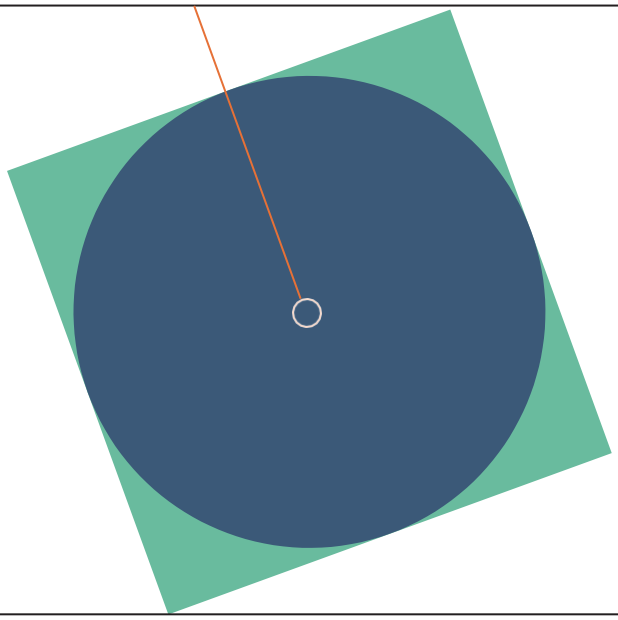
Working Paper

November 2023

Data Standards for Child Care and Protection Case Management Information Systems

Current Landscape and
Future Development



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DATA FOR impact

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Data Standards for Child Care and Protection Case Management Information Systems

Current Landscape and Future Development

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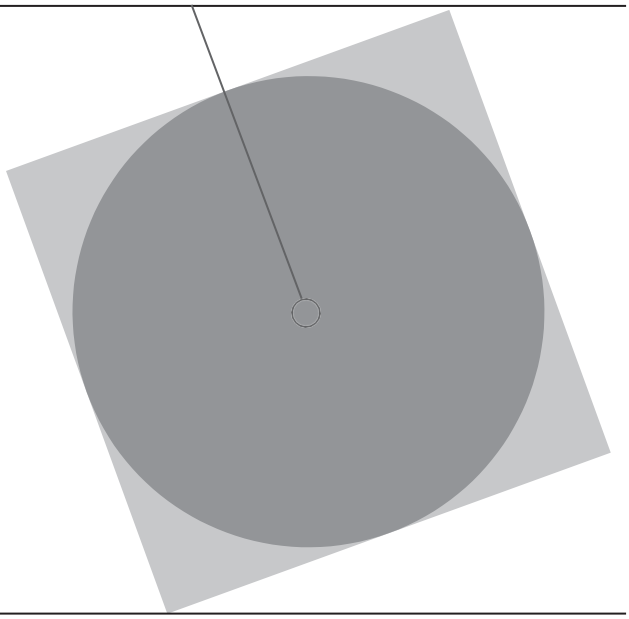

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Abbreviations and Acronyms

CMIS	case management information system
CPSS	Child Protection System Strengthening
DPGA	Digital Public Goods Alliance
D4I	Data for Impact
EHR	electronic health record
FHIR	Fast Interoperability Health Care Resources
HXL	Humanitarian Exchange Language
ISO	International Organization for Standardization
RD4C	Responsible Data for Children
UNICEF	United Nations Childrens Fund
UNHCR	United Nations High Commissioner for Refugees

Introduction

The purpose of this paper is to provide an overview of data standards and their potential use case in the field of case management information systems (CMISs) for child care and protection, to review the work that has already been done that could be built upon to develop these data standards, to understand the challenges that they would need to overcome, and finally, to identify next steps toward creating them.

Open data standards can be considered a cornerstone piece of digital public infrastructure that allows for more meaningful transmission, manipulation, use, and management of data. They are used in many sectors to foster better understanding and transparency of data by making it easier to exchange, thus improving accessibility and usability. In the field of child protection, the aim of supporting children through secure, accurate, coordinated, and timely case management can be supported by the implementation of data standards in several ways:

- ***International Standardization:*** At a global level, having a shared data structure and definitions enables comparable aggregation and indicators across countries and regions over time.
- ***Between Local Case Management Information Systems (CMISs):*** At a domestic level, there may be multiple CMISs operating within a country, including government and nongovernmental organization systems, or systems covering different geographies. Data standards can improve the experience of case workers using the different systems who are trying to coordinate care for a child or household. Improved ability to coordinate can save time and resources and prevent duplicative processes. It can also limit the need for clients to repeatedly share details of their experiences to access services.
- ***Between Ministries:*** Also at a domestic level, as an intersectional or multidisciplinary field, child protection actors often need to get data from a variety of government agencies and organizations providing services to effectively manage cases. These data come from allied sectors like health, education, justice, and social services.

At all these levels, having a data standard can improve the ability of stakeholders to communicate clearly and coordinate services more effectively. CMISs in child care and protection are constantly evolving; without the digital public infrastructure of a data standard, existing CMISs face high barriers to meaningful data exchange, and new CMISs must develop bespoke solutions, unable to take advantage of lessons learned and save on development costs and potential future integration costs.

What are Open Data Standards?

Data standards are documented agreements on the representation, format, definition, structuring, tagging, transmission, transformation, use, and management of data. Open data standards are also recommended as one of the Principles for Digital Development. Principle #6 states, “An open approach to digital development can help to increase collaboration in the digital development community and avoid duplicating work that has already been done. Programs can maximize their resources—and ultimately their impact—through open standards, open data, open-source technologies, and open innovation. By taking advantage of existing investments when you are able, you can apply finite digital development resources toward creating global goods.”

Adopting a data standard provides a clear understanding of how data is structured and defined, and this understanding can be built upon to facilitate a holistic approach to CMISs. This holistic approach, as outlined in the CMIS Framework developed under MEASURE Evaluation, emphasizes three perspectives; the child, services and planning, and digital design.

- **Increasing Interoperability:** Facilitating sharing and use of data among stakeholders is supported by the adoption of tools and processes developed in accordance with standardized data exchange protocols and vocabularies. By adhering to established standards, organizations can streamline their workflows and ensure compatibility, allowing for more successful and efficient data collaboration.

- **Improving Comparability:** Using data standards allows stakeholders to share a common language and to interpret data elements consistently. It makes it easier to compare data from different sources to draw stronger evidence-based conclusions.
- **Increasing Discoverability:** Open standards include mechanisms for cataloging and indexing data sets, making it easier for data users to discover and access relevant data sets through open data portals or other platforms, and allowing for diverse data sets to be combined to increase usefulness and insight.
- **Enabling Aggregation:** Open standards encourage the publication of new data that are structured in a similar way, making it easier to combine data sets and decreasing the cost and complexity of transforming and combining data from multiple sources. Open standards encourage the creation of new tools and services to take advantage of data that conform to the standard.

However, these potential benefits come at a price. Developing new data standards, promoting their adoption, and managing their ongoing support can be a costly and complex undertaking. Their development involves many stakeholders, systems, and data types. A good data standard must respond to the needs of many stakeholders in a preexisting system. Thus, their development necessitates in-depth consultations with these stakeholders and close review of existing systems to identify overlaps and negotiate common representation. Once a standard is developed, it must be adopted by actors in existing systems, which is an investment that will only be made if there is a clear benefit to adopters. Developers of standards should plan to invest in technical and programmatic support for early adopters. Once adopted, standards require ongoing review, management, and user support. Every standard will require updates and should be prepared with the management structure and resources to support ongoing needs assessment and change management.

Examples of Data Standards in Other Sectors

To maximize the benefits and minimize costs while responding to needs, data standards must be designed with the flexibility to be implemented by system stakeholders, but with enough rigidity to ensure the data can be shared without losing meaning. As a result, exactly what a data standard looks like can vary significantly depending on the needs of the sector and the goals of the standard. Presented here are three example data standards in the humanitarian and human services space that represent a range of approaches. All of these deliver on the benefits of data standards but represent different levels of autonomy and flexibility for users.

- **A Minimum Data Set Approach:** The Human Resources for Health Information System: Minimum Data Set for Health Workforce Registry was developed by the World Health Organization in 2015. Its goal was to create a baseline set of available data that ministries of health could refer to in the development or modification of existing human resources information systems. The standard aimed to enable health workforce data interoperability but does not address many of the other areas that data standards can, such as the transmission, manipulation, use, and management of data. Figure 1 shows the types of data elements that are covered by this standard.

Figure 1. Minimum Data Set for Health Workforce Registry as Presented by WHO

Minimum data set for Health Workforce Registry

This section provides 10 minimum data sets that are essential for designing interoperable and functional electronic health workforce registries.

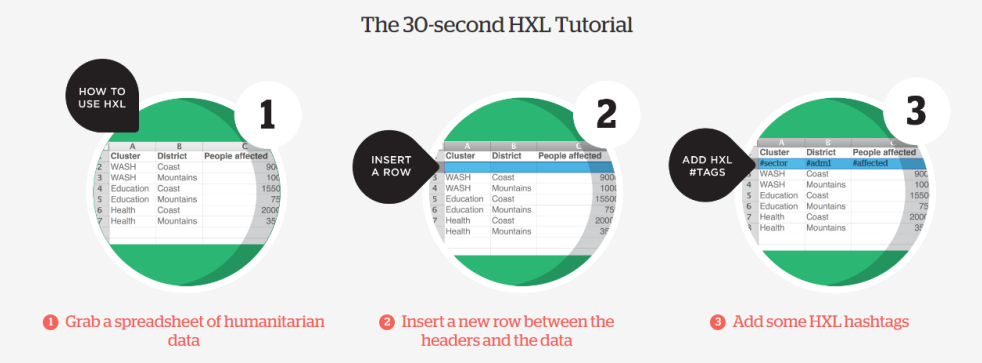
Table 3. **Minimum data set for health workforce registry**

Item	Minimum data set	Data elements
1	Identification Number	*Unique identification number* or other form of ID, *date of issue, date of expiration, place of issue*
2	Full Name	First name, last name, middle name, maiden name, other name 1, other name 2, other name 3
3	Birth History	*Date of Birth, Sex at Birth, Place of Birth* (country, town), father's name and mother's name, *photograph*
4	Citizenship, Country of Residence, and Language	Citizenship at birth, citizenship at present, country of residence, ability in spoken and written languages
5	Address	Physical address (country, town, street address)
6	Contact Information	*Telephone number, email address*, emergency contact name
7	Professional License and Certification	Education, license and certification name, issuing institution, date of issue and date of expiration, photograph
8	Employment Status	*Employment status, employment title* and *occupational category*
9	Employment Address	Full address of current employer
10	Data Submission Institution	Name of the institution submitting data; date and time of submission

As described earlier, each data set contains several data elements. The standardization of data elements is accomplished using relevant metadata provided in the subsequent pages.

- **An Improved Data Sharing Approach:** The Humanitarian Exchange Language (HXL) was released in 2016 and focuses on making existing data practices more easily exchangeable. HXL is a tagging system to make data machine readable for sharing, but which does not define any common vocabulary or structure. The goal of HXL was incremental improvement to data sharing without creating new tools or requiring new skills. In an emergency, humanitarian workers need to quickly organize data from disparate sources with different objectives and terminology, so the flexibility of HXL to add tags to any data set and create new codes was designed to respond to these unique needs. Figure 2 shows how a user can add HXL tags to their existing data sets.

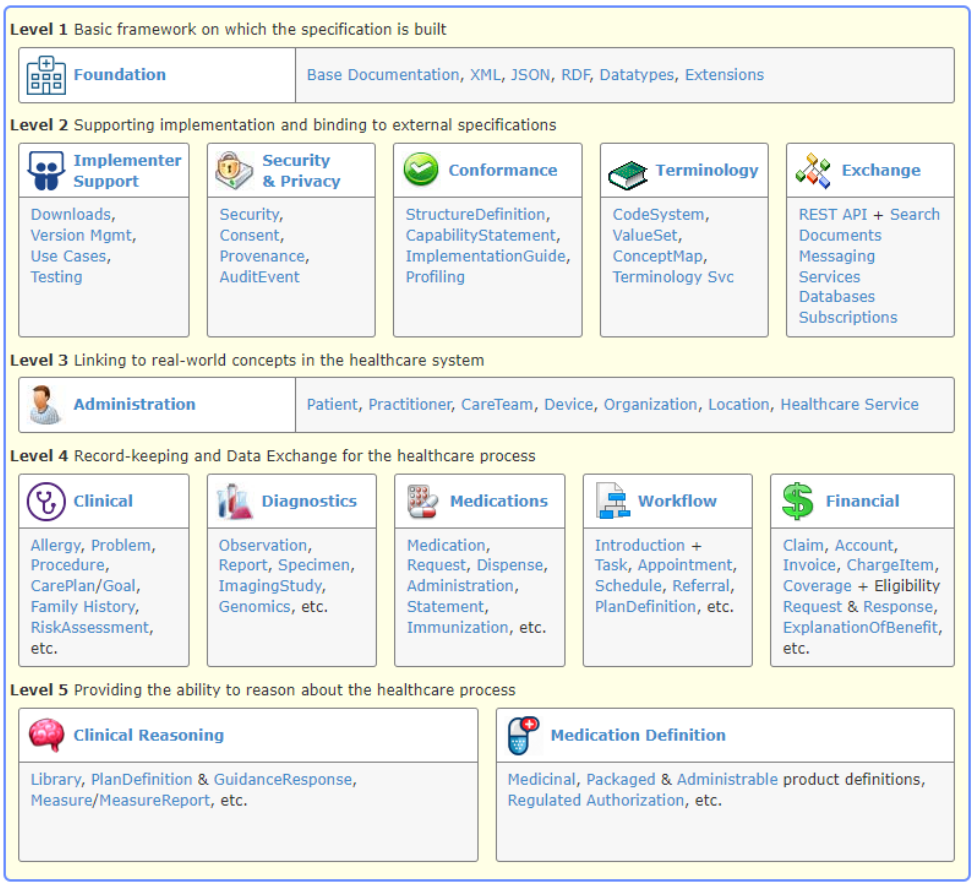
Figure 2. 30-Second HXL Tutorial



- **A Full Data Standard Approach:** FHIR (Fast Interoperability Health Care Resources) is an interoperability standard for healthcare information. Its development began in 2012 in response to a market need and had early support and adoption from major electronic health record (EHR) system providers. The FHIR standard aims to define the content and structure of most of the data shared across EHR implementations. It is organized into modules that represent different functional areas of

the standard related to infrastructure, privacy and security, programmatic and financial content, and clinical reasoning. FHIR was developed by Health Level Seven International, a not-for-profit organization accredited by the American National Standards Institute, which is focused exclusively on the development, maintenance, and promotion of standards for global health interoperability. Figure 3 outlines the modules that are included in the FHIR standard, covering topics from security and privacy to medications and diagnostics.

Figure 3. FHIR Modules as Presented by Health Level Seven International

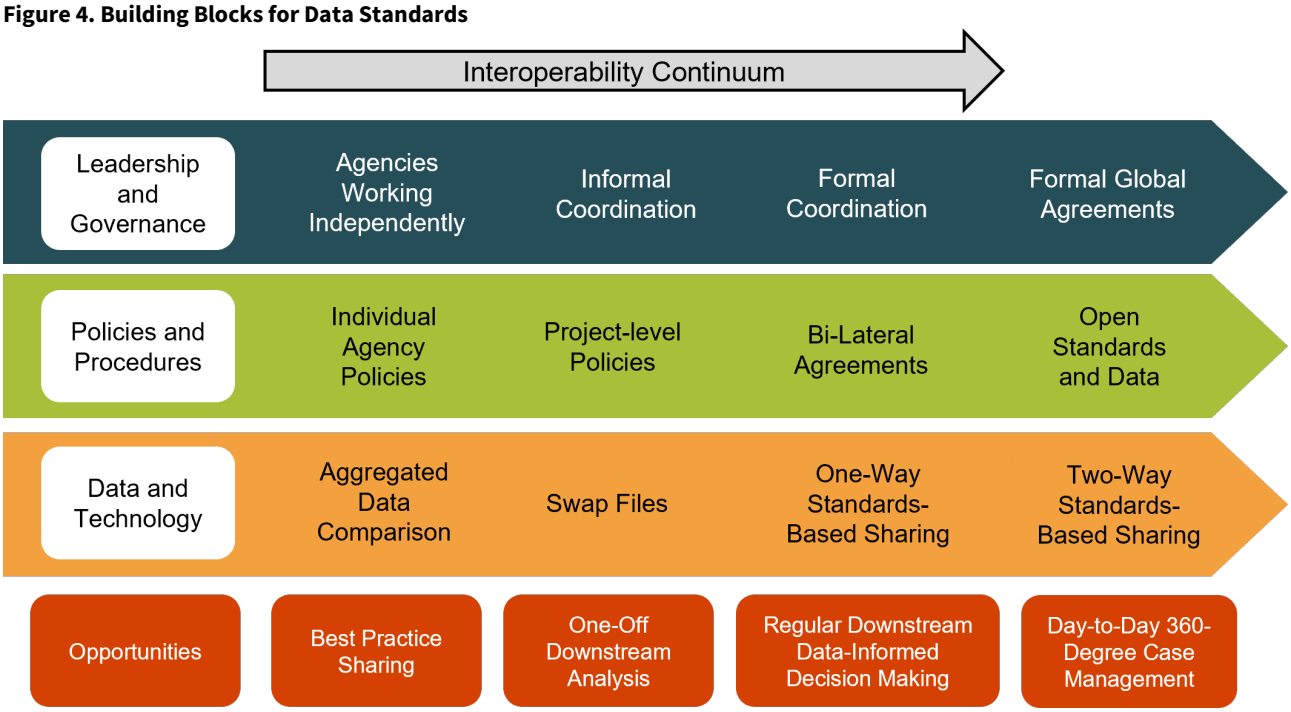


Building Blocks of Data Standard Development

Completed data standards are focused on the information systems in use; however, their utility builds upon a deeper programmatic and operational shared understanding between their users. This paper proposes the following model to understand how programmatic and technical interoperability intersect—to consider **Leadership and Governance**, **Policies and Procedures**, and **Data and Technology** as three separate streams of practice that contribute to an interoperability continuum, along which there are increasing opportunities for collaboration, coordination, and interoperability of data to improve outcomes for children.

In such a model, the ultimate outcome in the child care and protection space might be a data standard that supports an instantaneous 360-degree view of cases for providers, where all of a child's interactions with various agencies can all be understood together. However, there are many potential positive outcomes that also exist on the continuum, which are fed by the same building blocks and which also offer opportunities to streamline operations and improve services for children and families.

Figure 4. Building Blocks for Data Standards



The **Governance and Leadership** stream reflects the principles that guide the use and management of data. This stream is critical to the common understanding of the value of data and users' responsibilities when they engage with data. The leadership buy-in that is built here is the cornerstone of understanding the potential uses for interoperable data and developing a shared vision. Effective leadership facilitates collaboration among various stakeholders, streamlining efforts, and data resource utilization.

The **Policies and Procedures** stream refers to the processes that govern work within and between entities, especially work related to data collection, management, and use, including programmatic standards, but also the ways that teams and organizations can interact and collaborate with others.

The **Data and Technology** stream relates to the details of the data uses and the common vocabulary used. These details can include common indicators and common data sets but at a high level also include the frameworks that define how data fit together to form a sector's information ecosystem.

Recognizing that significant work has been done in child care and protection along all of these streams, to reach sectoral consensus on best practices for CMISs, Data for Impact (D4I) sought to map what has already been done and outline where the needs remain in order to further develop the data and technology workstream as well as develop open data standards that would enable two-way standards-based data sharing.

Consultations on Applicability to CMISs

To accomplish this aim, D4I conducted in-depth consultations with 10 globally focused stakeholders between March and August 2023 to understand:

- **Standards and systems in use:** The goal of this line of questioning was to understand the leadership and governance, policies and procedures, and data and technology already in use or being developed in CMISs for child care and protection. D4I explored the process for arriving at these existing resources and any lessons learned from different approaches to facilitating the stakeholder engagement process.
- **Challenges and implications of expanding the use of standards:** These questions explored how the standards in place are currently operationalized and how that might be improved and expanded in the future. D4I discussed the use cases that would provide the most value for the sector and the

CMIS features that separate it from other data systems, like its intersection with other sectors and systems that child care and protection use.

- **Perspectives on ownership, management, and implementation of standards:** This line of questioning sought to understand the experiences of other sectors, as well as the operational and political realities of the CMIS space. Questions were directed to stakeholders related to what has worked and not worked in the existing leadership and governance, policies and procedures, and data and technology stream and what other models exist that might serve the CMIS.

Stakeholders were identified through snowball sampling and fell into the following five categories:

1. Implementers of Existing CMIS Systems and Standards
2. Implementers of Existing Data Standards in Other Sectors
3. Child Protection Thought Leaders
4. Data Standard Thought Leaders
5. Developers of Existing Standards in Child Protection

Annex 1: Interview Guide and **Annex 2: Interviewees** contain the full list of interviewees and the specific questions that served as a framework for discussions.

The following section describes findings from D4I's consultations with stakeholders in the areas of data standards and systems in use; goals for and implications of expanding use of standards; and perspectives on ownership, management, and implementation of standards. They are reinforced with learning from a review of existing data standards in human services, international frameworks of child human rights, and documents on child protection in humanitarian action.

Findings

Through stakeholder consultations and a review of existing work in the sector, critical components of each of the three workstreams identified in our theory of data standard development (Leadership and Governance, Policies and Procedures, and Data and Technology) were identified that would contribute clearly to a data standard for the CMIS. Stakeholder consultations explored both the pieces that had already been developed and how they were used, as well as remaining gaps that would need to be addressed for an open data standard to be developed, adopted, and effective.

Governance and Leadership

Consultations all suggested that principles to guide the use and management of data were a critical lodestar for the development of policies and data standards. Such principles would enable leadership buy-in to agree on a direction, adopt a framework for understanding and communicating, as well as provide critical flexibility to interpret results according to the programmatic need and local legal frameworks as applicable. Principles generally focus exclusively on protecting data, which can create silos of information and inefficiencies in collection that reduce the utility of the data. However, there are examples, like the Health Data Governance Principles, which find a balance between protecting subjects' data and promoting their use.

The Principles for Digital Development provide a holistic way of thinking about how the CMIS, and other information systems, should be developed and managed. The Responsible Data for Children (RD4C) principles provide an additional layer of context, without being prescriptive about the solutions. A goal for the RD4C Principles is to be recognized under the Digital Public Goods Alliance as a public good, such that new digital public goods could be assessed according to their compliance with these principles.

Once guiding principles are in place, there is still a challenge to align them to locally applicable laws. Here policies and procedures need to be developed and commonly accepted, with country-specific CMIS case studies potentially used to guide this process.

Policies and Procedures

Policies and Procedures, the mandated processes that govern work within and between entities, for CMIS data fall into two major categories. The first is related to the programmatic standards, which define the activities and set standards for their implementation. The second is about how organizations work together to align goals and share information.

When it comes to defining child protection activities in the context of humanitarian settings, stakeholders agreed that the Minimum Standards for Child Protection in Humanitarian Action guide professionals in preventing harm and supporting the recovery of children caught up in crises and that they are the benchmark against which programs can be compared. These standards include key actions to take and ways to measure, including disaggregation to have available for various topics, and a standard specifically about information management that covers the responsibilities of child protection actors at each stage of the information management cycle.

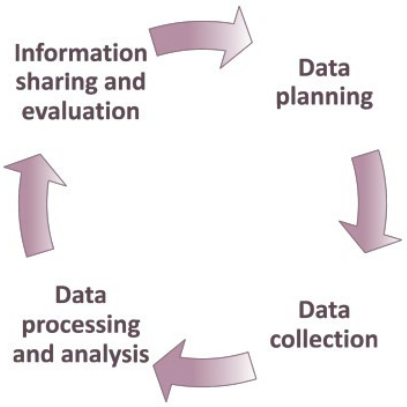


Figure 5. Information Management Cycle as Defined in Sphere Standards

Additional guidance, like the Inter Agency Guidelines for Case Management and Child Protection, provides details on how to implement activities. Consultations underscored some of the ways that these standards and guidelines refer to child protection in humanitarian situations, where systems can be less developed and case workers face constraints, so they would require additional context and specificity to be applied to other situations with different resources.

A second challenge with organizations working together is being able to understand each other's data ecosystem to define the best ways to collaborate. Benchmarking frameworks are a valuable tool for helping different actors relate to each other and understand where their opportunities are with each other. The United Nations Children's Fund (UNICEF) Child Protection System Strengthening (CPSS) Benchmarks look at seven intermediate outcomes in their CPSS approach, including data collection and monitoring systems, and utilize a four-phase maturity model to understand where opportunities to strengthen systems are, which can be a starting point to defining goals.

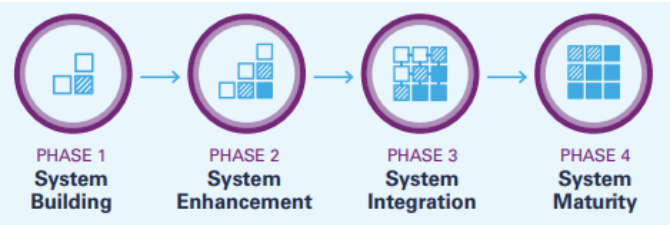


Figure 6. UNICEF Four-Phase Model of CPSS

Once organizations are programmatically aligned, the next step is developing or adopting policies and procedures for data sharing and data transfer. Bilateral agreements, like the UNICEF and UNHCR (United Nations High Commissioner for Refugees) Blueprint for Joint Action focuses on streamlining the approach to serving refugee children. It reaffirms UNICEF's and UNHCR's long-standing commitment to work with governments of refugee-hosting countries and includes goals related to a joint approach for data collection and analysis. Stakeholder interviews revealed that the implementation of this blueprint has surfaced challenges and underscored how difficult alignment can be to operationalize, even with a mandate and appropriate agreements in place. However, as a bilateral agreement, this provides more of an example to others rather than a standard to follow.

There are templates available to facilitate the development of these agreements, like the Alliance for Child Protection in Humanitarian Action's Case Management Data Protection and Information Sharing Protocol, which details appropriate practices for data protection and includes collection, processing, storage, sharing, and destruction of personal and non-personal data as well as specific data points to be collected and shared with whom and under what circumstances.

The Data Responsibility Working Group (DRWG) at the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) Centre for Humanitarian Data convenes members and produces guidance, like the IASC (Inter-Agency Standing Committee) Operational Guidance on Data Responsibility in Humanitarian Action, which provides templates for some of the recurring questions in the space, like an Information Sharing Protocol, Data Sharing Agreement, and SOPs for Data Incident Management that can provide a starting point for bilateral, or wider, agreements.

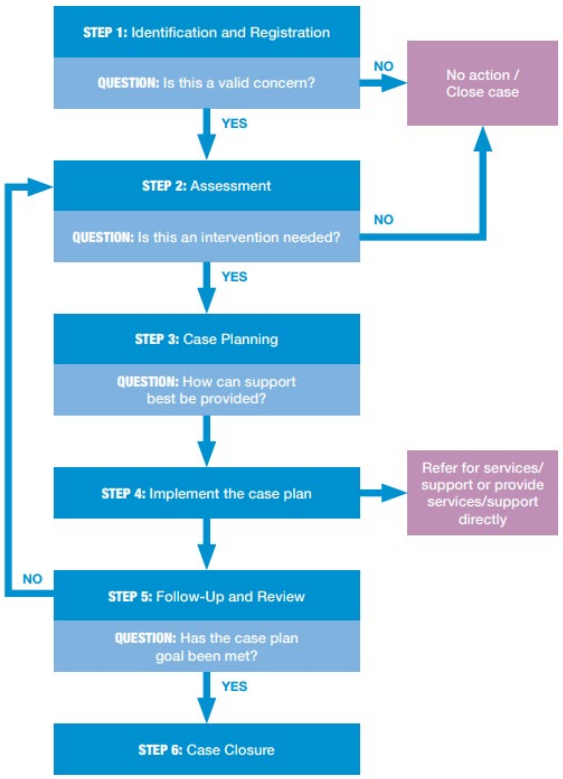
A missing piece of the governance for CMIS data is related to commonly accepted standards for data storage and data transfer. These types of standards are something that could be included in a data standard, as they are in the FHIR Security and Privacy Module for the health sector, which outlines how to protect a server, manage authorization, and access and document audit details.

Data and Technology

Data is the final building block in the creation of a standard. It is inclusive of different data types, how they relate to each other, the specific terms that are used, and how they can be aggregated and combined into indicators of progress.

The Inter Agency Guidelines for Case Management and Child Protection provide an outline of the core steps of the case management process, and the Information Management for Case Management (IM4CM) resources include the Standard Child Protection Case Management Forms that outline specific data to collect and some terms to use. These steps to case management form the basic system digitized by any CMIS.

Figure 7. Inter Agency Guidelines for Case Management - Case Management Process



The Alliance for Child Protection in Humanitarian Action developed the forthcoming **Data Categorization for Child Protection Case Management** to lay the groundwork for interoperability by standardizing data elements and linking them to shared vocabularies. It will provide significant additional detail on the specific terms and fields to use in collecting CMIS data in humanitarian settings. The categorization will offer guidance on how to organize data into agreed-upon data categories, linking each data element to a controlled and shared vocabulary.

This shared structure and vocabulary was established through a consultative process that included the whole of the case management task force. The work involved six country-level consultations in humanitarian settings, focused on those with child protection and monitoring and evaluation experience, to gather a large set of relevant fields and terms used and narrowed them to a minimum acceptable data set for humanitarian situations. This narrow focus for the standard was designed to recognize the practical limitations for case workers in humanitarian situations, and provide a functional

standard for that context, rather than representing all possible data categories in child protection case management.

Finally, there are the CMIS systems for which their existing data dictionaries can provide a model for future open versions. The Primero CMIS, developed by UNICEF, has been implemented at a significant scale internationally, with several different templates to support thousands of users spread across more than 50 countries and territories. The UNHCR-owned ProGres v4 system has also been implemented in many countries for refugees, with the first major interoperability exercise between those two systems being piloted in Gambella, Ethiopia using OpenFn.

Challenges and Implications of Expanding Standards

Consultations uncovered a variety of limitations of the current data systems in use and their potential to be expanded into widely accepted data standards. Some of the key challenges that were identified include:

Shared Terminology and Semantic Interoperability: The United Nations Convention on the Rights of the Child and core principles of non-discrimination, best interests of the child, right to life, right to survival and development, and right to be heard, underscore all child protection work. The terms laid out in this convention create the basis for the policies developed and the way indicators and data are defined. However, stakeholders shared that there are still areas where understanding of common terms is not where it needs to be. Concepts like “referrals,” “assessments,” and “best interest of the child” can have different meanings, or even different legal definitions across countries or agencies. When implementing standards and programs there is always a process of presenting international standards and then matching them to a country’s particular protection laws and local context. Many of these concepts get immediate agreement, some reach consensus after explaining, and a small portion always end up interpreted differently based on the context.

The work of the Alliance for Child Protection in Humanitarian Action on data categorization represents significant progress on this challenge, at least in the humanitarian space, and would provide an excellent foundation on which to build a data standard for a non-emergency or development setting. There are topics that would be covered in much greater depth in a non-emergency setting. For example, protective factors and harmful practices would be difficult for a case worker to explore in an emergency, so these topics are not as fully developed in the current version of the data categorization.

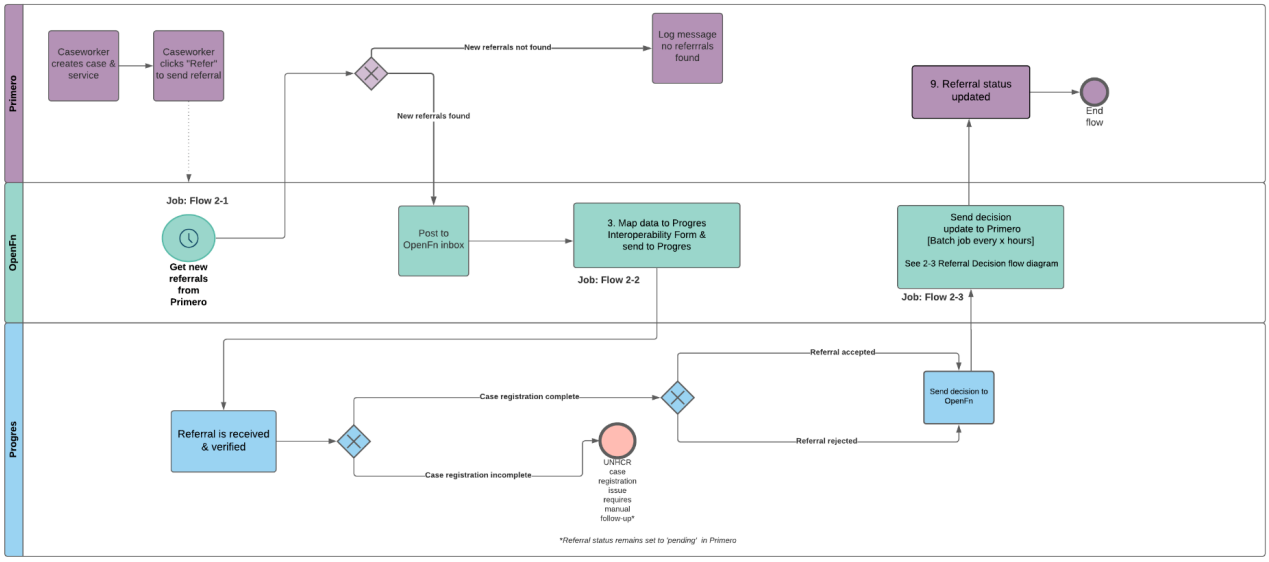
For select other topics that need elaborating, there are additional terminology sets that can be used to support a common language set for the CMIS, like those developed in the Question Sets by the Washington Group for Disability Statistics, and specifically the customizations in the UNICEF Module on Child Functioning.

There are also tools and approaches that could be used to facilitate this process from other sectors. In the health field, the Open Concept Lab community consists of software developers, terminology experts, and process engineers; their tools help to streamline and standardize data across entities by mapping similar definitions across entities. It supports localization by allowing contributors to include their own metadata and promote best practices using standardized content from reference terminologies. Another approach is one used by FHIR, which utilizes both extensible and required binding to give implementers the ability to define their own code sets with additional values and that reflect the law of the land. Topics like gender and marital status may have to accommodate local definitions and legal frameworks with additional terminology not used globally.

Common Architecture: Being able to map different case management system processes is critical to being able to share data in real time and have it be comparable. Improvements in a broader ability to map processes and explain architecture could be more impactful than a completely shared vocabulary.

An example of this would be in the use case of trying to share data between multiple CMISs in a country. The challenge is to understand what actions in one system should "trigger" changes in another. This means having a clear process map for each system and seeing how they align, or not, and negotiating how to operate in the differences. Even if systems are using the same language around topics or actions like a referral, the systematic triggers may be different. In Gambella, Ethiopia, Primero and UNHCR used OpenFn to move data between systems; their project documentation outlines some of the challenges when communicating between systems.

Figure 8. System Data Flow Between Primero and UNHCR ProGres v4 in Gambella, Ethiopia



There are several resources from outside of the child care and protection sector that could be incorporated with a future data standard to help address some of these issues. For example, the GovStack Building Blocks are software components that provide key functionality and can save time in development by providing technical specifications for generic workflows across multiple sectors. The Beckn Protocol is a set of specifications that can be adopted by digital platforms to create decentralized networks. It consists of APIs and data-model and reference architecture that platforms can agree to use that allow them to preform transactions without a central intermediary. As a sector-agnostic protocol, it can be used with any type of data, including CMIS data. These tools from outside the sector can be evaluated in more depth for their fit to the needs for any standard that is developed.

Identifying "Core" and "Add-On" Modules: Much of the work done to standardize the approach and data for the CMIS has been focused on the humanitarian space. While the core needs and definitions are similar in humanitarian and development contexts, there are differences in the level of depth that is possible in different settings, the types of stakeholders whose needs have to be considered and where they are in development and use of the CMIS, and the critical requirement to align the CMIS and data it contains with the country's legal framework and related policies and procedures for child care and protection. In creating a data standard for the CMIS in a development setting, there is a need to identify both a minimum viable data set, as well as additional modules that may be context specific or relate to different capacities.

Ownership, Management, and Implementation of Standards

Developing a standard is only the first step to ensuring its success and utility for users. Standards that are not promoted will not be taken up and used, and if they are used, they must be managed to incorporate new information with revisions and evolve with the space.

The initial phase of a data standard is especially focused on promoting the use of the standard, entailing the development of guidance for new adopters, both those developing new systems and existing ones. A

standard would have to be accompanied by technical support for implementation to reduce the cost of adoption for new users, especially until a critical mass of systems has adopted the standard, and its value proposition was evident.

Standards can be promoted in a variety of ways, depending on how they are framed. The ideal framing for a CMIS data standard would be as a digital public good. The UN Secretary-General defines digital public goods as open-source software, open data, open AI models, open standards, and open content that adhere to privacy and other applicable laws and best practices, do no harm, and help attain the Sustainable Development Goals. The Digital Public Goods Charter supports this framing as foundation digital public infrastructure to facilitate interoperability.

There are organizations that appear well placed to promote the use of the standard, which would lend additional credibility and standing to a standard. The Digital Public Goods Alliance (DPGA) evaluates both technical standards and best practices, and having a CMIS data standard recognized by the DPGA would elevate it as a new digital public good for targeted adopters. Some funders, such as Co-Develop, who support projects compatible with these standards, may also adopt and encourage the use of a CMIS standard in projects they fund.

Any standard that has been adopted by users will need to manage revisions and expansions to accommodate a changing environment. This entails conferring with the user community to solicit needs for revisions and to socialize revised standards. Especially when considered in concert with the need for “Core” and “Add-On” modules, management of the standard would need to support phased approaches. In the FHIR standard, some of this support is managed through Maturity Levels to the level of stability and implementation readiness for different aspects of their specification.

Figure 9. FHIR Maturity Levels

Standard Level	Description
Normative	This content was approved by the ANSI standards process in a previous version (see Normative status note). It has been subject to review and production implementation in a wide variety of environments. The content is considered to be stable and has been 'locked', subjecting it to FHIR Inter-version Compatibility Rules. While changes are possible, they are expected to be infrequent and are tightly constrained. Note that this version of the specification **has NOT** been submitted to ANSI for consideration as a normative standard.
Trial Use	This content has been well reviewed and is considered by the authors to be ready for use in production systems. It has been subjected to ballot and approved as an official standard. However, it has not yet seen widespread use in production across the full spectrum of environments it is intended to be used in. In some cases, there may be documented known issues that require implementation experience to determine appropriate resolutions for. **Future versions of FHIR may make significant changes to *Trial Use* content that are not compatible with previously published content.**
Draft	This portion of the specification is not considered to be complete enough or sufficiently reviewed to be safe for implementation. It may have known issues or still be in the "in development" stage. It is included in the publication as a place-holder, to solicit feedback from the implementation community and/or to give implementers some insight as to functionality likely to be included in future versions of the specification. Content at this level should only be implemented by the brave or desperate and is very much "use at your own risk". The content that is *Draft* that will usually be elevated to *Trial Use* once review and correction is complete after it has been subjected to ballot Some resources with a standards status of 'draft' have an FMM level of 1 or 2 - this means that the committee responsible for them is ready for them to be tested and balloting, but that balloting has not yet occurred. Draft resources cannot have a FMM level greater than 2
Informative	This portion of the specification is provided for implementer assistance and does not make rules that implementers are required to follow. Typical examples of this content in the FHIR specification are tables of contents, registries, examples, and implementer advice
Deprecated	This portion of the specification is outdated and may be withdrawn in a future version. Implementers who already support it should continue to do so for backward compatibility. Implementers should avoid adding new uses of this portion of the specification. The specification should include guidance on what implementers should use instead of the deprecated portion

There are several models for managing a data standard in use today. One model consists of standards that are managed by one of the large international standardization bodies, like the International Organization for Standardization (ISO), Institute of Electrical and Electronics Engineers (IEEE), World Wide Web Consortium (W3C), or International Telecommunication Union (ITU). These organizations work across sectors to develop, promote, certify, and update standards. They have members who nominate technical experts to work on standards and vote on changes. Their standards are not free to use and they certify through audits, with any

new standard responding to a need in the market and based on global expert opinion through consensus. There are also standards that are managed more independently, like FHIR, which is overseen by a nonprofit organization that operates using a similar model with paid members having the ability to vote on changes. Another second model would be identifying a champion organization with convening power in the space to support and manage the standard, similar to how the Alliance for Child Protection in Humanitarian Action manages their data categorization.

Recommendations

1. Identify leadership to drive standard development.

Meaningful data standards are developed with input from a variety of stakeholders. The best candidate to lead the development process would be an organization with convening power and standing in the child protection community to bring these stakeholders together. Given the variety of models for data standards available, from a minimum data set to a full standard, the leadership group will need to ensure that the model selected is responsive to the compelling need of the space.

Technical expertise will be required from across the field to identify the highest value investments to make early and to get consensus on building blocks for the standard to have buy-in from international and domestic stakeholders.

An ideal leadership organization will also have institutional capacity to support the ongoing maintenance and development of a standard to ensure its ongoing value to the child protection community.

2. Catalyze existing investments.

A standards organization like ISO takes several years to develop a new data standard. To avoid a similarly long lead time, existing investments in the standardization of child protection case management information need to be capitalized on.

The available longer drafts of the Alliance for Child Protection in Humanitarian Action data categorization may serve as an excellent springboard for a standard that is applicable to development settings. The various templates and existing implementations of Primero can help to elaborate the building blocks that are ready to be called a minimum data set now and those that could be elaborated on in later releases to meet additional needs.

3. Promote data standards as foundational digital public infrastructure.

In the spirit of the Digital Public Goods Charter, a data standard for the CMIS would serve as an important foundational digital public infrastructure. The conditions for digital public goods to be viable options are unlikely to occur without investment in the core digital layers, like data standards, that underpin them.

By developing a standard that respects and builds upon existing digital public goods, like the GovStack Building Blocks and Primero, there is an opportunity to leverage historical investments to strengthen and support the existing CMIS ecosystem and accelerate growth in the field to support children and to improve the quality, accountability, and timeliness of case management and response services.

Annex 1: Sample Data Dictionary

A data dictionary for the CMIS would include multiple categories, many of which are included in the forthcoming Data Categorization from the Alliance for Child Protection in Humanitarian Action, and some of which may be expanded to meet the need of additional contexts/align with country-specific legal frameworks and practices. A sample table of child characteristics is included below to show what these definitions could look like.

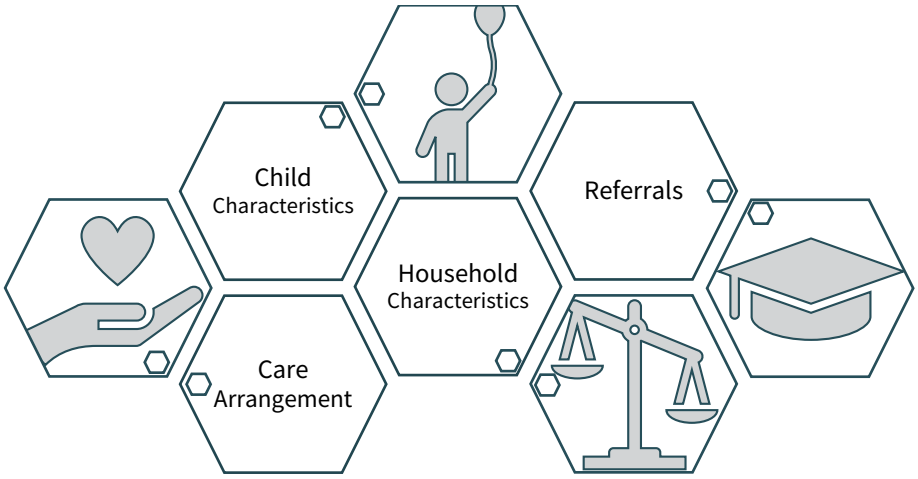


Figure 10. Sample of Intersecting Data Categories in the CMIS

Sample Child Characteristics Fields

Field	Data Elements
Name	First name, last name, middle name, maiden name, other names
Contact Information	Child location and physical address, methods of contact
Birth History	Birth date, place, registration status, gender assigned at birth
Marital Status	State of registered and non-registered unions or planned unions
Disability	Types of impairments or access constraints
Education	Types of formal and information education programs
Contact with Justice System	Types of contact with the system as victims, witnesses, or accused perpetrators of offences

Annex 2: Interview Guide

Interview Questions for Data Standards Activity

Context:

Data standards for case management information systems (CMISs) for child care and protection are important because through them, stakeholders ensure that data collected by different organizations in different places comply to agreed formats. Thus standardized, results on different indicators can be generated and allow comparison over time and between different geographic regions.

Developing agreements by organizations and the owners of information systems on the format and processes that will make such standards for data exchange possible is a complex challenge. In this activity, **Data for Impact (D4I) is consulting stakeholders to document previous and current work to develop data standards to be used in the CMIS for child care and protection.**

Throughout this process, D4I will compile existing open standards developed by, agreed to, adopted by, and maintained by the global community. Based on consultations, the project will develop recommendations for how to proceed with determining a minimum data set, priority indicators, standardized variables, and a sample data dictionary for the CMIS for child protection.

Questions:

- What data standards are you using for the CMIS, Child Protection Information Management System (CPIMS+), or other applicable system?
    - What was the process for arriving at those standards?
    - What were the biggest challenges for arriving at those standards?
    - What facilitated the process?
    - Who were the stakeholders involved? Who were the guiding experts or organizations you referred to?
    - Are there any key references or documents, etc. from that process that you can share?
- What are the future plans for these standards?
    - Further revisions, updates based on implementation of Primero CPIMS+ to date?
    - Broader socialization?
    - Additional developments?
    - Intersection with other sectors/systems/etc.?
- What is your perspective on the global ownership and management of standards like these?
- Who else should we talk to that may have a similar experience or different perspective?

Annex 3: Stakeholders Consulted

- Existing CMIS Systems Implementation
    - Robert McTavish – Primero
    - Taylor Downs – OpenFn
- Existing Data Standards
    - Teddy Berihun – Palladium
    - Frederick Onyango – Palladium
    - Pascale Mwele – Palladium
- Child Protection Thought Leaders
    - Eugenia Olliaro – UNICEF, Responsible Data for Children
    - Aniruddha Kulkarni – UNICEF, Child Protection System Strengthening
- Data Standards Thought Leaders
    - Ricardo Torres – Digital Public Goods Alliance (DPGA)
- Existing Standards in Child Protection Case Management Information Systems
    - Alliance for Humanitarian Action, Case Management Task Force
        - Katharine Williamson – Save the Children Head of Humanitarian Child Protection
        - Marta Passerini – UNICEF CPIMS+ Steering Committee Coordinator

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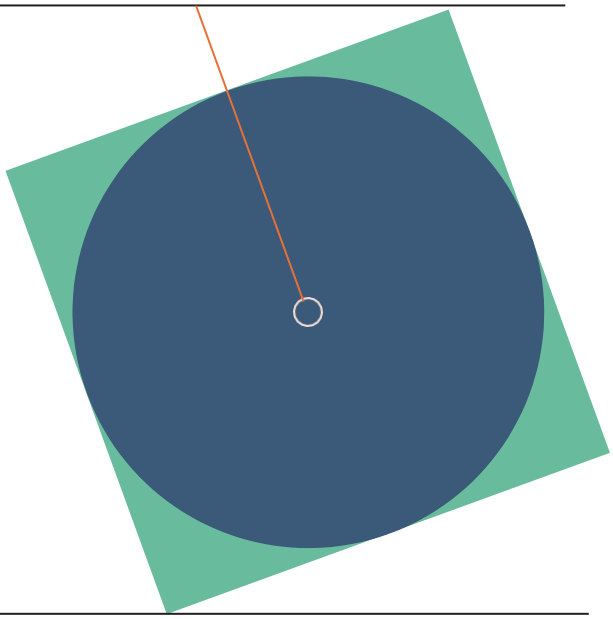

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