Technology at PSI

Digital systems drive better care and shape health systems.

HOW DOES PSI USE TECHNOLOGY?

PSI supports a range of technologies that help reimagine healthcare worldwide, putting our consumer at the center of the solution, and, whenever possible, bringing care to their front door. We use technology to equip decision makers with timely quality data and connect patients to health services.


OUR APROACH

Build a Culture of Data Use with DHIS2

All data collected by PSI is managed and analyzed in DHIS2, an open-source management information system that makes real-time data accessible. PSI's commitment to investing in DHIS2 enables us to partner with ministries of health that want to improve their own information systems and better use data to improve programs.

Create User-friendly and Open-source Apps

PSI firmly believes that creating easy-to-use technology and freely sharing it with the wider global community amplifies the collaborative atmosphere of engagement with health organizations worldwide.
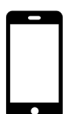
Meet Patients Where They Already Are

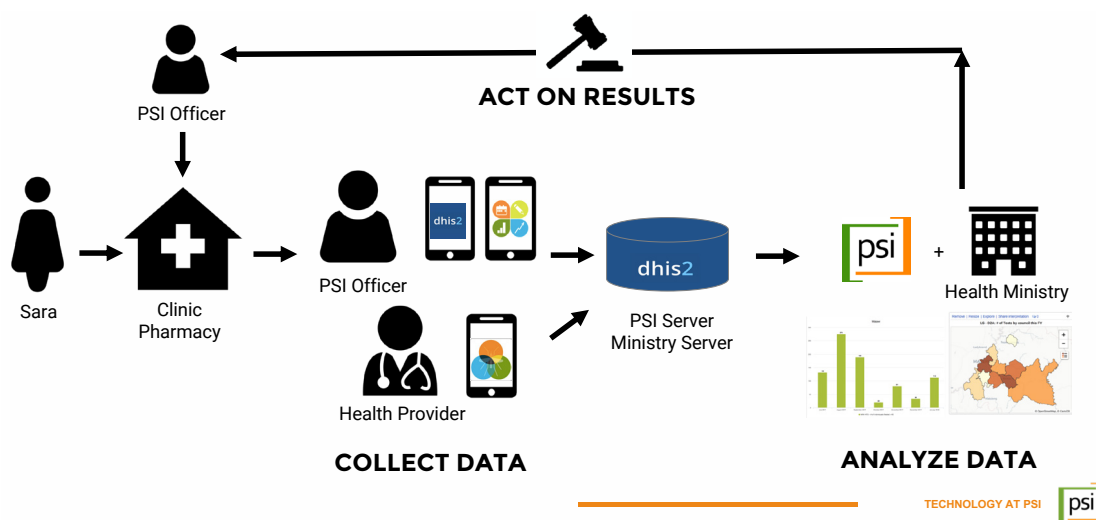PSI leverages existing mobile apps that patients already use, while remaining open to new solutions.

GUIDING PRINCIPLES

✓ **Invest in PSI, Invest in the Greater Good**
PSI shares technology - when an organization invests with PSI, they invest in technology for everyone.

✓ **Learn with Us**
PSI seeks partners willing to learn with PSI and expand on existing solutions.

✓ **Make Technology Program Agnostic**
PSI believes technology can overcome health silos.

✓ **Take Care of Everything from End-to-End**
PSI has built over time the resources and institutional knowledge to implement a project from end-to-end.

WHAT TECHNOLOGY DO WE USE?

PSI Android app to assess and improve quality of health services.

Health Network Quality Improvement Systems (HNQIS) App

Connecting with Sara

PSI initiative to use mobile technology to engage patients.

dhis2
Software to collect, manage, and analyze data

PSI Android app to report real-time malaria cases.

Malaria Case Surviellance App

Electronic Medical Records

Platforms to track patient records in clinic settings.

DHIS2 Apps

TECHNOLOGY AT PSI psi

HOW DOES PSI ACT ON DATA?

PSI Officer

ACT ON RESULTS

Sara

Clinic Pharmacy

PSI Officer

PSI Server Ministry Server

psi + Health Ministry

Health Provider

COLLECT DATA

ANALYZE DATA

TECHNOLOGY AT PSI psi

THE FUTURE OF TECHNOLOGY AT PSI

In the coming years, PSI will expand existing solutions and incorporate new ideas, new business models and non-traditional approaches for solving challenging issues. Technology initiatives will continue to strengthen a culture of data use throughout PSI and make it easier for patients to access quality health services and information.

Better Care with Electronic Medical Records

Digital records improve health services

DIGITAL RECORDS IMPROVE HEALTH SERVICES

Electronic Medical Records (EMRs) enable clinics to gather, save, and retrieve patient health information. EMRs also make it possible to send data electronically to PSI and directly into DHIS2, PSI's management information system, relieving clinics and PSI staff of paper forms. This new technology builds on established systems of client-based record management.

Create unique identifier codes for patients

Maintain unique patient records

Digitize filing of patient records

OUR APROACH

Support Different EMR Solutions

PSI understands there is no one-size-fits-all EMR solution, especially when PSI's social franchises of private clinics vary from country to country in size, type of health services offered, and patient load. While PSI sets global EMR standards, it is ultimately for local teams to decide which EMR, if any, meets the needs of their clinics.

Connect to DHIS2

While different countries may have different EMR solutions, PSI requires that all EMRs be compatible with DHIS2.

Encourage Data Use

EMRs make data more accessible to doctors, nurses, and patients—not just PSI. The ability to pull up patient data from past visits has been shown to improve care.

For more information about how we use EMRs or potential partnerships, please contact **Daniel Messer, dmesser@psi.org**.

EMR EXAMPLES

As of June 2018, EMRs are implemented in 5 countries with many more exploring EMR pilots. Here are examples from around the world.

|	**ZIMBABWE**	**UGANDA**	**MYANMAR**
EMR Solutions	Bahmni Open-Source EMR	Fortis EMR from Kenyan-based Company	Sun CMS from Myanmar-based Company
EMR Capabilities	Patient Registration, Clinical Services, Laboratory, Billing, Stock Management, Reporting	Patient Registration, Clinical Services, Laboratory, Billing, Stock Management, Reporting, Enterprise Resource Planning (ERP) including Human Resources and Accounting	Patient Registration, Clinical Services
Device	Computer + Mobile	Computer Only	Mobile Only
Clinic Size	Polyclinics with 2-5 doctors	Polyclinics with 5-10 doctors	Small single-doctor clinics

STANDARDS FOR UNIQUE IDENTIFIER CODES

Unique identifier codes (UICs) are a core component of any EMR. UICs enable doctors to track patients through the continuum of care. A UIC must:

- **Be issued to every patient.**
  All PSI patients should be issued a code that is unique. No other patient should have the same code.

- **Remain with the patient for life.**
  The construction of the UIC must be based on information unique to the patient and which doesn't change over time.

- **Maintain patient's anonymity.**
  The construction of the UIC obscures the patient's personal details, making it extremely difficult for a patient to be identified by UIC alone.

- **Capture every patient interaction.**
  The UIC should be incorporated into all patient forms, registers, and systems, enabling a patient to be tracked across all interactions with PSI.

EMR ALTERNATIVES

EMRs require electricity and at least some Internet connectivity. Because of this, EMRs are not a fit for every environment. However, the absence of technology does not preclude improving patient care through off-line client-based record management.

Whether an EMR or on paper, client-based record management (CBRM) follows the same three standards of a unique identifier code, unique patient record, organized filing of patient records.

Patient Record

UIC

Organized filing
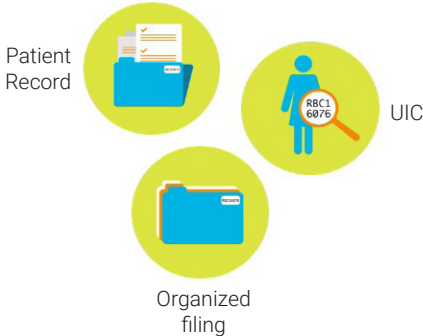
THE FUTURE OF EMRS AT PSI

There is great potential with EMRs to improve patient care and ease the data-entry burden. As Internet networks and electrical grids improve, EMRs will become more of an option for more clinics. PSI looks to further expand EMR technology, prioritizing EMR systems that put the doctor and patient first.

Health Network Quality Improvement System (HNQIS) App

Targeted quality assurance leads to better healthcare

HNQIS AT PSI

HNQIS is an open-source Android app developed by PSI to assess, improve, and monitor health worker's skills when delivering health services. HNQIS is used by Quality Assurance Officers (QAOs) in public and private clinics and across various health services including family planning, HIV, and malaria. With HNQIS, doctors benefit from tailored support by identifying areas of improvement while providing care.

✓ **Assess health workers' skills and knowledge**

✓ **Improve delivery of health services**

✓ **Monitor quality of care delivery**

OUR APROACH

Target Support for Greater Health Impact

HNQIS helps QAOs direct resources by prioritizing visits to health workers with low quality scores and high patient volume.
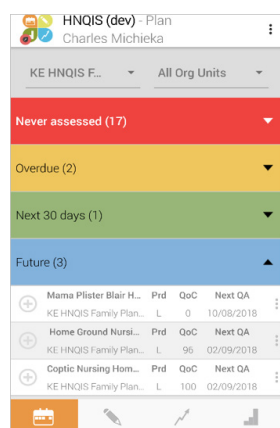
Standardize Assessments

HNQIS includes health service assessment checklists aligned with national and international standards. An assessment score is automatically generated on-site after each assessment.

Tailor Feedback and Coaching

After each assessment, HNQIS highlights key areas for improvement. Additional learning tools, like guides and videos, are also provided within the app.

For more information about HNQIS or potential partnerships, please contact **Daniel Messer, dmesser@psi.org**.

HNQIS consists of 4 modules:

Plan Module schedules future assessments based on where support is needed most (e.g., clinics with low quality scores) and where it will have most impact (e.g., clinics with highest patient volume).

Assess Module enables QAOs to assess clinical procedures through case observation or simulation, using checklists customized for each health area and each type of health worker (e.g., doctor versus pharmacist).

Improve Module displays all information required to improve the performance of the health worker in one place, including areas for improvement and learning tools.
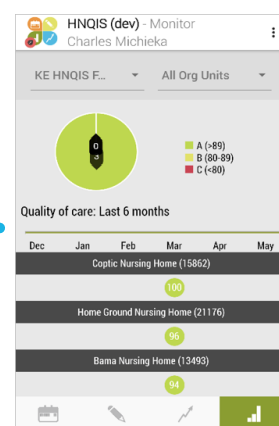
Monitor Module displays a dashboard of graph and tables that highlight trends and overall performance of the doctors a QAO is responsible for.
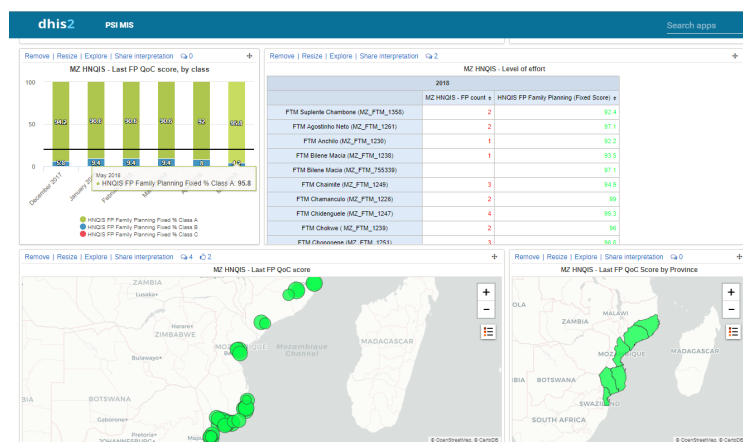
HNQIS AND DHIS2

Data is collected in HNQIS and then transmitted directly into DHIS2, PSI's management information system. This allows program and quality assurance managers to overlay data on quality of care with other existing databases in DHIS2, and offers decisionmakers a broad overview of health service provision. To use HNQIS, a PSI country office must already have DHIS2 implemented.

example of HNQIS country dashboard

HNQIS BY THE NUMBERS

Since HNQIS's launch in 2015:

- 20,000 Assessments
- 19 Countries
- 13 Health Areas
- 8,000 Health Facilities
- 450 QAOs

THE FUTURE OF HNQIS AT PSI

Since HNQIS launched in 2015, results include improved quality of care at the doctor-level and better allocation of resources of supervision systems. These results have encouraged PSI to explore strategic partnerships to adapt HNQIS to best meet the needs of Ministries of Health and implementers, enabling access for all DHIS2 users. PSI hopes to meet its objectives of expanding solutions to better fit the needs of the larger global health community.