

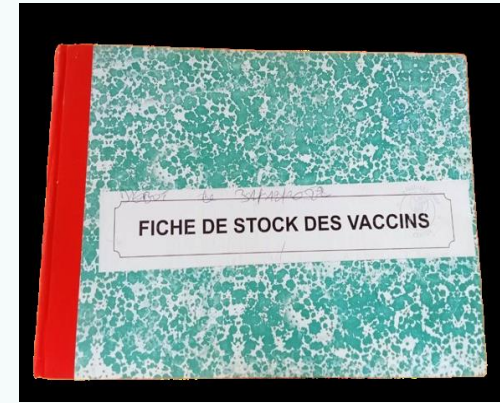
Health Information Systems and Data for Action

Rwanda MoH- RBC

Outlines

- HPV vaccination Health Information Systems HPV vaccination data reporting and analysis
- Immunization digital health system (innovation)
- Digital benefits & sustainability

- ❖ **Paper-based tools** (immunization registers, vaccination cards and vaccines stock cards) **shift to digitalization system (E-Tracker/DHIS2 & VLMIS)**
- ❖ **For reporting purposes**, health workers conducted a manual count of children from the paper registers at the end of month.
 - Human error counting,
 - Delays in data reporting and analysis.



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CHIC | COALITION to STRENGTHEN the HPV IMMUNIZATION COMMUNITY

HPV vaccination data reporting and analysis

- Before 2022, HPV vaccination data recorded in vaccination paper-based registers ,
- Aggregate data reported or stored into health information management system database (DHIS2-HMIS)
- Initiated immunization digitalization individual record in 2020 (Immunization e-tracker system) ,
- Starting from 2022 vaccinated girls aged 12 years are recorded in the system.
- National HPV1 vaccination coverages are estimated using the Population and Housing Census projections

Electronic system (e-Tracker, e-VLMIS)

❖ **HMIS aggregate/DHIS2:** collects and analyzes health data including immunization, monitoring of immunization coverage to support informed public health decisions and improve healthcare outcomes. It started in 2012.

❖ **E-Tracker/DHIS2 :** started in 2020

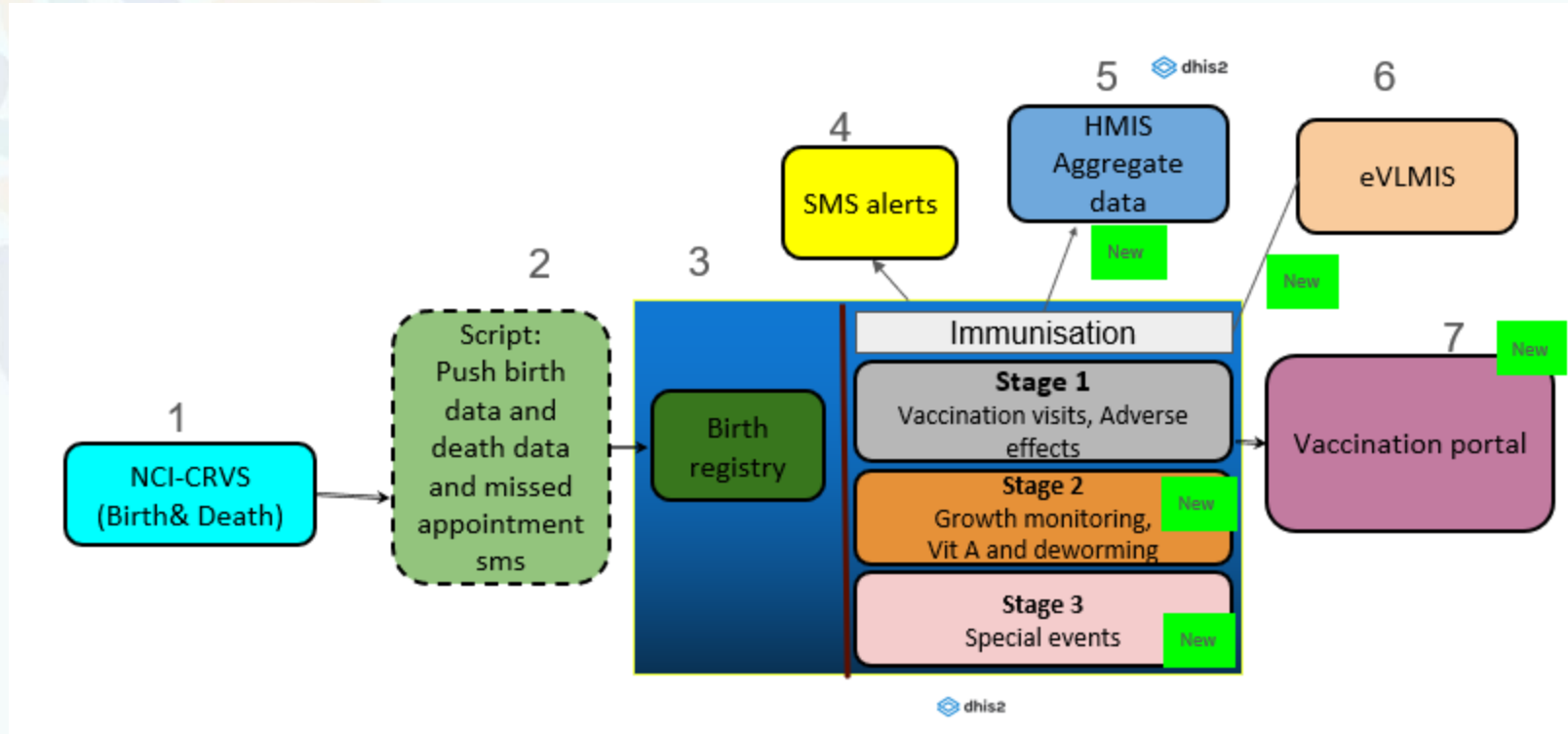
- individual client immunization records, tracking schedules, and follow-up.
- fully shift from paper based to digital system.

❖ **VLMIS:** manages vaccine supply chain at all levels, and ensures cold chain compliance.

Factors enabling the use of electronic system :

- Skilled staff and continuous SS or mentorship
- Internet accessibility
- Availability of IT equipment's (tablets)

Architecture and integration of digital systems in immunization



Immunization e-Tracker registration

- ❖ **Digital client Tracking:** Manages individual patient health records, including immunization schedules.
- ❖ **Appointment Management:** Automates the scheduling and tracking of vaccination appointments.
- ❖ **Missed Appointments:** Detects missed appointments and helps manage follow-ups.
- ❖ **SMS Reminders:** Sends automated SMS reminders to patients for upcoming and missed vaccination appointments.
- ❖ **Digital Vaccination Cards:** Generates and maintains digital vaccination cards for easy access to vaccination histories.
- ❖ **Real-time Data Access:** Provides healthcare providers with real-time access to patient data, enhancing decision-making and patient care.
- ❖ **Support for Healthcare Workers:** Improves efficiency in managing patient interactions and immunization records, reducing the workload and potential errors.
- ❖ **Public Health Impact:** Plays a crucial role in improving vaccination coverage and public health monitoring

Electronic Vaccination card



IFISHI Y'UBUZIMA BW'UMWANA
ICYEMEZO CY'IKINGIRWA RY'UMWANA
CHILD VACCINATION CERTIFICATE
CERTIFICAT DE VACCINATION DE L'ENFANT

Amazina/Names/Noms
TEITELBAUM Campbell

Child ID/Application No./NIN
2023-0547595 / /

Yavutse/Date of birth/Date de naissance
2010-01-01

Amazina ya Papa/Father's Names/Noms du Père
Amazina ya Mama/Mother's Names/Noms du Mère
JULIANNA LINDSEY

Igitsina/Gender/Genre
F

Akivuka / At birth	Ibyumweru 6 / 6 weeks	Ibyumweru 10 / 10 weeks
-	-	-
Ibyumweru 14 / 14 weeks	Amezi 9 / 9 months	Amezi 15 / 15 months
-	-	-
Imyaka 12 / 12 years	Imyaka 12 / 12 years	
2023-05-24	2024-03-15	
HPV1	HPV2	
Location: Remera (Gasabo) CS	Location: Remera (Gasabo) CS	

Byemejwe na Porogaramu y'Igihugu y'Ikingira
Certified by the National Vaccination Programme
Certifié par le Programme national de vaccination



After e-tracker individual parents receive SMS with link to retrieve digital vaccination card via (<https://certificate.moh.gov.rw/results/immunization/>,

Electronic Vaccination card



Republic of Rwanda
Ministry of Health



Rwanda
Biomedical
Centre
Healthy People. Wealthy Nation

IFISHI Y'UBUZIMA BW'UMWANA
ICYEMEZO CY'IKINGIRWA RY'UMWANA
CHILD VACCINATION CERTIFICATE
CERTIFICAT DE VACCINATION DE L'ENFANT

Amazina/Names/Noms
[Redacted]

Child ID/Application No./NIN
[Redacted]

Yavutse/Date of birth/Date de naissance
2024-01-17

Amazina ya Papa/Father's Names/Noms du Père
[Redacted]

Igitsina/Gender/Genre
M

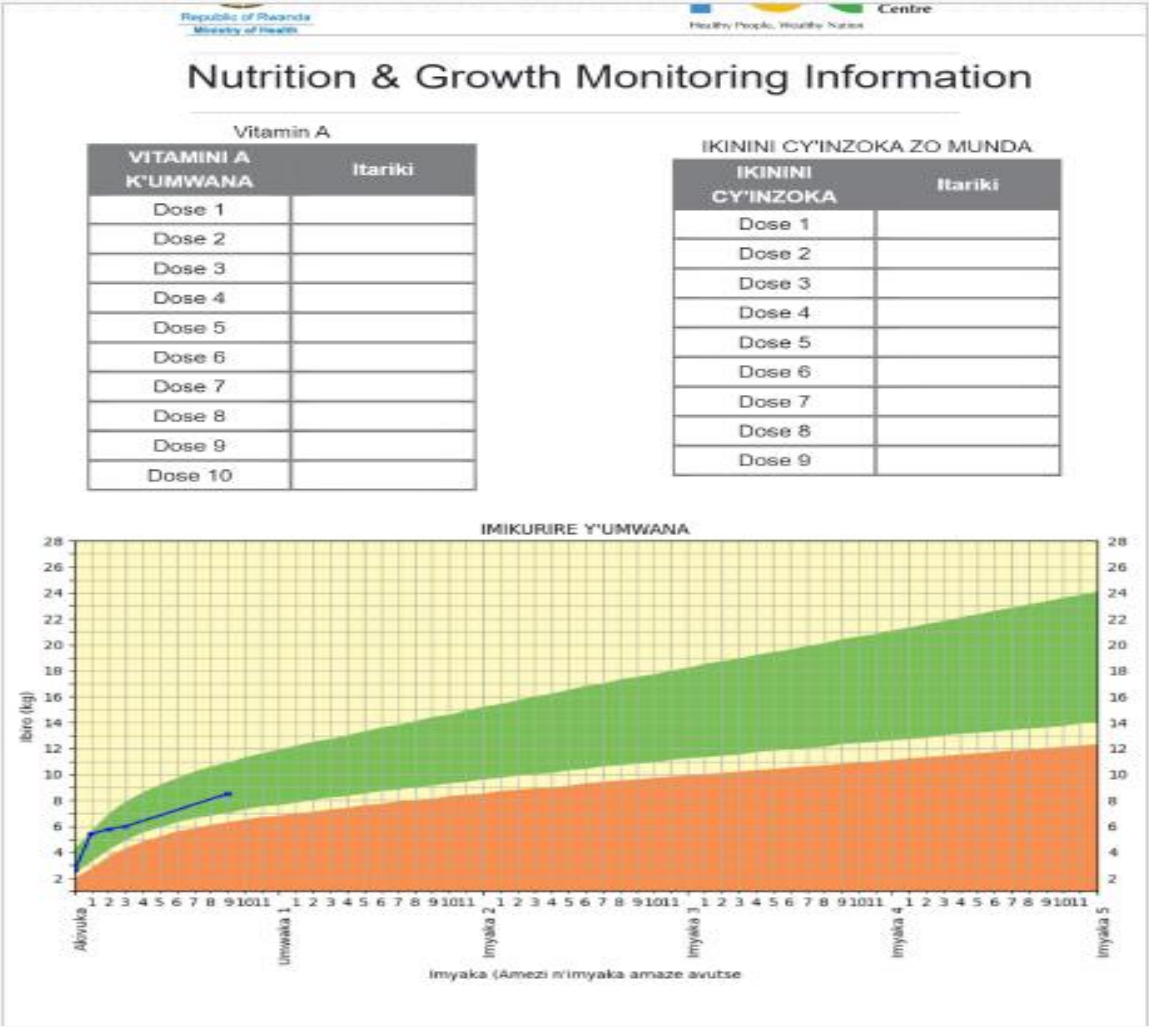
Amazina ya Mama/Mother's Names/Noms du Mère
[Redacted]

Akivuka / At birth	Ibyumweru 6 / 6 weeks	Ibyumweru 10 / 10 weeks
2024-01-30 BCG, OPV 0 Location: Nyabikenke CS	2024-03-20 OPV 1, DTP-HepB-Hib 1, PCV13 1, Rotavirus 1 Location: Buramba CS	2024-05-13 OPV 2, DTP-HepB-Hib 2, PCV13 2, Rotavirus 2 Location: Buramba CS
Ibyumweru 14 / 14 weeks	Amezi 9 / 9 months	Amezi 15 / 15 months
2024-06-08 OPV 3, DTP-HepB-Hib 3, PCV13 3, IPV 1 Location: Buramba CS	2024-12-26 MR 1, IPV 2 Location: Buramba CS	-

Byemejwe na Porogaramu y'Igihugu y'Ikingira
Certified by the National Vaccination Programme
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e-VLMIS(Vaccine Logistics Management Information System)

- ❖ **Request and Distribution:** Manages requests for vaccines from healthcare facilities and oversees the distribution process to ensure timely delivery.
- ❖ **Monthly Inventory Management:** Facilitates the tracking of monthly inventory levels at each healthcare facility, enabling proactive management of vaccine supplies.
- ❖ **Alerts on Soon-to-be Expired Products:** Generates alerts for vaccines approaching their expiration dates, allowing health facilities to prioritize their use and reduce waste.
- ❖ **Stock out Alerts:** Sends real-time notifications about potential stockouts, enabling swift action to replenish supplies and avoid disruptions in immunization services.
- ❖ **Demand Forecasting:** Analyzes usage trends to accurately forecast future vaccine requirements and streamline procurement processes.
- ❖ **Enhanced Accountability and Transparency:** Provides detailed tracking of vaccine movements and usage, improving accountability and transparency in the supply chain.

Paper based limitation and challenges

- Despite the usefulness of these tools, paper-based systems had several limitations:
 - ❖ **Cost Burden of Paper Tools**
 - ❖ **Manual entry with high error risk**
 - ❖ **Delayed Reporting:** Monthly aggregation and submission took time, affecting timely decision-making.
 - ❖ **Data Loss Risks:** Paper records were vulnerable to damage, misplacement, or illegibility.
 - ❖ **Fragmentation of Data:** Data were not easily accessible or shareable across different health system level

eVLMIS: Strengthening Rwanda's Vaccine Supply Chain

- **Real-time Stock Visibility** : Tracks vaccines across central and lower-level stores.
- **Batch & Expiry Tracking** :Ensures proper stock rotation and minimizes wastage.
- **Distribution Management** :Monitors vaccines dispatched and received.
- **Alerts & Approvals** : Flags pending approvals, distributions, and receptions.
- **Temperature Monitoring** :Supports cold chain compliance.
- **Reporting & Analytics** : Generates data for decision-making and accountability.

storeKeeper, storeManager, CentralUser, Administrator

IN / Waiting Approval: 1

IN / Waiting confirmation: 0

OUT / Waiting Distributions: 11

OUT / Waiting Reception: 20

My Stocks

VACCINE

BCG	372,200
bOPV	826,500
IPV	647,600
DTP-HepB-Hib	535,080
PCV-13	743,600
ROTA_liq	304,100
TD	473,960

Batch-wise details for the selected product

BatchNumber	ExpDate	Total IN Quantity	Total OUT Quantity	Current
913-1	2027-11-30	224,000	0	224,000
913-2	2027-08-31	150,000	14,000	136,000
877-1	2027-04-30	263,300	251,100	12,200

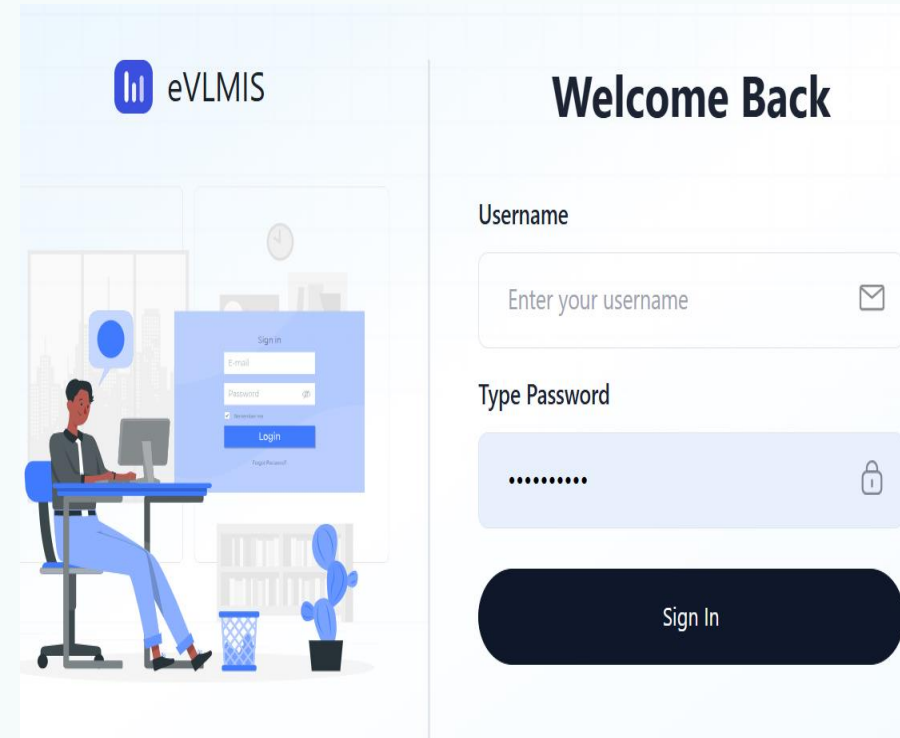
HPV vaccine stock management

- **Users responsibility**

- Issue vaccines promptly & record all transactions
- Conduct regular physical inventory counts
- Ensure timely entry for accurate planning and reduced wastage

- **Advantages**

- Strengthened data monitoring and real-time tracking of vaccination data, optimize vaccine logistics.
- Integration of these digital tools with national health systems has improved data accuracy, resource planning, and timely decision-making



Digital benefits

- ❖ Rwanda's transition to digital immunization tools has:
 1. Reduced printing and administrative costs
 2. Improved data accuracy and access
 3. Strengthened vaccine logistics
 4. Enhanced efficiency and follow-up
- ❖ A major step forward in building a sustainable, modern immunization system.

Digital Sustainability

Developed user **guidance on eVLMIS and etracker (Youtube)**

- [Evlmis:Overview Video Guide](#)
- [eTracker; Overview Video Guide \(Kinyarwanda version\)](#)
- [Vaccination Card: certificate](#)

