine confidence and demand for immunisation	Account for gender digital divide, gender norms, gender dynamics, and digital literacy among caregivers & health professionals in communication campaigns, community engagement mechanisms and vaccine confidence surveys
Effective sub-national data use	Digital system supporting relevant gender disaggregation data and analyses
	Design digital health tools, data integration and visualisation from a gender intentional/equity perspective with considerations for gender dynamics between health workers and supervisors and reducing burden to ensure that gender bias and norms do not impact data collection, quality and use
Real-time planning and monitoring of campaigns	Provide equal access among health workers to opportunities for professional growth, capacity building& digital literacy training with recognition of how gender roles and dynamics influence supervisory relationships in the workplace
Digital supply chain information systems	
Electronic VPD surveillance	

To facilitate the rapid prioritisation of digital health information enablers in Gavi-supported countries, the Global Digital Health Index & Maturity Model (GDHI), has been prioritised as the most relevant assessment tool. This is complemented through the various key informant interviews and sub-national and national level prioritisation and planning workshops recommended in the National DHI for Immunisation Country Roadmap Process.

To help mainstream the gender-intentional approach, specific activities, considerations and approaches are recommended for each of the six priority areas.

These recommendations have been incorporated as part of the guidance and support to countries for their planning, implementation, and monitoring of DHI for immunisation, through partner technical assistance provided to countries for their DHI strategy and roadmap development process to promote positive movement towards a gender responsive approach in all DHI activities at the country level. A gender analysis, planning, and monitoring tool for digital health interventions and enablers has been developed to support this process at national and sub-national levels. This aligns with both Gavi's Gender Policy as well as efforts to more strategically engage with CSOs who are well-placed to support associated social change and private sector to adopt a more inclusive approach to technology development and implementation.

These foundational activities and outputs in each Gavi-supported country then align to produce the following country outcomes that collectively contribute to the global outcomes.

- Strengthened donor coordination for DHI interventions and enablers at country level & alignment with PHC

- Increased maturity of enabling environment to support digital health information within countries

- Enhanced immunisation planning, service delivery, and monitoring through increased access, quality, and efficiency from DHI interventions

- Improved zero-dose identification & reach, routine and campaign immunisation coverage and equity, community engagement & accountability, supply management, and management of VPD outbreaks

The vision, objectives, frameworks, and lenses that make up Gavi's DHI Strategy are only useful when applied through actionable guidance and tools to help national immunisation programmes strengthen the availability and use of data and information in their service delivery programmes. The effective operationalisation of the DHI Strategy depends on the coordinated action of available mechanisms, buy-in among national agencies, Alliance members and implementing partners, and direct country prioritisation, investments and implementation of appropriate interventions in the six recommended DHI priority areas.

From Strategy to Implementation

The DHI Strategy is supported by a Costed Operational Plan. It translates the DHI Strategy into actionable costed activities from now until the end of Gavi 5.0 strategic period with an estimated budget of $32 million USD for global and regional activities and better targeting of digital health investments within country HSS grants. Some of the support will come from SFAs, including those focused on gender and monitoring and evaluation. It outlines actions to be coordinated through the Gavi Secretariat and implemented through the Gavi Alliance alongside partners and country governments. The Operational Plan features global activities complemented by regional TA and coordination and country-specific interventions, enablers, and gender-related activities aligned to the country context. It is supported through the appropriate levers and mechanisms for implementation with appropriate monitoring, evaluation, and documentation.

At the country level, the strategy will not come with dedicated funding to support the strategy but tools for how to optimise existing Gavi levers (cash grants, technical assistance, partnership) and country advocacy for DHI transformation. To support this, a new complementary resource has been produced - National DHI for Immunisation Costed Roadmap Toolkit to provide guidance on how to prioritise and cost interventions, enablers, and gender-related activities in a way that is aligned to the immunisation and digital health strategies and maturity of the country. Based on early country testing of the Gav DHI Strategy, countries are willing and able to programme >10% of HSS grant budgets on average to improve impact, scale, and sustainability of digital health

interventions. Considering how the DHI priorities support all the Health System pillar, it is recommended that they allocate a minimum of 10% of the HSS budget, and this will be a catalytic investment to build on other donor investments. Costing for DHI is context-specific- largely driven by the scope and scale of the population size and number and location of children to be immunised, geographic distribution of the population, and number of districts, facilities and health workers within each country. For the six DHI intervention areas greater investment is needed for geospatial data generation and use for zero-dose identification and more accurate denominators, eLMIS for better vaccine distribution and supply chain optimisation, and increasing demand and vaccine confidence and lower cost investments with greater value for money in sub-national data use, real-time monitoring of campaigns, and electronic disease surveillance. In countries with larger Gavi HSS grant budgets, DHI may represent a small percentage of the overall budget. For countries with smaller budgets, DHI will represent a large proportion of the budget as capital investment cost is important per country.

The Operational Plan prioritises the development of National Digital Health Information for Immunisation Costed Roadmaps in 2022 and 2023 with the implementation of foundational packages in 2023 and 2024 for all high impact countries and 25% of all other Gavi countries and advanced packages in high impact countries as needed and requested. In addition, it prioritises the documentation of lessons learned and targeted research and evaluation activities in areas where there is need for more evidence (see Annex C for the Monitoring, Evaluation and Learning Plan).

Table 5: Gavi DHI Operational Plan 2022-2025 extract and high-level overview

|	2022	2023	2024	2025
Cross Cutting	Develop, test and implement DHI Country Assessment and Costed Roadmap Toolkit			
	Conduct DHI Strategy Baseline	Mid-term Review & Country Survey		Final DHI Strategy Review & Report
	Transition Covid-19 DHI Innovations to Routine Immunisation			
	Document the impact of scaled Global Goods on immunisation outcomes across three of the six DHI Priority areas			
	Develop & test DHI Gender Analysis, Planning & Monitoring Tool	Document the effects of gender-intentional programming on DHI interventions and enablers		
	Document and facilitate learning from exemplars, cases studies and lessons learned across DHI Strategy activities, Gavi countries, Alliance Members, and partners			
Identification and reach of zero-dose & under-immunised children	Develop, pilot digital microplanning guidance, playbook at national & sub-sub-national levels			
	Support implementation of foundational & advanced packages of DHI interventions & enablers across with focus on geo-enabled digital microplanning			
			Conduct large-scale effectiveness study of digital microplanning	
Effective sub-national data use	Develop, test Guide to Effective Sub-national Data Use, Update DHIS2 Sub-national Data Use Guidance & Playbook			
	Support implementation of foundational & advanced packages of DHI interventions & enablers, focus on sub-national dashboard for aggregate immunisation & related data			
			Document effective practices for increasing effective use of sub-national data with IA2030	
Real-time planning & monitoring of immunisation campaigns	Develop and test Real-time Monitoring Planning Playbook			
	Support implementation of foundational & advanced packages of DHI interventions & enablers, focus on data integration (campaigns, geospatial, routine, & HMIS)			
			Document lessons learned & case studies related to real-time monitoring for immunisation	
Digital supply chain information systems (eLMIS)	Develop & test Digital Supply Chain Information System Investment Guidance			
	Support implementation of foundational & advanced packages of DHI interventions & enablers with focus on all subnational districts			
			Conduct large-scale effectiveness study of digital supply chain information system	
Digital interventions supporting vaccine confidence & demand for immunisation	Conduct review & create menu & decision guide/playbook for promising DHI interventions			
	Support implementation of foundational & advanced packages of DHI interventions & enablers with focus on systems for monitoring vaccine confidence & demand			
			Document effective interventions & enablers for increasing vaccine confidence & demand	
Electronic VPD surveillance data exchange for targeted vaccination & outbreak response	Develop & test eSurv readiness assessment tool/guidance, Pilot & document decentralised testing for VPDs			
	Support implementation of foundational & advanced packages of DHI interventions & enablers, focus on sub-national aggregate eSurv			
			Conduct large-scale effectiveness study of eSurv & effects on immunisation coverage and equity	

Figure 6: National Digital Health for Immunisation Country Roadmap Journey
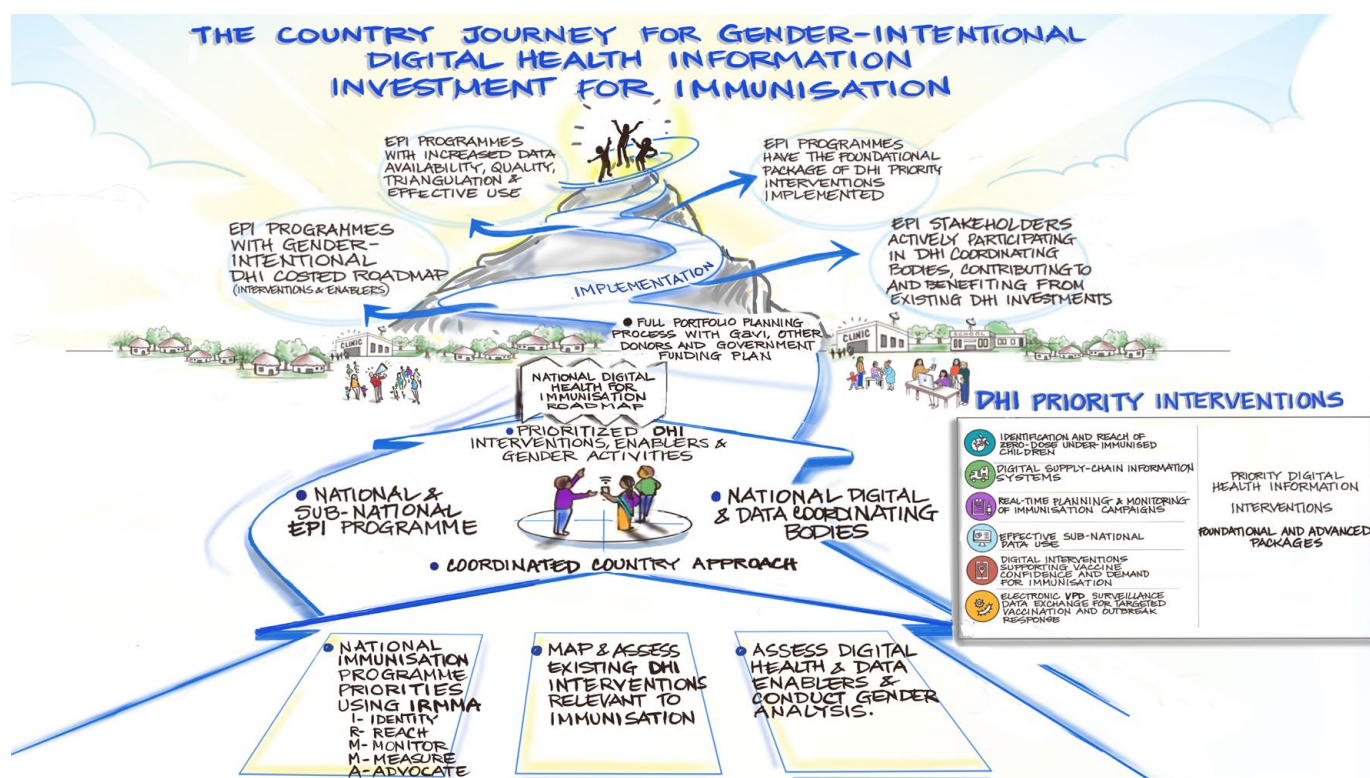
Country application and prioritisation

The culmination of the DHI Strategy is its application and use in Gavi-supported countries to guide prioritisation of digital health information interventions, enablers and gender-related activities for strengthening the immunisation programme. Gavi countries are segmented into High Impact, Fragile, and Core (Priority and Standard). The following illustration shows the distribution of proposed DHI interventions and enablers by country segment.

To provide the most appropriate and useful support for each country, immunisation programme priorities and relevant digital health interventions and enablers appropriate to the maturity of the country context will be cross-referenced and applied to Gavi country segments. Gavi levers can then be tailored and applied to accommodate specific challenges and needs of the country based on their immunisation priorities, data availability, digital health maturity and Gavi country categorisation. To support the needs at different country segments, the Gavi Secretariat will engage countries to identify DHI intervention priorities and enablers to inform the development and implementation of costed roadmaps through Alliance members and engagement of expanded partners. This can help guide packages of support and investment priorities that countries can articulate in their funding requests to Gavi and in coordination with other donors to increase overall immunisation programme effectiveness and data and digital health maturity within and across countries.

Table 6: Gavi Country Prioritisation

	Support for **country assessment/ prioritisation and roadmap** development process	**Foundational package** of DHI priority interventions with a focus on scale	**Advanced package** of DHI Priority interventions with a focus on impact and innovation	Tailored and agile **TA mechanism** to strengthen capacity through innovative partnerships	Support for 1-2 prioritised **enablers** based on assessment	Active engagement between **EPI and digital health and data** coordinating bodies
High impact						
Fragile						
Core priority						
Core standard						

* focus on capacity building and governance

The Country Journey for DHI Investment for Immunisation

The country journey for DHI investment for immunisation begins with a rapid prioritisation exercise and culminates in a costed investment roadmap
that is aligned to country outcomes to help guide investment and country activities for the future. The planning phase is not meant to be laborious but to appropriately identify priority investments and allocate scarce resources for maximum impact. Desk review, key informant interviews and a series of participatory prioritisation and planning workshops at sub-national and national levels will help identify the key needs, barriers, challenges and opportunities in the immunisation programme and within this context, identify which DHI interventions and enablers may serve to improve service delivery and overall immunisation coverage and equity. A targeted gender analysis will help to identify priority gender-related activities to move countries along the continuum of gender transformation within digital transformation of the immunisation programme. This coordinated approach ensures that all Alliance members and other key immunisation and digital health stakeholders can support a common plan that extends beyond Gavi's funding. It is worth noting, that there will not be additional funding for countries to support DHI activities, but rather this process is intended to help ensure more targeted funding requests to Gavi through HSS grants for the greatest impact with existing resources.

Countries will develop a tailored National DHI for Immunisation Roadmap, taking advantage of opportunities to build on established DHI interventions and foundations within the broad health system and to align with and compliment any existing national digital health strategy or other guiding policy documents. These country roadmaps will detail the operational steps necessary to support national immunisation priorities with appropriate DHI applications, activities relevant to immunisation and digital health maturity

to prioritise enablers and incorporate considerations for all activities to contribute to gender-intentional programming.

The costed roadmaps can help inform the country's full portfolio planning (FPP) process to apply for Gavi funding to implementing tailored elements the foundational or advanced package of DHI interventions. Since FPP occurs every five years, countries can use these roadmaps to inform grant re-allocation opportunities, request to catalytic innovation scale up funding and grants to support immunisation campaigns. The DHI roadmap for immunisation can be a useful tool for advocacy and to focus funding from other donors to contribute to DHI priorities in support of immunisation goals.

Insights from Country Roadmap Development Processes

The draft DHI Strategy was field-tested in four countries between April and September 2022, namely:

- Nigeria (High Impact)

- Ethiopia (High Impact)

- Central African Republic (Fragile)

- Cambodia (Core Standard)

The aim of the initial country roadmap process was to validate and contribute to the finalisation of the Gavi DHI Strategy and to inform the development of a set of tools to help all Gavi-supported countries develop a gender-intentional DHI costed roadmap and plan as part of the Full Portfolio Planning Process.

In close partnership with national EPI and digital health stakeholders and support from UNICEF and WHO regional and country-level teams, a participatory process of rapid prioritisation, assessment and learning in each of the four pilot countries resulted

in final costed roadmaps and the development and refinement of a National DHI for Immunisation Costed Roadmap Toolkit in English and French. The country piloting process suggested valuable refinements and suggestions to improve the overall DHI Strategy. Each country experience provided useful insights for the Gavi DHI Strategy and examples for how countries were able to use it to prioritise interventions, enablers, and gender activities.

As the first pilot country, the Cambodia National Immunisation Programme used the Gavi DHI Strategy Country Roadmap as a framework to move beyond the aspiration and exclusive focus of an electronic immunisation registry to prioritise ten DHI interventions aligned to key challenges prioritised in the *Cambodia National Immunization Strategy 2021-2025* and beyond up to 2030 and expanding on existing digital health efforts within and outside of immunisation, including GIS work in malaria to support identification and reach of zero-dose children and investing in population modelling to generate more accurate denominators. They also prioritised interventions that build on Covid-19 innovations (eRegistry with alerts and reminders) to reduce loss to follow up for individual immunisation tracking and timely completion and digital social listening for improved and more targeted community engagement. In addition, they were able to identify capacity development as their prioritised enabler and inclusion of DHI considerations like access to technology, literacy, and gender dynamics in the immunisation workforce as part of their priority to improve gender equity within the national immunisation programme. This process culminated in the development of a Cambodia National DHI for Immunisation Roadmap that is aligned to primary health care and universal health

care priorities as well as the draft Cambodia National Digital Health Strategy. Components of this roadmap have been prioritised for submission to Gavi for Cambodia's HSS grant and others will be supported through the national budget and other development partner contributions.

Learnings from Cambodia were used to simplify and adapt the roadmap development process in Ethiopia, Nigeria, and CAR with a greater focus on sub-national level engagement to identify prioritised digital health interventions and national multi-stakeholder engagement for planning and budgeting. The High Impact countries, Ethiopia and Nigeria, have higher digital health ecosystem maturity generating a range of prioritised digital health interventions that was narrower, but with broader scope and scale. There was less emphasis on introduction of new interventions (apart from GIS in Ethiopia for zero dose) or even scaling existing interventions, but more emphasis on strengthening and integration of existing systems for demand generation, real-time monitoring of routine immunisation and campaigns at community level and eLMIS. For enablers, there was a strong focus on digital literacy among the immunisation Workforce and Interoperability in Ethiopia and Leadership and Governance, Infrastructure, and ICT Workforce development in Nigeria. For gender, both Ethiopia and Nigeria identified supporting more women to enter and stay in the ICT Workforce as a priority with some concrete recommended activities identified from State inputs in Nigeria such as increasing engagement of women in ICT training and peer-to-peer leaning and mentorship.

Additional insights were gathered from Central African Republic (CAR) for how Gavi might engage with

Table 7: GAVI DHI Strategy MEL Plan

Input indicators	Targets	DHI Output indicators	Targets	DHI Outcome indicators (country)	Targets	Strategic Outcome indicators (global)	Targets
# Lessons learned reports; # tools; # guidance documents to support DHI interventions and enablers	9 resources: 1 cross cutting DHI lessons learned report, 6 tools/resources (surveillance pending), and 1 guidance document for country roadmaps, and 1 gender analysis and planning tool	# and/or % countries reporting EPI stakeholders participating in DHI coordinating bodies	5 High Impact Countries; 25% all other Gavi-supported countries	# and/or % countries with EPI reporting convening and/or participating in country DHI donor and technical fora	5 High Impact Countries; 25% All other Gavi-supported countries	% Gavi Funding Allocated to DHI Interventions and Enablers	3% of HSS grants budgets to DHI; 1% of SFA Global Budget to DHI
		# and/or % countries with gender-intentional roadmap	5 High Impact Countries; 25% all other Gavi-supported countries	# and/or % countries reporting increased maturity in 1 DHI enabler	5 High Impact Countries; 25% All other Gavi-supported countries		
# and/or % countries receiving technical assistance and capacity building support for DHI interventions, enablers and gender activities	5 High Impact Countries; 50% All other Gavi-supported countries	# and/or % countries with foundational package across the 3 systematic DHI priority interventions implemented	5 High Impact Countries; 25 % all other Gavi-supported countries	# and/or % countries reporting using data from DHI in country EPI plans and/or reports	5 High Impact Countries; 25% All other Gavi-supported countries	Gavi convening and/or participating in DHI donor and technical fora	5 DHI donor and/or technical fora
# and/or % countries with country prioritisation and costed roadmaps/ plans with DHI interventions, enablers, and gender activities	5 High Impact Countries; 25% All other Gavi-supported countries	# and/or % countries using data from DHI in their country reports to Gavi	5 High Impact Countries; 75% all other Gavi-supported countries	# and/or % countries reporting improved performance indicators in one area or more related to zero-dose & under-immunised children; routine and/or campaign immunisation coverage and equity; community engagement; accountability; supply management; management of VPD outbreaks	5 High Impact Countries; 25% All other Gavi-supported countries	# and/or % Countries with 1 nationally scaled systematic DHI priority intervention as a proxy for national scaled use of DHI	5 High Impact Countries; 25% All other Gavi-supported countries

other fragile settings. As in most fragile countries, the digital health ecosystem is in CAR scoring at 1.7/5 is under construction. The health information system is highly fragmented aggravated by the lack of a national digital health strategy which paved the way for uncoordinated development partner-led initiatives for several years, often not replicable nor sustainable. In the absence of formal structures, a programme and partners approach has been used to support CAR to develop the National DHI for Immunisation Roadmap. A greater focus has been placed on incremental foundational investments in governance, strategy, and standards alongside strengthening the national health information system that can be optimised gradually in each area (data use, surveillance, real time monitoring of campaigns, last mile eLMIS) complemented by interoperable low-cost solutions that can be used at the health facility/community level to increase timeliness in landlocked zone. In addition, the country has built some momentum in electronic disease surveillance building on stronger donor coordination.

All pilot countries, to a large extent, struggled to conduct a systematic gender analysis and develop plans to address prioritised challenges. Thus, targeted technical support to countries to more systematically analyse, plan, implement, and monitor their gender-related activities using the Gender Intentional Digital Health Interventions and Enablers: An Analysis, Design, and Monitoring Guide is recommended in collaboration with the implementation and monitoring of the Gender Policy.

Monitoring, evaluation and learning plan

The monitoring, evaluation, and learning (MEL) plan includes key performance and process indicators and targets for Gavi to monitor the operationalisation of

the DHI Strategy over four years and to assess project outcomes and strategic objectives in contribution to the achievement of Gavi's overall 5.0 Strategy. The various indicators align directly to the Theory of Change to enable Gavi to both quantify and qualify its contributions to digital transformation of immunisation.

The MEL Plan includes a broad range of indicators to capture proportion of country and SFA investments and funding, Gavi participation in various DHI and immunisation coordinating bodies, and countries with one nationally scaled DHI intervention at the global level. At country level, it prioritises monitoring and evaluating greater EPI and DHI governance body coordination, increased maturity of the one DHI enabler, increased use of data, and improved immunisation programme performance (immunisation coverage and equity- with a focus on reduction in zero-dose and immunisation completion, reduced stock out or increased stock visibility, and decreased vaccine-preventable disease incidence) through targeted DHI interventions. These are supported through output indicators related to participation of EPI in DHI coordinating bodies, Gender-intentional National DHI Costed Roadmaps, implementation of foundational packages, and the use of DHI data in Gavi reports. Finally, inputs in the form of various resources, technical assistance, and prioritisation will be tracked to assess the linkages between inputs, outputs, and outcomes.

To measure progress, a baseline will be set for inputs, outputs, and outcomes at the start of 2023. Inputs and outputs will be tracked and reported on an annual basis. A mid-term evaluation will be conducted in June 2024 to document progress on outcomes to inform any needed prioritisation or course correction for the rest of the Gavi 5.0 strategic period. It is recommended

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Box 4: Learning questions to document success stories, lessons, and case studies

- What are the main success stories and lessons for each of the 6 DHI for immunisation priorities in 2024 to inform the rest of the strategic period with a targeted focus on contributions towards reduced zero-dose and under-immunised children?

- What are the most effective pathways transitioning proven Covid-19 DHI innovations into Routine Immunisation?

- What are the most effective strategies and practices for increasing EPI engagement in DHI coordinating bodies?

- What are the most effective practices and enablers for increasing sub-national data use? (collaboration with IA2030 Data Strategy Group)

- What effects do gender analyses, prioritisation, planning for DHI interventions and enablers have on the gender digital divide? What are the most effective practices? (collaboration with Gender WG)

- Which DHI interventions and enablers are most effective for increasing vaccine confidence and demand? (collaboration with Vaccine Demand Hub)

to set up web-based monitoring mechanisms to track downloads and collect user experiences and feedback on the use of the various guides, tools, and resources to inform future updates and use.

In addition, learning questions ask how and to what extent DHI investments will improve the effectiveness of immunisation programmes, especially in identifying and reaching zero-dose and under-immunised children.

Larger- scale effectiveness studies will contribute to the evidence base on DHI for immunisation and facilitate the adoption of effective DHI tools and technologies for future improvements. They have been prioritised for areas where more evidence is needed.

Risk Mitigation

The Gavi DHI Strategy recognises potential risks and barriers to complete implementation but also highlights the risks associated with failing to support the integrated and sustainable digital transformation of immunisation programmes in Gavi-supported countries. Without digital health information, it will be impossible for Gavi to achieve and/or measure the achievement of Gavi 5.0 Strategic Goals.
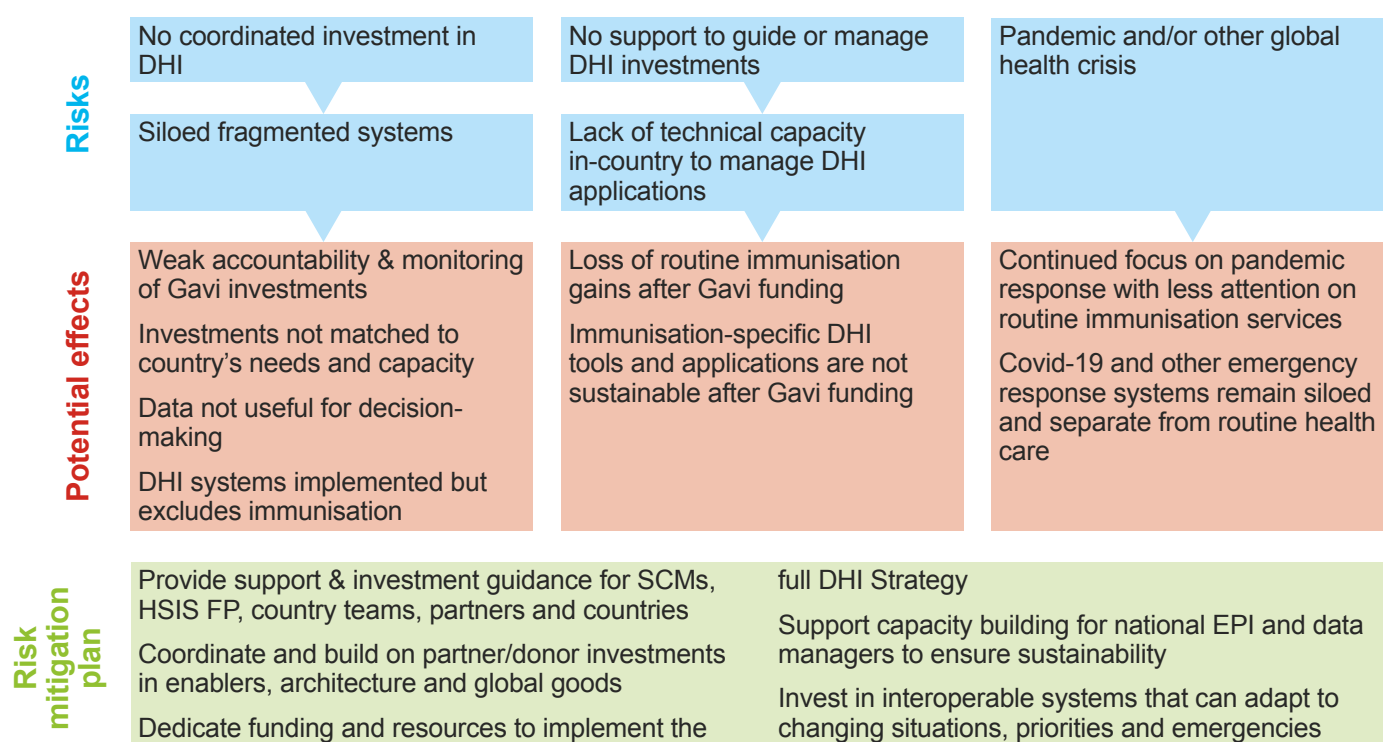
The risk mitigation plan is incorporated into the operationalisation of the Gavi DHI Strategy to prevent harm and failure as much as possible. A key strategic risk-mitigating investment will be in support for the development of national country costed digital health for immunisation roadmaps. This will ensure that countries prioritise digital health interventions,

> **Box 5: Evaluation and large-scale effectiveness studies (1 to 2 countries per study)**
>
> - How does Gavi support for Costed DHI for Immunisation Road Maps, country engagement DHI bodies, support for enablers work together to result in scaled DHI interventions and improved data availability/use?
>
> - What effects does gender-intentional programming and policy-making have on DHI interventions and enablers?
>
> - What impact do scaled Digital Health Global Goods have on immunisation coverage, equity, and zero-dose across three out of 6 DHI priority intervention areas?
>
> - Large-scale cost-effectiveness studies focused on coverage, equity and zero-dose: Digital microplanning, Digital supply chain information systems (eLMIS), and e-Surveillance data systems integration for vaccine preventable diseases

enablers, and gender-related activities that are specifically targeted towards the immunisation priorities and challenges and digital health maturity of the country.

Figure 7: Gavi DHI Strategy Risks & Risk Mitigation Plans

Risks	No coordinated investment in DHI	No support to guide or manage DHI investments	Pandemic and/or other global health crisis
	Siloed fragmented systems	Lack of technical capacity in-country to manage DHI applications	
Potential effects	Weak accountability & monitoring of Gavi investments Investments not matched to country's needs and capacity Data not useful for decision-making DHI systems implemented but excludes immunisation	Loss of routine immunisation gains after Gavi funding Immunisation-specific DHI tools and applications are not sustainable after Gavi funding	Continued focus on pandemic response with less attention on routine immunisation services Covid-19 and other emergency response systems remain siloed and separate from routine health care
Risk mitigation plan	Provide support & investment guidance for SCMs, HSIS FP, country teams, partners and countries Coordinate and build on partner/donor investments in enablers, architecture and global goods Dedicate funding and resources to implement the	full DHI Strategy Support capacity building for national EPI and data managers to ensure sustainability Invest in interoperable systems that can adapt to changing situations, priorities and emergencies	

Conclusion

In the past decade, the world has experienced stagnating vaccine uptake and coverage, increasing vaccine hesitancy and more complex challenges in reaching the last mile, leaving millions of zero-dose and under-immunised children throughout the world without the full benefit and protection from vaccine-preventable diseases. The current approaches, systems, and structures for promoting and delivering vaccines seem to have reached a plateau of effectiveness. New solutions, creative thinking and more effort is needed to achieve Gavi's deliberately ambitious focus on reaching zero-dose and under-immunised children in the most vulnerable countries.

Digital Transformation of Immunisation: Gavi, The Vaccine Alliance Digital Health Information Strategy outlines how digital health information interventions, enablers, and gender-related activities can be leveraged **to leave no child behind with immunisation** by supporting national immunisation systems to extend the reach and efficiency of their current immunisation programme assets, resources, and people to reach more children and deliver effective vaccines to all communities. The Strategy uses Gavi's comparative advantage in the field to build on existing evidence to help countries develop national DHI for immunisation roadmaps and work in close partnership with global and national stakeholders to support their implementation. With coordinated and dedicated effort, digitally transformed immunisation programmes can lead the way for a future of sustainable and effective digital health systems for primary health care that serve all people as countries strive to reach universal health coverage.

Annex A: Gavi DHI Strategy Development Process

Gavi invited partners and stakeholders to participate in the DHI Strategy development process over the past 3 years, including a dedicated Technical Committee to provide consistent guidance and oversight since the beginning of the Consultation and Content Development phase in October 2021. The Technical Committee included Gavi staff from prioritised departments, Alliance members, DHI practitioners and representatives from partner implementing organisations.

Because of the broad range of topics, key informant interviews with a standard interview guide were also conducted with 40 individuals from partner organisations. Virtual focus group discussions on donor alignment, country segmentation and innovation were conducted to help gather information on these key topics. A participatory design workshop was held with a wide group of stakeholders and led to the creation of the visual graphic illustrations representing the vision, case and country journey. In total, 73 individuals from 23 organisations were consulted as part of the strategy development process, provided feedback through discussions, interviews, focus groups and workshops and reviewed supporting documents, drafts and critical elements of the Strategy.

As a complementary and parallel process, six technical briefs lwere developed to provide a deep dive into three immunisation technology applications and three lenses: Sub-national data-use, vaccine-preventable disease surveillance, reducing loss to-follow-up, gender, COVID-19 innovations, and country segmentation. Each of these technical briefing documents included semi-systematic literature reviews and three rounds of peer-review with the Technical Committee and outside experts in each topic. See the table in Annex B for links to these and other related resources.

Figure 8: Gavi DHI Strategy Participatory Design Workshop Best Advise
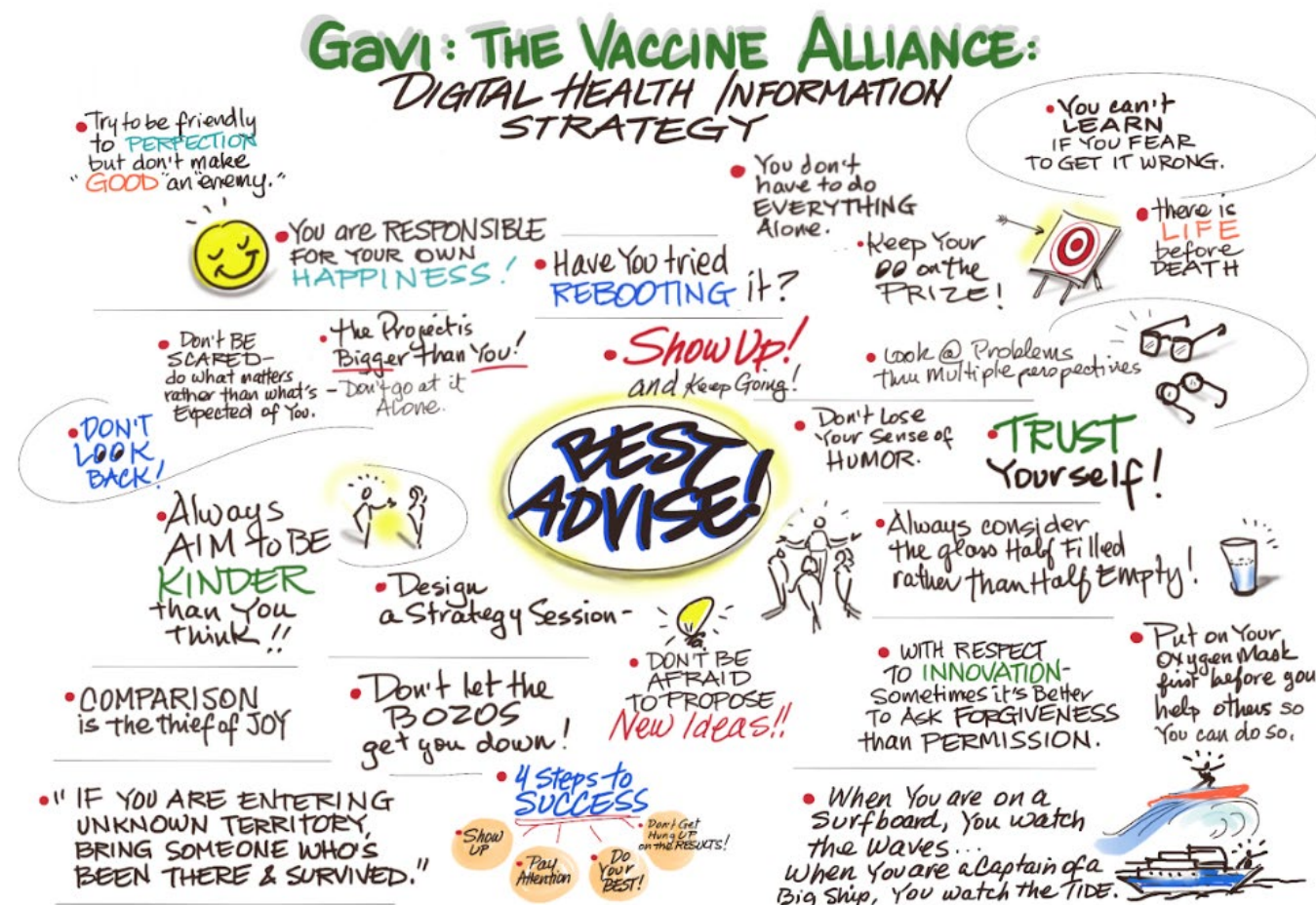
Table 8: Gavi DHI Strategy Technical Committee

Carine Gachen Albane De Gabrielli Marion Menozzi-Arnaud Riswana Soundardjee	Gavi, the Vaccine Alliance
Karin Källander Alex Muhereza	UNICEF
Jan Grevendonk	WHO – Headquarters
Mo Chibi	WHO – Africa Regional Office
Dan Rosen	U.S Centers for Disease Control and Prevention
Alain Labrique	Johns Hopkins University, Department of International Health and Center for Digital Health
Tove Ryman	Bill and Melinda Gates Foundation
Jai Ganesh	Asia eHealth Information Network – AeHIN
Steven Wanyee	Health Informatics in Africa – HELINA
Dorothy Leab	GaneshAid
Patricia Mechael Sarah Chaney	HealthEnabled

Annex B: Foundational Inputs for Gavi's DHI Strategy

Table 9: Gavi Digital Health Information Strategy Resources

Priority area	Learning	Tools and guidance
Identification and reach of zero-dose and under-immunised children	Improving Immunisation Coverage and Equity through the Effective Use of Geospatial Technologies: A Landscape Analysis and Theory of Change (Sept 2020) EN & FR Every Child on the Map: A Theory of Change Framework for Improving Childhood Immunization Coverage and Equity Using Geospatial Data and Technologies (Aug 2021) Large-scale effectiveness study on Mapping for Health in DRC	Leveraging Geospatial Technologies and Data to Strengthen Immunisation Programming: Rapid guidance for investment planning (March 2021) EN & FR Digital Microplanning Guidance and Playbook
Digital supply chain information systems (eLMIS)	Evaluation of cost effectiveness of 3 Electronic Logistic Management Information Systems (eLMIS)	eLMIS Scale Up Strategy
Real-time planning and monitoring of immunisation campaigns	Digital health for real-time monitoring of a national immunisation campaign in Indonesia: a large-scale effectiveness evaluation (Dec 2020) The Use of Digital Technologies and Approaches for Real-Time Monitoring of Supplementary Immunization Activities: Good practices and lessons learned (Jan 2021) Rwanda technical briefing: use of RTM for COVID19 surveillance and vaccination	Planning and Implementing Real-time Monitoring (RTM) Approaches to Strengthen Vaccination Campaigns: Guidance for country partners EN & FR RTM Planning Playbook
Effective sub-national data use	A Gavi, the Vaccine Alliance Look Back and Forward: DHIS2 for Immunisation DHIS2 Country Case Studies (Ghana, Mali) DHIS2 & Immunisation Resource Guide & Evidence Review (June 2020) Sub-national multi-source data for immunisation programme decision-making - Technical Brief Series (March 2022)	Guide to Effective Sub-national Data Triangulation, Integration, Use and Quality Updated Subnational DHIS2 Data Use Guidance and Playbook

Priority area	Learning	Tools and guidance
Digital interventions supporting vaccine confidence and demand for immunisation	Finding the Signal through the Noise: A landscape review and framework to enhance the effective use of digital social listening for immunisation demand generation (June 2021) EN & FR Large-scale effectiveness study of Zindagi Mehfooz - a suite of digital health tools to improve immunisation demand and completion Evaluation of cost effectiveness of 3 Electronic Immunisation Registries (EIR) Increasing demand for immunisation, preventing and reducing loss to follow-up, and promoting community engagement through the effective use of DHI interventions - Technical Brief Series (March 2022)	Digital Health Information Interventions for Demand Generation: A guide for selecting appropriate tools and technologies
Electronic VPD surveillance	Timely detection of vaccine-preventable disease for targeted vaccination and outbreak response - Technical brief series (March 2022)	
Cross-Cutting	Gavi Digital Health Information Prioritisation Document Country Segmented Approach to Digital Health Interventions & Enablers Briefing Document Gender Digital Divide & Digital Health Information for Immunisation - Technical Brief Series (March 2022) Covid-19 Innovations and digital applications for routine immunisation - Technical Brief Series (March 2022)	Guidance on the use of digital solutions to support the COVID-19 national deployment and vaccination plans EN -FR Gender-Intentional Digital Health Interventions & Enablers: A Rapid Guide for Analysis, Planning and Monitoring Gavi Digital Health Information Country Orientation National Digital Health Information Costed Country Roadmap Toolkit

**Gavi Digital Health Information Resources Orientation

Annex C: Monitoring, Evaluation and Learning Plan

Learning Questions	Use case: timing / key decisions	Learning Activities	Resources required and source	Dissemination plan
What are the main success stories and lessons for each of the 6 DHI for immunisation priorities in 2024 to inform the rest of the strategic period?	This mid-term review will help inform expansion, continuation, and/or reframing of activities in the last 1.5 years of the strategic period.	Literature and document review Rapid Data collection Audit Evaluation	External partner	Publications promoted through Gavi website, webinars, and conference presentations
What are the most effective pathways transitioning proven Covid-19 DHI innovations into Routine Immunisation?	This year one review will help inform expansion, continuation, and/or reframing of activities in the last 2.5 years of the strategic period.	Literature and document review Rapid data collection Review	External partner	Publications promoted through Gavi website, webinars, and conference presentations
What are the most effective strategies and practices for increasing EPI engagement in DHI coordinating bodies?	This mid-term review will help inform expansion, continuation, and/or reframing of activities in the last 1.5 years of the strategic period.	Literature and document review Rapid data collection Review	Alliance member and/or extended data partner	Publication promoted through Gavi website, peer-reviewed publication, webinars, and conference presentations
What are the most effective practices and enablers for increasing sub-national data use? (collaboration with IA2030 Data Strategy Group)	This mid-term review will help inform expansion, continuation, and/or reframing of activities in the last 1.5 years of the strategic period.	Literature and document review Rapid data collection Review Evaluation	Alliance member and/or extended data partner	Publication promoted through Gavi website, peer-reviewed journal blog/ opinion piece, webinars, and conference presentations
What effects do gender analyses, prioritisation, planning for DHI interventions and enablers have on the gender digital divide? What are the most effective practices? (collaboration with Gender WG)	This mid-term review will help inform expansion, continuation, and/or reframing of activities in the last 1.5 years of the strategic period.	Literature and document review Rapid data collection Review	Alliance member and/or extended data partner	Publication promoted through Gavi website, peer-reviewed publication, webinars, and conference presentations
Which DHI interventions and enablers are most effective for increasing vaccine confidence and demand? (collaboration with Vaccine Demand Hub)	This mid-term review will help inform expansion, continuation, and/or reframing of activities in the last 1.5 years of the strategic period.	Literature and document review Rapid data collection Review Evaluation	Alliance member and/or extended data partner	Publication promoted through Gavi website, peer-reviewed journal blog/ opinion piece, webinars, and conference presentations

Additional Gavi Digital Health Information Strategy Evaluation and Large-scale Effectiveness Studies (1-2 countries per study)

- How do investments in DHI interventions and enablers for immunisation affect scale and sustainability?

- What effects does gender-intentional programming and policy-making have on DHI interventions and enablers?

- What impact do scaled Digital Health Global Goods have on immunisation coverage, equity, and zero-dose across three out of 6 DHI priority intervention areas?

- Large-scale cost-effectiveness studies focused on coverage, equity and zero-dose:

  - Digital microplanning

  - Digital supply chain information systems

  - e-Surveillance data systems integration for vaccine preventable diseases

Gavi DHI Strategy MEL Plan Activities		2023	2024	2025
Baseline Report	▓			
Design, implement, conduct, and analyze Gavi DHI Strategy Annual Survey and Document Review & Report		▓	▓	▓
Document success stories and lessons learned across 6 DHI intervention areas, enablers, and gender activities – including documenting Covid-19 transitions to routine immunisation		▓	▓	▓
Lessons learned workshop(s) – virtual consultations and in-person workshop (1)		▓	▓	▓
Rigorous mixed methods research study (1 country/segment): How do investments in DHI interventions and enablers for immunisation affect scale and sustainability with focus on effects on zero dose and under-under-immunised children?		▓	▓	
Rigorous qualitative research study (3 countries with different approaches to gender): What effects does gender-intentional programming and policy-making have on DHI interventions and enablers?			▓	
Rigorous mixed methods research study: What impact do scaled Global Goods have on immunisation coverage, equity, and zero-dose across three out of 6 DHI priority intervention areas (starting with DHIS2)?		▓	▓	
Large-scale mixed methods cost-effectiveness studies focused on coverage, equity and zero-dose: • Digital microplanning • Digital supply chain information systems • e-Surveillance data systems integration for vaccine preventable diseases		▓	▓	▓
Final Review/ Evaluation of Gavi DHI Strategy & Preparation for Gavi 6.0				▓

Annex D: Operational Plan

DHI Priorities	IRMMA	Gavi Goals	IA2030 Data	Activity	Description	Package	2022	2023	24-25	Proposed SFA
1. Zero dose identification & reach	Identify	Strengthen health systems to increase equity in immunization	11. Develop guidance for selection and implementation of tools and approaches to meet objectives of converting data into actionable insights, define target populations, identify zero-dose children, and other critical areas to meet immunization goals in countries	1.1 Adapt and/ or create global guideline and eLearning course facilitated by denominator data at subnational level	Adapt a global multi-lingual guideline to improve analysis and use of geospatial data and Denominator Triangulation Dashboard to identify areas with the highest number of missed children especially at subnational levels.	Global	x			ZD
	Identify	Strengthen health systems to increase equity in immunization	11. Develop guidance for selection and implementation of tools and approaches to meet objectives of converting data into actionable insights, define target populations, identify zero-dose children, and other critical areas to meet immunization goals in countries	1.2 Develop framework to improve subnational level population estimation	Support the development of a guidance on harmonisation and validation of accurate population estimates at subnational levels. This includes aggregation of lessons learned, guidance, and creating peerlearning opportunities and development of eLearning course material	Global	x			ZD
	Identify	Strengthen health systems to increase equity in immunization	11. Develop guidance for selection and implementation of tools and approaches to meet objectives of converting data into actionable insights, define target populations, identify zero-dose children, and other critical areas to meet immunization goals in countries	1.3 Support fragile countries to model Immunisation service accessibility	Provide targeted technical assistance to fragile countries for modeling immunisation services including setup or strengthening of foundational enablers like Master Facility List including the use of AccessMods	Global		x		ZD
	Identify	Strengthen health systems to increase equity in immunization	12. Provide easily accessible global guidance and documentation on interoperability (including country readiness assessments, existing guidance), to link and exchange data across critical systems such as CRVS, surveillance systems, lab systems, and other HIS to immunization systems.	1.4 Develop and disseminate a global guidance for use of geospatial data for microplanning	A global guidance on Systematic use of geospatial data and technologies at national level for microplanning	Global	x			ZD
	Identify	Strengthen health systems to increase equity in immunization	11. Develop guidance for selection and implementation of tools and approaches to meet objectives of converting data into actionable insights, define target populations, identify zero-dose children, and other critical areas to meet immunization goals in countries	1.5 Develop and test the use of digital technologies and data at community level	Develop, disseminate, and test a guidance on digital Community Registry that helds facilitate immunization planning and missed settlement identification	Regional		x		ZD
	Identify	Strengthen health systems to increase equity in immunization	1. Align data leadership frameworks and develop a coordinated plan for action to advance harmonization of capacity building efforts e.g., data curricula and leadership institutes. Ensure frameworks are user friendly with illustrative application case studies.	1.6 Develop guidance and playbook for creating linkages with existing foundational systems and support country planning and costing of evidence-based digital public goods for GIS-based support for immunization programs.	"Guidance and Playbook for systematically integrating Birth Notification in national immunisation programs. Support countries in the contextualization, planning, costing, implementation, evidence generation and scaling of digital global goods for GIS-based support of immunization programs (including microplanning, core data registries, subnational equity mapping), and integration of geospatial products (high-res estimates, geographic accessibility mapping).					
	Monitor	Strengthen health systems to increase equity in immunization	11. Develop guidance for selection and implementation of tools and approaches to meet objectives of converting data into actionable insights, define target populations, identify zero-dose children, and other critical areas to meet immunization goals in countries	1.7 Strengthen geospatial health Community of Practice and regional GIS technical capacity	Strengthen global geospatial health CoP and regional GIS technical capacity in UNICEF/WHO (GIS centers of excellence/technical hubs) for knowledge management, sharing, and best-practice dissemination. Facilitate global guidance and digital public goods including cross-country knowledge exchange and learning, leveraging regional partnerships, communities of practice, working groups and meetings (e.g. EPI managers)	Global				Monitoring and Learning (Data)

DHI Priorities	IRMMA	Gavi Goals	IA2030 Data	Activity	Description	Package	2022	2023	24-25	Proposed SFA
	Monitor	Strengthen health systems to increase equity in immunization	2. Provide mechanisms to ensure that information collected on resources needed for running immunisation programmes is shared back to the country level with both MOH and ministry of finance (MOF) officials to better inform decision-making.	1.8 Strengthen regional GIS technical capacity in UNICEF and WHO	Strengthen regional GIS technical capacity in UNICEF/WHO (regional posts, GIS centres of excellence/technical hubs)	Global				Monitoring and Learning (Data)
	Reach	Strengthen health systems to increase equity in immunization		1.9 Establish package of digital global goods for GIS in support of immunisation programs	Establish package of digital global goods for GIS-based support of immunization programs (including microplanning, core data registries, subnational equity mapping), including dedicated modules for integration of geospatial products (high-res estimates, geographic accessibility mapping) into DHIS2 dashboards (e.g. BNA, standard EPI packages) and district wide/PHC planning tools	Global				ZD
	Reach	Strengthen health systems to increase equity in immunization		1.9 Establish package of digital global goods for GIS in support of immunisation programs	Establish package of digital global goods for GIS-based support of immunization programs (including microplanning, core data registries, subnational equity mapping), including dedicated modules for integration of geospatial products (high-res estimates, geographic accessibility mapping) into DHIS2 dashboards (e.g. BNA, standard EPI packages) and district wide/PHC planning tools	Global				ZD
2. SCIS - eLMIS	Reach	Strengthen health systems to increase equity in immunization	12. Provide easily accessible global guidance and documentation on interoperability (including country readiness assessments, existing guidance), to link and exchange data across critical systems such as CRVS, surveillance systems, lab systems, and other HIS to immunization systems.	4.1 eLMIS	eLMIS – estimates/4 years	Regional				Supply Chain
	Reach	Strengthen health systems to increase equity in immunization	12. Provide easily accessible global guidance and documentation on interoperability (including country readiness assessments, existing guidance), to link and exchange data across critical systems such as CRVS, surveillance systems, lab systems, and other HIS to immunization systems.	4.2 eLMIS	eLMIS – estimates/4 years	Regional				Supply Chain
3. Real time monitoring of campaigns	Reach	Introduce and scale up vaccines	5. Identify the skill sets needed for data use versus data collection and invest in capacity building for these skills at all levels.	3.1 Develop, update, and disseminate guidance RTM approaches to immunisation	Develop, update, disseminate, or test guidance on use of real time monitoring approaches for immunisation campaigns globally in English and French. Update lessons learned including strenghtening routine immunisation with RTM	Regional	x	x		Monitoring and Learning (Data)
	Reach	Introduce and scale up vaccines	5. Identify the skill sets needed for data use versus data collection and invest in capacity building for these skills at all levels.	3.2 Facilitate country use of digital Microplanning for RTM	Develop and disseminate detailed guideline for digital Microplanning for RTM including sharing bast practices and peer learning between countries	Regional		x		Monitoring and Learning (Data)
	Reach	Introduce and scale up vaccines	12. Provide easily accessible global guidance and documentation on interoperability (including country readiness assessments, existing guidance), to link and exchange data across critical systems such as CRVS, surveillance systems, lab systems, and other HIS to immunization systems.	3.3 Survey and evaluate use of Geo-Tags	Develop global guidance guidance on collection of geo-tags during surveys. Independently evaluate Geotags and their uses	Regional	x			Monitoring and Learning (Data)

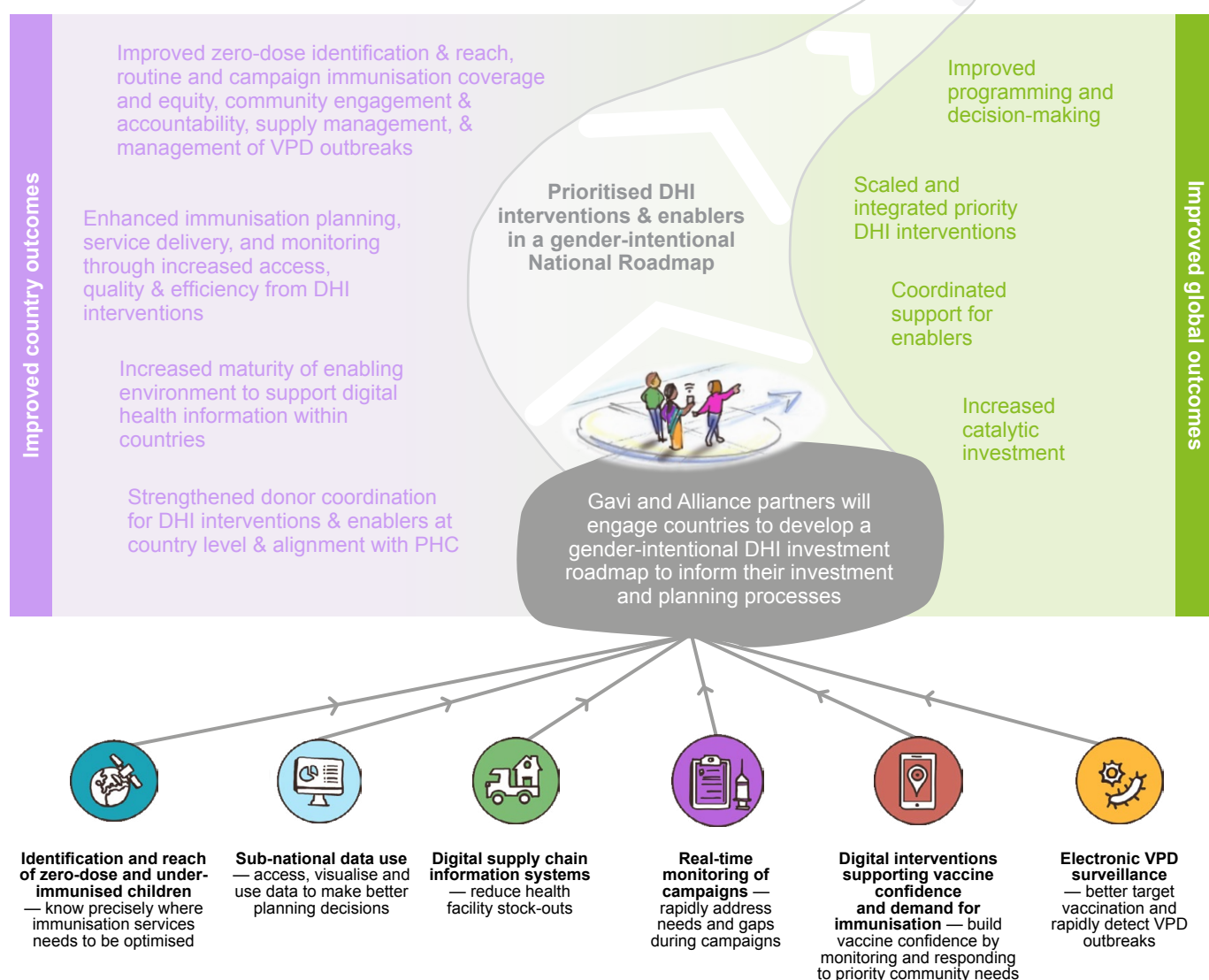| DHI Priorities	IRMMA	Gavi Goals	IA2030 Data	Activity	Description	Package	2022	2023	24-25	Proposed SFA
4. Subnational data use	Reach	Strengthen health systems to increase equity in immunization	12. Provide easily accessible global guidance and documentation on interoperability (including country readiness assessments, existing guidance), to link and exchange data across critical systems such as CRVS, surveillance systems, lab systems, and other HIS to immunization systems.	2.1 Design and disseminate a global framework for Integrated District Dashboard	Design a global framework that facilitates strategic use of data through an integrated visualisation of key analyses across coverage, stock, surveillance and operational data	Regional	x			ZD
	Reach	Strengthen health systems to increase equity in immunization	5. Identify the skill sets needed for data use versus data collection and invest in capacity building for these skills at all levels.	2.2 Develop and disseminate eLearning tool for integrated dashboard use	Develop, disseminate and test eLearning course for Integrated District Dashboard adaptation and use	Regional	x	x		ZD
		Introduce and scale up vaccines	12. Provide easily accessible global guidance and documentation on interoperability (including country readiness assessments, existing guidance), to link and exchange data across critical systems such as CRVS, surveillance systems, lab systems, and other HIS to immunization systems.	2.3 Develop and disseminate strategies and tools for immunisation BNA	Develop tools including learning modules and regularly upgrade the Immunisation Bottle Neck Analysis App to keep relevant to country needs	Regional	x	x		ZD
	Reach	Strengthen health systems to increase equity in immunization	12. Provide easily accessible global guidance and documentation on interoperability (including country readiness assessments, existing guidance), to link and exchange data across critical systems such as CRVS, surveillance systems, lab systems, and other HIS to immunization systems.	2.4 Develop system for integrated immunisation information Systems	Facilitate an Interoperability guidance and standards aggregation for integration of Immunisation Information System (including, but not limited to Cov, LMIS, Surv, CRVS, Demand, HRIS, Lab etc.)	Regional	x	x	x	ZD
	Reach	Strengthen health systems to increase equity in immunization	12. Provide easily accessible global guidance and documentation on interoperability (including country readiness assessments, existing guidance), to link and exchange data across critical systems such as CRVS, surveillance systems, lab systems, and other HIS to immunization systems.	2.5 Support and document case studies that advance the use of multi-source data	Support and document case studies that advance the use of multi-source data, beginning with coverage and equity, VPD surveillance, and stock management and expanding to demand data and AEFI. Commission evaluation where necessary to document and disseminate learnings.	Regional	x	x		ZD
	Reach	Strengthen health systems to increase equity in immunization	12. Provide easily accessible global guidance and documentation on interoperability (including country readiness assessments, existing guidance), to link and exchange data across critical systems such as CRVS, surveillance systems, lab systems, and other HIS to immunization systems.	2.6 Develop a comprehensive Immunisation data toolkit for data-driven decision making	Facilitate the development of a comprehensive immunisation data toolkit to aid data-driven decision making with a focus on promotion of standard indicators, systems integration, data triangulation, data quality, and data use	Regional	x	x		Monitoring and Learning (Data)
5. Vaccine confidence & demand generation	Monitor	Introduce and scale up vaccines	3. Support the Vaccination Demand Hub to measure demand for both demand side data and behavioral-informed interventions.	5.1 Digitise Behavioural and Social Determinants of Immunisation (BeSD) Info System	Digitalisation of BeSD survey tool to incorporate vaccine confidence data in routine informaiton system	Regional	x	x		Demand & Vx hesitancy
	Monitor	Introduce and scale up vaccines	3. Support the Vaccination Demand Hub to measure demand for both demand side data and behavioral-informed interventions.	5.2 Asses priority DHI areas for targeted demand interventions	Develop and standardise digitally-assisted tools and approaches for the systematic assessment of priority areas for targeted demand interventions.	Regional	x			Demand & Vx hesitancy

DHI Priorities	IRMMA	Gavi Goals	IA2030 Data	Activity	Description	Package	2022	2023	24-25	Proposed SFA
6. eSURV (decentralized Dx and outbreak mgnt.)	Reach	Introduce and scale up vaccines	9. Maintain a robust health facility-based VPD surveillance system that can be used to rapidly detect VPD outbreaks.	6.1 Develop a multi-lingual tool eSurveillance readiness assessment tool	Development of a readiness assessment tool for countries interested in expanding their electronic data systems to be in line with the global comprehensive VPD surveillance guidelines from WHO.	Global	x			Vaccination targeting
	Reach	Introduce and scale up vaccines	9. Maintain a robust health facility-based VPD surveillance system that can be used to rapidly detect VPD outbreaks.	6.2 Support further development and expansion of DHIS2 modules and packages	"Support software development of DHIS2 eSurveillance modules and packages. Support the development of the content with designated SMEs"	Global	x			Vaccination targeting
	Reach	Introduce and scale up vaccines	9. Maintain a robust health facility-based VPD surveillance system that can be used to rapidly detect VPD outbreaks.	6.3 Develop and disseminate eLearning material for multi-sourced data systems integration	Increase learning on how to operationalize integration and interoperability of e-surveillance information system with other information system (for example, HMIS coverage data, e-IDSR, operational data), leading to data availability for triangulation and identification of areas with immunity gap	Global		x		Vaccination targeting
	Reach	Introduce and scale up vaccines	6. Link post-outbreak and emergency root cause analysis data back to routine immunisation data by improving coordination between emergency response and health systems-strengthening groups.	6.4 Develop and disseminate eLearning material for subnational eSurveillance data use	Development of e-learning material on how to use data at district level for outbreak detection and response and for triangulation of data to identify areas with immunity gap, thus increase number of zero dose children (based on existing guidance on data triangulation)	Regional		x		Vaccination targeting
	Reach	Introduce and scale up vaccines	9. Maintain a robust health facility-based VPD surveillance system that can be used to rapidly detect VPD outbreaks.	6.5 Strengthen regional VPD surveillance and data use	Strengthening regional platform for VPD surveillance information system and regional data use	Regional	x			Vaccination targeting
	Reach	Introduce and scale up vaccines	9. Maintain a robust health facility-based VPD surveillance system that can be used to rapidly detect VPD outbreaks.	6.6 Galvanize community of practice for VPD surveillance and data use	Building community of practice around VPD surveillance data use involving multi-decisplinary stakeholder groups.	Regional	x			Vaccination targeting
7. Cross cutting (MEL plan, Gender, DHI Enablers, DHIS2 TA)	Monitor	Strengthen health systems to increase equity in immunization	12. Provide easily accessible global guidance and documentation on interoperability (including country readiness assessments, existing guidance), to link and exchange data across critical systems such as CRVS, surveillance systems, lab systems, and other HIS to immunization systems.	7.1 Develop and disseminate a global, multi-lingual Playbook for countries to prioritise DHI for their immuniastion needs	Support development of a comprehensive playbook in English and French for countries to prioritise DHI interventions and enablers based on their immunisation priorities and DHI ecosystem maturity	Global	x	x		Monitoring and Learning (Data)
	Monitor	Strengthen health systems to increase equity in immunization	12. Provide easily accessible global guidance and documentation on interoperability (including country readiness assessments, existing guidance), to link and exchange data across critical systems such as CRVS, surveillance systems, lab systems, and other HIS to immunization systems.	7.2 Develop and disseminate a global country DHI investment guidance for enablers	Develop a uniform template for Country DHI Budgeting Guidance for software, maintenace capacity, and infrastructure (Connectivity, computing devices, and electricity)	Global	x	x		Monitoring and Learning (Data)
	Monitor	Strengthen health systems to increase equity in immunization	12. Provide easily accessible global guidance and documentation on interoperability (including country readiness assessments, existing guidance), to link and exchange data across critical systems such as CRVS, surveillance systems, lab systems, and other HIS to immunization systems.	7.3 DHIS2 Global Contract	DHIS2 Global Contract	Global	x			Monitoring and Learning (Data)

DHI Priorities	IRMMA	Gavi Goals	IA2030 Data	Activity	Description	Package	2022	2023	24-25	Proposed SFA
	Monitor	Strengthen health systems to increase equity in immunization	12. Provide easily accessible global guidance and documentation on interoperability (including country readiness assessments, existing guidance), to link and exchange data across critical systems such as CRVS, surveillance systems, lab systems, and other HIS to immunization systems.	7.4 Maintain DHIS2 WHO Package	Support the continuous maintenance of the DHIS2 WHO package for the different disease areas, addiitng new diseases and refining and updating existing diseases for new uses, particularly integration with other systems	Global	x	x	x	Monitoring and Learning (Data)
	Monitor	Strengthen health systems to increase equity in immunization	12. Provide easily accessible global guidance and documentation on interoperability (including country readiness assessments, existing guidance), to link and exchange data across critical systems such as CRVS, surveillance systems, lab systems, and other HIS to immunization systems.	7.5 Facilitate the development of Gender Intentional DHI budgeting guidance	Develop tools, guides, training and resources to help countries include gender and power analyses in the funding requests, design, implementation, monitoring and reporting mechanisms for all digital health and data-related activities	Regional	x			Gender
	Monitor	Strengthen health systems to increase equity in immunization	12. Provide easily accessible global guidance and documentation on interoperability (including country readiness assessments, existing guidance), to link and exchange data across critical systems such as CRVS, surveillance systems, lab systems, and other HIS to immunization systems.	7.6 Gender Intentional DHI capacity building for partners	Build Gender capacity among DHI partners. Require partners to do a gender analysis from the beginning, demonstrate that they are responding to specific challenges and that gender is integrated into MEL frameworks	Global	x			Gender
	Monitor	Strengthen health systems to increase equity in immunization	12. Provide easily accessible global guidance and documentation on interoperability (including country readiness assessments, existing guidance), to link and exchange data across critical systems such as CRVS, surveillance systems, lab systems, and other HIS to immunization systems.	7.7 Facilitate gender Intentional DHI tool selection	Develop clear criteria (an equity framework) for selecting technology and digital health tools that are Gender Intentional. Involve end users in the selection process.	Global		x		Gender
	Monitor	Introduce and scale up vaccines	7. Develop global guidelines for life course standards for data and programs.	7.8 Develop resources and guidance to support DHI facilitated introduction of new malaria vaccine	"Develop playbook and investment guide in support of pilot testing and documentation of malaria vaccine introduction and rollout. Leverage lessons from other DHI enabled vaccine rollout"	Global	x			Monitoring and Learning (Data)
	Monitor	Introduce and scale up vaccines	12. Provide easily accessible global guidance and documentation on interoperability (including country readiness assessments, existing guidance), to link and exchange data across critical systems such as CRVS, surveillance systems, lab systems, and other HIS to immunization systems.	7.9 Monitoring of DHI strategy	"Establish baseline report. Design, implement, conduct, and analyze Gavi DHI Strategy Annual Survey and Document Review & Report"	Global	x	x	x	Monitoring and Learning (Data)
	Monitor	Introduce and scale up vaccines	12. Provide easily accessible global guidance and documentation on interoperability (including country readiness assessments, existing guidance), to link and exchange data across critical systems such as CRVS, surveillance systems, lab systems, and other HIS to immunization systems.	7.10 Enhance learning on DHI interventions	Document success stories and lessons learned across 6 DHI intervention areas, enablers, and gender activities – including documenting Covid-19 transitions to routine immunisation . Lessons learned dissemination and maintain active CoP around DHI learnings and best practice.	Global	x	x	x	Monitoring and Learning (Data)

DHI Priorities	IRMMA	Gavi Goals	IA2030 Data	Activity	Description	Package	2022	2023	24-25	Proposed SFA
	Monitor	Introduce and scale up vaccines	12. Provide easily accessible global guidance and documentation on interoperability (including country readiness assessments, existing guidance), to link and exchange data across critical systems such as CRVS, surveillance systems, lab systems, and other HIS to immunization systems.	7.11 Strenghten Assessment of DHI interventions	"1) Rigorous mixed methods research study (1 country/ segment): How do investments in DHI interventions and enablers for immunisation affect scale and sustainability with focus on effects on zero dose and under-under-immunised children? 2) Rigorous qualitative research study (3 countries with different approaches to gender): What effects does gender-intentional programming and policy-making have on DHI interventions and enablers? 3) Rigorous mixed methods research study: What impact do scaled Global Goods have on immunisation coverage, equity, and zero-dose across three out of 6 DHI priority intervention areas (starting with DHIS2)? 4) Large-scale mixed methods cost-effectiveness studies focused on coverage, equity and zero-dose: Digital microplanning Digital supply chain information systems Real Time Monitoring of immunisation Campaigns e-Surveillance data systems integration for vaccine preventable diseases and vaccines targeting"	Global	x	x	x	Monitoring and Learning (Data)
	Monitor	Introduce and scale up vaccines	12. Provide easily accessible global guidance and documentation on interoperability (including country readiness assessments, existing guidance), to link and exchange data across critical systems such as CRVS, surveillance systems, lab systems, and other HIS to immunization systems.	7.12 Final Review/ Evaluation of Gavi DHI Strategy & Preparation for Gavi 6.0 DHI strategy	Final Review/ Evaluation of Gavi DHI Strategy & Preparation for Gavi 6.0 DHI strategy	Global	x	x	x	Monitoring and Learning (Data)

Gavi, the Vaccine Alliance's Digital Health Information Strategy 2022-2025

The Gavi DHI strategy articulates a collective vision, operational & monitoring plans to achieve digitally transformed, integrated, equitable, gender-intentional information systems that identify and reach zero-dose and under-immunised children through improved access, quality & efficiency to accelerate country immunisation objectives in line with Gavi's mission to leave no child behind with immunisation.

NO CHILD LEFT BEHIND WITH IMMUNISATION

Improved country outcomes

Improved zero-dose identification & reach, routine and campaign immunisation coverage and equity, community engagement & accountability, supply management, & management of VPD outbreaks

Enhanced immunisation planning, service delivery, and monitoring through increased access, quality & efficiency from DHI interventions

Increased maturity of enabling environment to support digital health information within countries

Strengthened donor coordination for DHI interventions & enablers at country level & alignment with PHC

Prioritised DHI interventions & enablers in a gender-intentional National Roadmap

Gavi and Alliance partners will engage countries to develop a gender-intentional DHI investment roadmap to inform their investment and planning processes

Improved global outcomes

Improved programming and decision-making

Scaled and integrated priority DHI interventions

Coordinated support for enablers

Increased catalytic investment

Identification and reach of zero-dose and under-immunised children — know precisely where immunisation services needs to be optimised

Sub-national data use — access, visualise and use data to make better planning decisions

Digital supply chain information systems — reduce health facility stock-outs

Real-time monitoring of campaigns — rapidly address needs and gaps during campaigns

Digital interventions supporting vaccine confidence and demand for immunisation — build vaccine confidence by monitoring and responding to priority community needs

Electronic VPD surveillance — better target vaccination and rapidly detect VPD outbreaks

Early evidence shows that digital health information contributes to increased immunisation coverage, equity and efficiency

The Case for Digital Health Information Investment for Immunisation