

September 2022 Webinar

PEPFAR Digital Health Inventory: Building and Monitoring the Path to Sustainability



GDHF 2022



Global Digital Health Forum

December 5-7, 2022

Virtual (Asia and East Africa time zones) and In-person at the Crystal City Gateway Marriott in Arlington, Virginia

ABSTRACT SUBMISSION CLOSED INFORMATION ABOUT REGISTRATION WILL BE SHARED SOON

Driving Effective and Equitable Digital Health Innovation

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PEPFAR Digital Health Inventory: Building and Monitoring the Path to Sustainability

September 22, 2022

Background

- Implementation Approach
- Technical Overview of the DHI
- DHI Analytic Framework
- > What Does This Mean for Me?



Digital Health Inventory (DHI) Context

- Historically, PEPFAR has "let a thousand flowers bloom" in the global HIV data space to support HIV service delivery, improve program quality, and monitor <u>PEPFAR</u> outcomes
- For timely program improvements that sustain epidemic control and support health crises, PEPFAR needs a comprehensive evidence-based view into these system's:
 - Information on how our investments are used
 - Organization
 - Features
 - Functionality
- The DHI moves knowledge about country level systems from anecdotal to evidence based, and allows PEPFAR to:
 - Identify potential for donor investment coordination
 - Strengthen systems that are country led and managed
 - Build on existing systems, data models and platforms
- The DHI aligns with the WHO Digital Health Atlas and was developed in parallel with USAID's Map & Match activity



Background

Defining Digital Health

PEPFAR Digital Health Inventory (DHI)

PEPFAR DHI Stakeholders



Defining Digital Health

Digital health is the systematic application of information and communications technologies, computer science, and data to support informed decision by individuals, the health workforce, and health systems, to strengthen resilience to disease and improve health and wellness.



What is the PEPFAR Digital Health Inventory

Annually updated data stream within DATIM/DHIS2 to record PEPFAR-funded digital health investments across system categories:



Community-Based Health Information Systems (CBHIS)



Pharmacy Information Systems (PIS)

Health Management Information Systems (HMIS)



Electronic Medical Records/Patient Medical Systems **(EMR/PMS)**



Clinical/National Data Repositories for Case-Based Surveillance **(CNDR)**





Lab Information Systems (LIS)

Implementing Partners enter the investments addressing 4 sections



Country teams review and confirm submissions, then analyze the inventory using Panorama dossiers or a structured dataset

A minimum DHI dataset will be mapped to the WHO Digital Health Atlas (DHA)



PEPFAR Digital Health Inventory (DHI) Stakeholders

Pilot Countries: Uganda, Vietnam, Zimbabwe





19 YEARS OF SAVING LIVES THROUGH AMERICAN GENEROSITY AND PARTNERSHIPS

GATES foundation

Implementation Approach

Implementation Plan

> Roadmap

> Numbers

PEPFAR S. President's Emergency Plan for AIDS Relief

8

Implementation Plan

STAKEHOLDER ENGAGEMENT

- Built consensus with USG and external stakeholders (WHO, Global Fund, etc.)
- Outlined DHI value proposition
- Gathered requirements
- Defined data use needs
- Connected with WHO DHA team

COUNTRY KEY INFORMANT INTERVIEWS

- Socialized tool via MSWord
- Reviewed with selected pilot countries (Uganda, Vietnam and Zimbabwe)
- Observed by CDC, USAID & DoD HQ
- Leveraged feedback to iterate on instrument refinement
- Gathered feedback on suggested offline process/ workflow for in-country data collection
- Generated test data for technical solutioning and data modeling

PILOT DHI v0.1

- Refined and prioritized key questions
- Finalized draft version of MSWord
- Completed development activities for pilot
- Released v0.1 version to collect pilot data
- Held Data Reviews with country teams

DEPLOY DHI v1.0

- Refined and prioritized key questions
- Updated v.01 of the App to v1.0
- Rolled out implementation to more countries
- Implemented data analytics



DHI Roadmap





DHI v1.0 Numbers

>230 Implementing Partners submitted entries from 22 countries

>80 DHI Data Points

>575







Review & Approval Workflow



Implementing DHI with Extensibility & Scalability



- Most PEPFAR data streams are reported in DATIM and have established account users who are familiar with the DHIS2 platform
- However, type of the DHI data and workflow do not easily fit into event/tracker/aggregate model, requiring a custom solution
- Technical Implementation Stack
 - Frontend: ReactJS, Material UI & DHIS2 UI
 - REST API Service: Python/AWS Lambda/AWS S3 bucket
 - Data Storage: DynamoDB & DHIS2 Datastore



DHI Application & Features

My Investments Submitted Investments	<u></u>			
General Information Coverage and Funding Bystem Category Overstons Onto Security	Coverage and F	unding	* Required Question	
	This section includes questions about the fundin wait to consult with other members of your learn	This section includes questions about the fluiding source and budget for this DHI. If you contribute this information, you mer- want to consult with other intertibles of your flams, MDH or your country PDPFAR Constrainting Office.		
	1. Under which PEPFAR Mechanism Name is t	is DHI primarily funded? • 👁		
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	 How many sites is this DHI supporting in the Press effect integer value How many users of the system is this DHI is 	current COP year? *®		
	Pasan whe shape value			
	 What health focus areas does this DHI addr Only HIV/ADS Select the geographical hierarchy level when 	Conwr heath focus areas in addito e this DHI is will be implemented. *	un to HEV: AUDI	
	Select the Regional Country?*			
	 Please select the implementation status of 	NK DHR1+		

- Custom DHIS2 app built on DHIS2 app platform tools and libraries
- Intuitive data capture and data review workflow
- Support various data types
- Support value type compliance
- Hover tooltips and online instructions and guides
- Conditional logic and pre-loaded data selection
- Real-time data validation and integrity checks
- Standardized metadata management and version control
- User authorization/authentication and App permissions done using DHIS2 user model (user roles/groups)



DHI Review and Approval Workflow



DHI User Category

- Implementing Partners (Reporting)
- OU Agency (Review and Approval, Linking Similar Investments)
- Interagency and Global Users (View Submissions)



DHI Analytic Framework

Data Analysis

DHI Categories Across OUs

Leveraging PEPFAR

Alignment with PEPFAR Program Areas



Preliminary overview of how digital health investments are used:

- What is the overall reported budget of PEPFAR's digital health investments?
- How are countries using digital health investments?

DHI geographic coverage & capabilities mapping by system categoryspecific analyses:

• Are digital investments used for treatment continuity tracking?

Understanding the broader landscape:

- What proportion of DHIs are jointly funded/supported by other donors or national stakeholders?
- Are PEPFAR-funded digital investments for HIV also being leveraged for national COVID-19 pandemic response?



DHI Categories Represented Across all OUs - Illustrative



DHI categories and their implementation status



Data as of Q3 data entry close. DHIs may fall under more than one system category



Leveraging PEPFAR: How are PEPFAR-funded digital investments for HIV also being used for national COVID-19 - pandemic response? - *Illustrative*



- 167 out of 465 (40%) of DHIs support COVID-19 surveillance and program management processes
- Among the systems that support COVID surveillance, 20 % of the systems support surveillance that falls under 'Other' category where the 'Other' includes services such as tracking vaccination status, reporting, COVID-19 prevention and monitoring vaccination status.
- 9% of these identified systems are used for COVID lab test requests

Data as of Q3 data entry close



What PEPFAR Program Areas are the reported DHIs aligned with? - *Illustrative*



Data as of Q3 data entry close. DHIs may fall under more than one program area



What Does This Mean for Me?

Next Steps & Additional Resources



Some Next Steps...



Future State

- Verify data with country teams
- Comparison of DHI data against other data streams - monitoring and reporting, workforce, and program quality indicators
- Examine how PEPFAR investments fit into the broader landscape

Data

DHI investments focus on PEPFAR funded systems



Integration with WHO Digital Health Atlas (DHA) underway to get a fuller picture of digital health landscape



- <u>PEPFAR Digital Health Inventory (DHI) Support Page</u>
- Data Use Community (DUC)
- <u>PEPFAR COP Guidance 6.6.9 Impact-Driven Information</u>
 <u>Systems and Data Management Investments</u>
- Principles of Donor Alignment for Digital Health
- WHO Digital Health Atlas
- USAID Map & Match Project



Questions?

For additional questions and information, please contact Kelly Palmer, <u>ely palmer Rick com</u>or Cathy Pak, <u>cathy pak@icf.com</u>





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