Background
Governments, development partners, service providers, and communities need high quality health information to better target health interventions, allocate resources, and effectively respond to disease outbreaks such as the Ebola outbreak. The Ebola epidemic exposed the severe weaknesses of West Africa’s existing national health information systems (HIS).

This situation calls for development partners to make communal investments in the strengthening and defragmentation of data systems used for the management and real-time transmission of health information within countries and across borders. In addition to strengthening the institutional capacity of Ministries of Health (MOHs) in the areas of HIS governance and coordination, improving national HIS systems must include efforts to expedite the technical integration of often stand-alone or siloed data systems in order to facilitate the generation and use of comparable and aggregatable information.

To address key HIS interoperability challenges, USAID initiated a multi-stakeholder co-creation process to identify problems and opportunities for improving the way health data systems exchange information.

Summary of the HIS Interoperability Co-Creation Process
To launch this co-creation process, USAID conducted a call for expressions of interests for technology-focused approaches that can contribute to addressing the following questions:

- How do we better enable and connect the community-level, national and regional systems and resources that support the health worker with real-time information?
- How do we strengthen HIS and data systems so they become valuable public goods that support real-time decisions?
- How can we best support the region to develop digital health systems with shared and innovative infrastructure for future interoperability and open integration?

Of the 111 expressions of interest received from implementing partners interested in joining this effort, 39 were selected to attend a co-

Concept Notes Co-Created by Participants
Draft documents available here.

1. Optimized interoperability layer for interchangeable HIS data integration
2. Micro-grants to incentivize the integration of HIS software
3. Data added value exchange using rapid algorithm-based data cleaning technology with linking/integration of disparate data across the digital health service delivery platforms
4. Global open terminology management service/repository (with multiple curated concept and indicator libraries) to facilitate harmonization of data sources
5. Global open repository of national health facility registries
6. Flow interoperability to make business logic of programmatic interventions (e.g. clinical workflow) portable between digital platforms
7. Interoperability maturity diagnostic framework and tool to prioritize investments on local context
8. Logistics Management Information System (LMIS) “lite” instance for public health emergencies
9. Data exchange standards for health worker education (central data warehouse for tracking curriculum, pedagogy and training)
10. Patient centered integrated disease surveillance and response (IDSR) – including tools for ID management and case management
11. Donor register of digital platforms and implementations to foster and incentivize interoperability, and use-case-focused value proposition
creation workshop held November 12-14, 2015 in Washington, D.C. Participating implementing partners included developers of common eHealth/mHealth platforms and tools—such as DHIS2, iHRIS, OpenMRS, OpenLMIS, OpenSRP, MOTECH, ONA, RapidPro, and many others (see full list of workshop attendees).

Group discussions of most critical barriers and interactive deliberations around potential solutions led to the development of preliminary outlines of concept notes for ideas to improve health information exchange.

**Donor Organizations’ Roadmap for HIS Interoperability**

The co-creation workshop presented an opportunity for key representatives from multilateral and bilateral donor organizations, as well as private foundations, to engage in discussions around key interoperability issues with HIS technology service providers on Day 1, while also holding donors-specific conversations on Day 2 of the event.

The donors-specific sessions sought to improve coordination on HIS investments and explore potential alignment on interoperability efforts. Representatives\(^1\) from the World Bank, WHO, UNICEF, USAID, CDC, Bill and Melinda Gates Foundation, and Paul G. Allen Foundation convened to: 1) share an overview of their agency’s respective HIS portfolios; 2) discuss emerging HIS architectures and their core components; and 3) deliberate priority areas for an **HIS Interoperability Roadmap** for donor agencies.

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### Draft HIS Interoperability Roadmap

Short, medium and long-term actions proposed by participants.

- Develop and socialize the value proposition for HIS interoperability (e.g. enhanced data utilizations and efficiency gains) using use cases, visualization, and documentation
- Create an interoperability maturity diagnostic toolkit to assess the readiness of country-level HIS ecosystems
- Define specifications for an optimal health information exchange (HIE) environment (reference architecture and its key components)
- Support the development of global and country goods that reflect on specifications for HIE/interoperability (e.g. facility, patient, and health worker registries, data dictionaries, assessment tools, source code)
- Support the establishment of national-level HIS governance/coordination mechanisms and the development of HIS strategic plans
- Support the establishment of country-level HIS teams in MOHs with adequate budgets, technical expertise, and decision-making authority
- Develop standard procurement processes (e.g. standard RFP and contractual language, and proposal evaluation criteria) on HIS interoperability
- Ensure projects with digital HIS components budget for interoperability at the country level

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\(^1\) Key representatives from DFID, NORAD, GAVI, and the Global Fund were invited and sent their regrets.