

Successful Utilization of the Electronic Case Reporting within CLMIS: A Step Towards Data Digitalization in the Sindh Province, Pakistan

Presenting Author: Dr Tahira Sahar

Co-Authors: Ghazanfar Abbas, Aaliya Habib, Zafar Dehraj, Dr Naheed Akter (PWD), A. Waheed Sheikh (PWD)

Data Capturing by ECR

cLMIS aggregates data for central access

Data base supports decision making and resource allocation

**Field Centers
Data Collection**

**ECR (Electronic
Case Reporting)
System**

**cLMIS
Data
Aggregation**

**Central Database
Consolidated Data**

Centers collect FP data

Data transfers from ECR to cLMIS

Aggregated data sent to data base

Electronic Case Reporting (ECR) within the Contraceptive Logistic Management Information System (cLMIS) is an innovative digital tool piloted in 200 Family Welfare Centers across Sindh, Pakistan. This system aims to modernize data collection and reporting for family planning services, which is critical in areas with limited resources. ECR integrates seamlessly with cLMIS to ensure data accuracy, operational efficiency, and responsive logistics management in challenging environments.

Rationale, Aim & Objectives



Rationale: Traditional paper-based systems in healthcare often lead to delays, inaccuracies, and inefficiencies. With ECR, Pakistan's healthcare system seeks to resolve these challenges by leveraging digital technology.

Aim: Assess the impact of ECR implementation on the quality and efficiency of data management for family planning records.

- Objectives:**
- Enhance data quality and reduce entry times.
 - Improve logistics for timely decision-making.
 - Address challenges like tech access and staff capacity.

Qualitative Research

95 respondents from 200 Family Welfare Center

Purposive Sampling

Semi-structured Surveys
FGDs, Time logs, Audit check-lists, Feedback survey

Nvivo

Methodology



Improved Data Quality: Transitioning from paper to digital reduced errors and enabled accurate data tracking.

Tools: *Audit Check-lists, One-on-One Interviews*

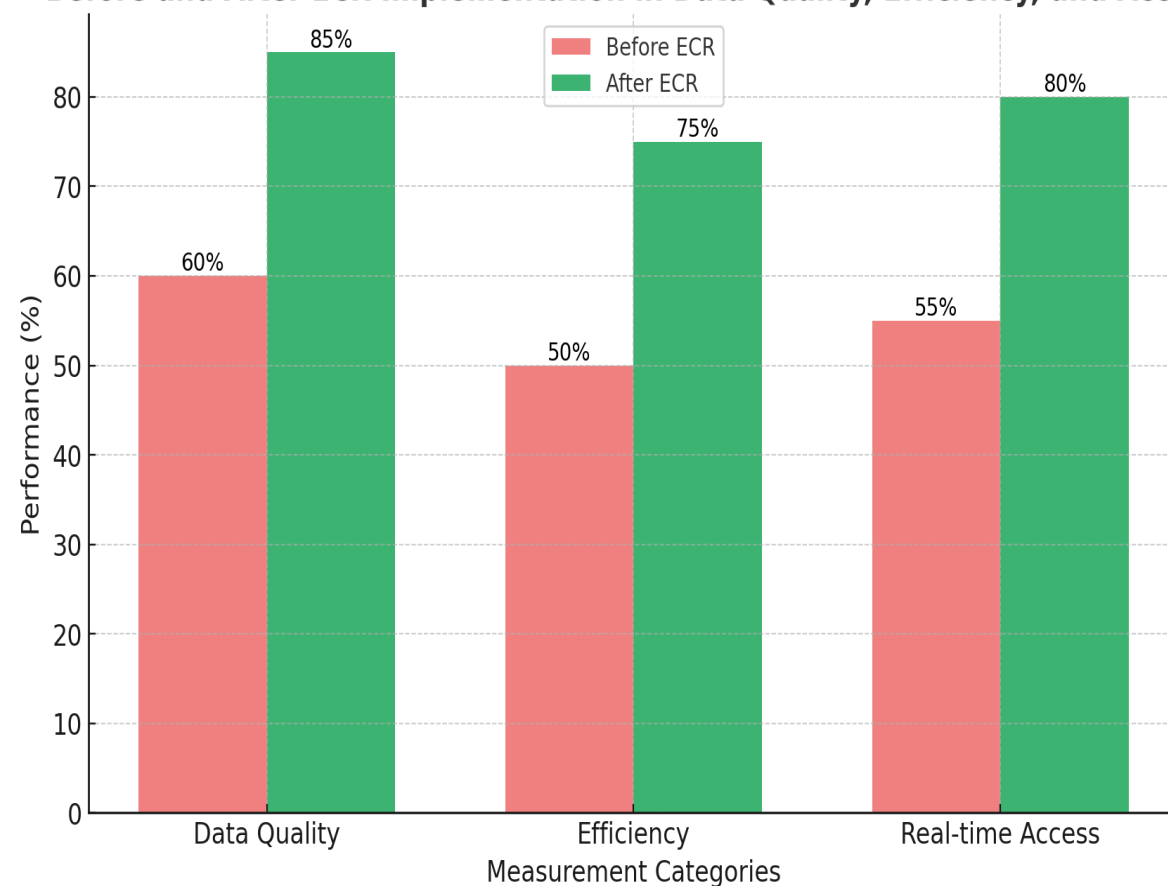
Increased Efficiency: Digital entries allowed health workers to record data faster, enhancing service delivery.

Tools: *Time logs (average time spent per entry), Focused Group Discussion.*

Real-time Access: Immediate data availability supported effective decision-making and better supply chain management.

Tools: *Observational check, Feedback survey*

Before and After ECR Implementation in Data Quality, Efficiency, and Access

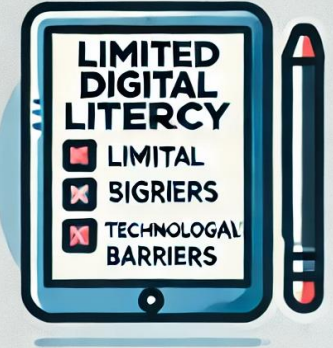


The Secretary PWD, **Dr. Rehan Baloch**, made the statement at an event on World Population Day in July'23:

"Traditional report-based monitoring mechanisms are improved by introducing a modern electronic and real-time web-based monitoring system. Digitalization of data: The paper-based registration of clients is shifted to the Electronic Clients Record (ECR), embedded in the Contraceptive Logistic Management Information System (CLMIS). The robust data recorded in ECR would be instrumental in evidence-based decision-making."

A 38 years old, Female Family Welfare Worker made a comment:

"In order to log the report and view it again, we only need to remember our username and password. The portal is very secure and confidential because every service provider has their own user account."



Limited Digital Literacy: Many workers needed training on the system, especially those unfamiliar with digital platforms.

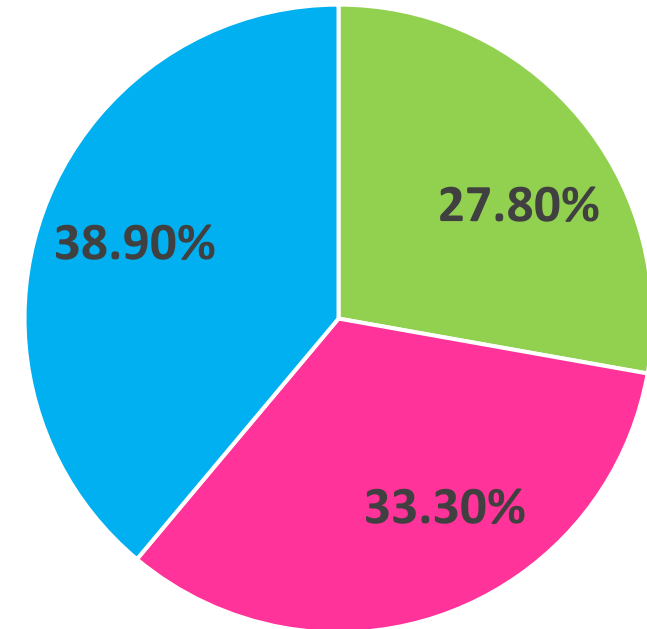


Technological Barriers: Lack of internet in remote areas and limited access to smartphones or computers hindered effectiveness.



Resistance to Change: Long-standing staff preferred paper records and exhibited reluctance in adopting ECR.

Distribution of ECR Implementation Challenges



- Resistance to change
- Technological Barriers

The Struggle with Digital Change



One of the DPW talked about the paper-based logistic management structure in Pakistan and said:

“There are different vertical programs in public health with varying commodity distribution systems for products such as lab equipment, anti-TB drugs, and other essential medicines in addition to contraceptives. The verticality of the health system poses a unique challenge in Pakistan because of the varying systems implemented in public healthcare programs. Another complexity includes the fact that some systems are operating under a pull system, whereas others are referred to as a push system to deliver products.”

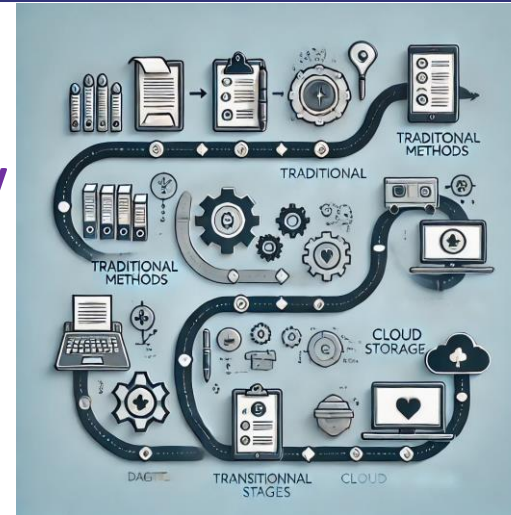
A 58-year-old lady working as an FWW made a statement:

“We are familiar with our old classical system for registering general and FP clients. We have been given FP and stock registers, where we are intended to make entries. Using ECR is extra work. Also, I don’t have a smartphone, which is a major hurdle in using cLMIS and ECR. It’s very challenging to ask other colleagues to borrow their phones and make my ECR entries.”



Data Quality and Efficiency

ECR in cLMIS reduced manual record-keeping errors, improving data quality (WHO, 2017).



Digital Transition in Low-Resource Settings

Electronic systems enhance efficiency but face resistance, especially among those familiar with traditional methods (Ayub et al., 2015).

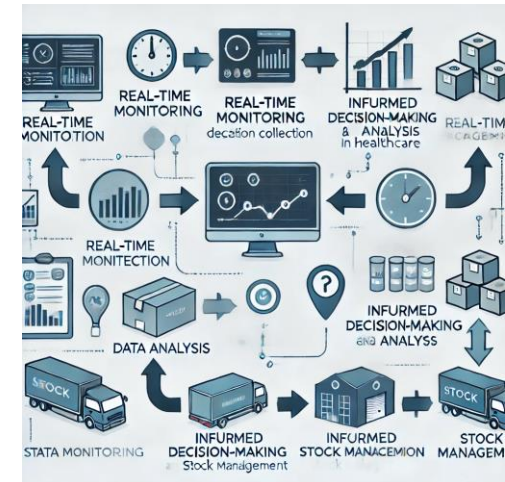
Challenges in Adoption

Barriers like limited digital literacy and infrastructure limitations found, aligning with similar findings in low-resource settings (Aslam et al., 2016).



Impact on Supply Chain and Real-Time Monitoring

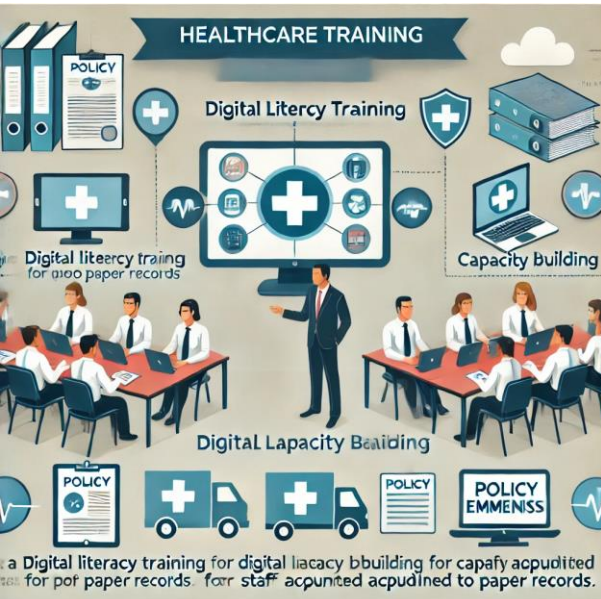
Real-time data access for stock monitoring aligns with findings in other LMICs, enabling data-driven decision-making (FP2030, 2022).



Implications for Policy and Practice

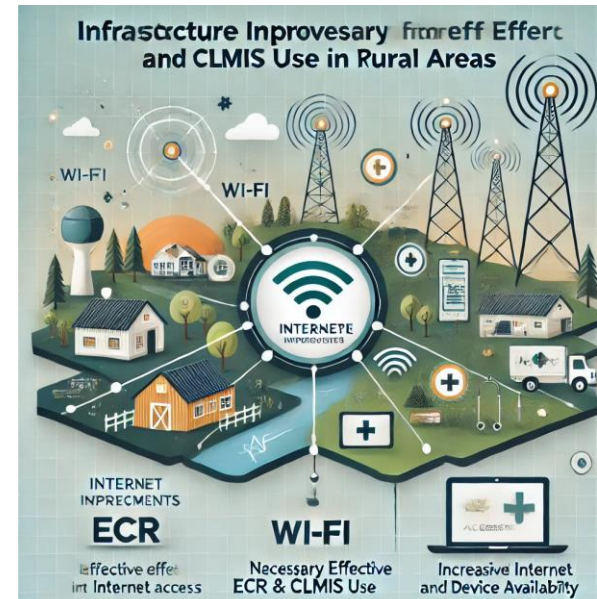
Training and Capacity Building

- ✓ Need for digital literacy training, especially for staff accustomed to paper records, to reduce resistance.
- ✓ Suggested Policy: Mandate digital training programs in public healthcare sectors.



Infrastructure Improvements

- ✓ Improving internet access and device availability in rural areas critical for effective ECR and cLMIS use.



Recommendations

- ❑ **Regular Training:** Ensure health workers have the skills needed to use ECR confidently.
- ❑ **Connectivity Solutions:** Address internet issues by enabling offline functionality.



- ❑ **Increased Resource Allocation:** Provide necessary digital tools to health facilities.
- ❑ **Stakeholder Feedback:** Engage regularly with users to adapt and optimize the system.