Integrating the Healthcare Enterprise

IHE Quality, Research and Public Health Technical Framework Supplement

Aggregate Data Exchange HIV Content (ADX-HIV)

Rev. 1.0 – Draft for Public Comment

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Please verify you have the most recent version of this document. See here for Trial Implementation and Final Text versions and here for Public Comment versions.

Foreword

This is a supplement to the IHE Quality, Research and Public Health (QRPH) Technical Framework V1.0. Each supplement undergoes a process of public comment and trial implementation before being incorporated into the volumes of the Technical Frameworks.

This supplement is published on May 29, 2018 for public comment. Comments are invited and may be submitted at http://www.ihe.net/QRPH_Public_Comments. In order to be considered in development of the trial implementation version of the supplement, comments must be received by June 28, 2018.

"Boxed" instructions like the sample below indicate to the Volume Editor how to integrate the relevant section(s) into the relevant Technical Framework volume.

Amend Section X.X by the following:

Where the amendment adds text, make the added text **bold underline**. Where the amendment removes text, make the removed text ~~**bold strikethrough**~~. When entire new sections are added, introduce with editor's instructions to "add new text" or similar, which for readability are not bolded or underlined.

General information about IHE can be found at: www.ihe.net.

Information about the IHE QRPH domain can be found at: http://www.ihe.net/IHE_Domains.

Information about the organization of IHE Technical Frameworks and Supplements and the process used to create them can be found at: http://www.ihe.net/IHE_Process and http://www.ihe.net/Profiles.

The current version of the IHE QRPH Technical Framework can be found at: http://www.ihe.net/Technical_Frameworks.

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Introduction to this Supplement

The Aggregate Data Exchange-HIV (ADX-HIV) Content Profile supports interoperable reporting of HIV aggregate data. Typically, this entails submission of routine HIV reports from a health facility to an administrative jurisdiction such as a health district and eventually to the national level as well as international reporting on the HIV response.

The motivating context for this content profile originates in the ongoing efforts to address the HIV epidemic in limited resource environments though its potential use is not restricted to these environments. The health information system that enjoys national coverage in such diverse settings is often the routine reporting system. This is the national health management information system (HMIS) which gathers aggregate data from all health facilities so that HIV and other health indicators can be generated, compared and analyzed to produce information to facilitate decision making on relevant course of action and interventions.

The ADX-HIV Profile provides a way to define a Data Structure Definition (DSD) and the normative schema of the aggregate data XML message to be exchanged between systems for a particular aggregate data report. The ADX-HIV Profile addresses the problems associated with not having a common data structure across existing systems for HIV-related aggregate data reporting. Solving this problem provides a baseline that organizations can share, ensuring that aggregate data reported from the same source to different jurisdictions is comparable.

This ADX-HIV Profile defines a common DSD for HIV core indicators with data elements and associated disaggregations along with instructions regarding how to leverage these to generate and exchange conformant XML messages. Interoperable message exchange will be valuable to jurisdictions such as Ministries of Health, and WHO, and to health initiatives such as the U.S. President's Emergency Plan for AIDS Relief (PEPFAR), the Global Fund, UNAIDS, and others (see Figure 1). A jurisdiction can extend the ADX-HIV DSD and validation schemas to meet additional HIV reporting requirements specific to their context.

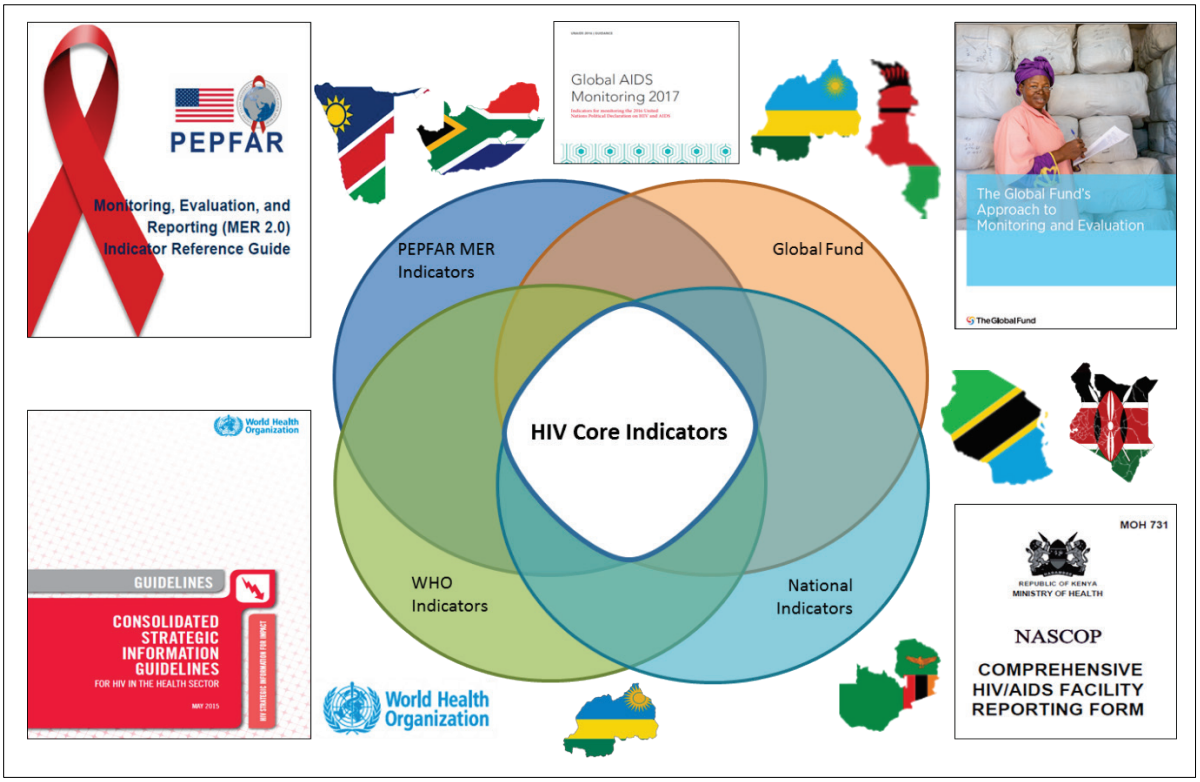

Figure 1: A Venn diagram of core HIV care and treatment indicators from different jurisdictions

Approach

This profile leverages ADX specification to normatively describe HIV core indicators with data elements and associated disaggregations that can be leveraged to generate and exchange conformant XML messages. These HIV core indicators are drawn from indicator sets published and used by several jurisdictions including Ministries of Health, and WHO, and health initiatives such as the U.S. President's Emergency Plan for AIDS Relief (PEPFAR), the Global Fund, UNAIDS, and others.

The data elements and associated disaggregations for the HIV core indicators are then used to generate a set of artifacts including a common Data Structure Definition (DSD) for HIV, two schemas, a W3C schema and a schematron for validating XML messages exchanged between Content Creators and Content Consumers in different jurisdictions and a sample XML data message is also provided.

Open Issues and Questions

1. This profile leverages ISO-8601 to codify age groups, HL7 administrative sex to codify sex (M or F… but not Unknown), and SNOMED-CT to codify HIV test result status. Are there alternate code systems and value sets in broad use for HIV indicator reporting? Should any of these be considered as the default?

2. Particularly regarding the use of SNOMED-CT to indicate HIV test status – there is no code to distinguish whether the status (e.g., HIV positive) is a previously-known status or whether it is known as the result of a newly-done HIV test. The convention proposed in this profile is to append an asterisk (*) to the SNOMED-CT code to denote that a newly-tested result is being reported. Is there an existing code system and value set that could be leveraged? If not – how will support be gathered for a new SNOMED-CT code request to be made and under whose auspices should this request be submitted (e.g., WHO)?
3. There are situations where there is a misalignment in the age group disaggregations between (for example) a national MOH and WHO. If the age group disaggregation specified in this profile is more precise than that of the MOH… what should be the approach to develop ADX-HIV conformant messages? Or what should be the approach for developing a national extension of ADX-HIV?
4. Additional PEPFAR indicators and data element codes will be developed and included in Volume 4. This work is underway but not yet completed for this public comment version.
5. Additional appendices for ADX-HIV DSD and business rules validation schemas will be developed for the final version. This work is underway but not yet completed for this public comment version.
6. The SNOMED-CT code favored for indicating “on ART” is from the NIH site: bioportal.org. The code (432101000124108) is not actually found using IHTSDO’s SNOMED-CT browser (which is surprising). As with HIV test coding; our convention is the append an * for “newly on ART”. Is this the right way to do it? Are there other coding schemes in use that should instead be adopted?
7. The numerator data elements for ART5 and VLS3 are disaggregated by “pregnant” and “breastfeeding”. It is not clear whether these are modifiers (e.g., further disaggregations) to the age+sex disaggregations or whether these are to be separately reported as their own independent disaggregations.

Closed Issues

- There is no standard or coding systems for the age groups.
  RESOLUTION: Adopted the ISO8601 to create codes for age groups.
- The age groups from the existing indicators published by different jurisdictions or organizations are not harmonized.
  RESOLUTION: Map the age groups across the jurisdictions. For ADX-HIV Profile the age group selected shall be fine enough to allow computation of the age groups from the other jurisdictions.

General Introduction

Update the following appendices to the General Introduction as indicated below. Note that these are not appendices to Volume 1.

Appendix A – Actor Summary Definitions

Add the following actors to the IHE Technical Frameworks General Introduction list of actors:

Actor	Definition
Content Data Structure Creator	The Content Data Structure Creator creates a message structure definition that may be employed by a Content Creator to develop profile-conformant messages for exchange with a Content Consumer.
Content Data Structure Consumer	The Content Data Structure Consumer consumes a message structure definition that may be employed by a Content Creator to develop profile-conformant messages for exchange with a Content Consumer.

Appendix B – Transaction Summary Definitions

Add the following transactions to the IHE Technical Frameworks General Introduction list of Transactions:

Transaction	Code	Definition
ADX POST Content	QRPH-53	The POST Content transaction is used by the Content Creator to perform an HTTP POST request on the Content Consumer.

Glossary

Add the following glossary terms to the IHE Technical Frameworks General Introduction Glossary:

No new glossary terms.

Volume 1 – Profiles

Copyright Licenses

NA

Add the following to the IHE Technical Frameworks General Introduction Copyright section:

Domain-specific additions

NA

Add new Section X

X Aggregate Data Exchange for HIV Profile (ADX-HIV)

The Aggregate Data Exchange for HIV Profile (ADX-HIV) specifies how to create and consume ADX messages for core HIV care and treatment indicators. ADX-HIV leverages the actors and transactions defined in the ADX Profile to enable interoperable reporting of routine HIV indicator data.

ADX-HIV is a Content Profile that defines a common Data Structure Definition (DSD) with structural metadata (codelists with data elements and associated disaggregation) to represent HIV core indicators that could be readily used in existing systems for reporting. Additionally, it specifies how to create and extend HIV care and treatment normative schema and XML messages. These are used for producing, validating and processing aggregate data by diverse Content Creators and Content Consumers of these core HIV indicators.

Presently, multiple information systems are used to monitor progress towards achieving epidemic control and the 90-90-90 global goals. These goals, to be accomplished by 2020, are: for 90% of people with HIV to be diagnosed and know their status; for 90% of people living with HIV (PLHIV) to be on Antiretroviral Therapy (ART); and for 90% of people on ART to be virally suppressed.

In practice, the data elements and disaggregations used for reporting HIV care and treatment indicators are dependent on the organization or jurisdiction publishing them. ADX-HIV will help govern and enforce interoperability between HIV point of care (source) systems and HMIS (receiver) systems. This will reduce the burden within jurisdictions for developing HIV core indicators schema. It will also foster harmonization of HIV core indicators across jurisdictions and increase the ability to compare results between health facilities, subnational levels and even countries.

X.1 ADX-HIV Actors, Transactions, and Content Modules

This section defines the actors, transactions, and/or content modules in this profile. General definitions of actors are given in the Technical Frameworks General Introduction Appendix A at http://ihe.net/Technical_Frameworks.

Figure X.1-1 shows the actors directly involved in ADX-HIV and the direction that the content is transmitted.

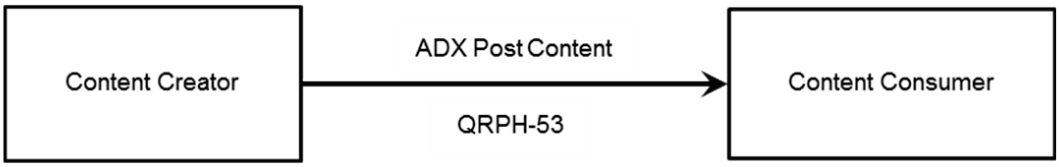

Figure X.1-1: ADX-HIV Actor Diagram

Table X.1-1 lists the content module(s) defined in the ADX-HIV Profile. To claim support for this profile, an actor SHALL support all required content modules (labeled "R") and may support optional content modules (labeled "O").

Table X.1-1: ADX-HIV Profile - Actors and Content Modules

Actors	Content Modules	Optionality	Reference
Content Creator	ADX-HIV Content	R	Z.8.x
Content Consumer	ADX-HIV Content	R	Z.8.x

X.1.1 Actor Descriptions and Actor Profile Requirements

X.1.1.1 Content Creator

The Content Creator SHALL conform to all requirements defined for this actor in ADX and SHALL be able to generate an XML file that is conformant to the ADX-HIV Content Module and transmit it to the Content Consumer using QRPH-53.

X.1.1.2 Content Consumer

A Content Consumer SHALL conform to all requirements defined for this actor in ADX and SHALL be able to receive and process an inbound XML document that is conformant to the ADX-HIV Content Module and conveyed using QRPH-53. What it means to process the XML document depends on the nature of the processor and is out of scope of this profile. For example, it might persist the individual data tuples, or it might format them for display or perform further aggregation on the data.

X.2 Actor Options

Table X.2-1: ADX - Actors and Options

Actor	Option Name	Reference
Content Creator	No options defined	
Content Consumer	No options defined	--

X.3 ADX-HIV Required Actor Groupings

There are no Required Actor Groupings defined.

X.4 ADX-HIV Overview

The Aggregate Data Exchange for HIV Profile (ADX-HIV) specifies how to create and consume ADX messages for core HIV care and treatment indicators. ADX-HIV leverages the actors and transactions defined in the ADX Profile to enable interoperable reporting of routine HIV indicator data.

ADX-HIV is a Content Profile that defines a common Data Structure Definition (DSD) with structural metadata (codelists with data elements and associated disaggregation) to represent HIV core indicators that could be readily used in existing systems for reporting. Additionally, it specifies how to create and extend HIV care and treatment normative schema and XML messages. These are used for producing, validating and processing aggregate data by diverse Content Creators and Content Consumers of these core HIV indicators.

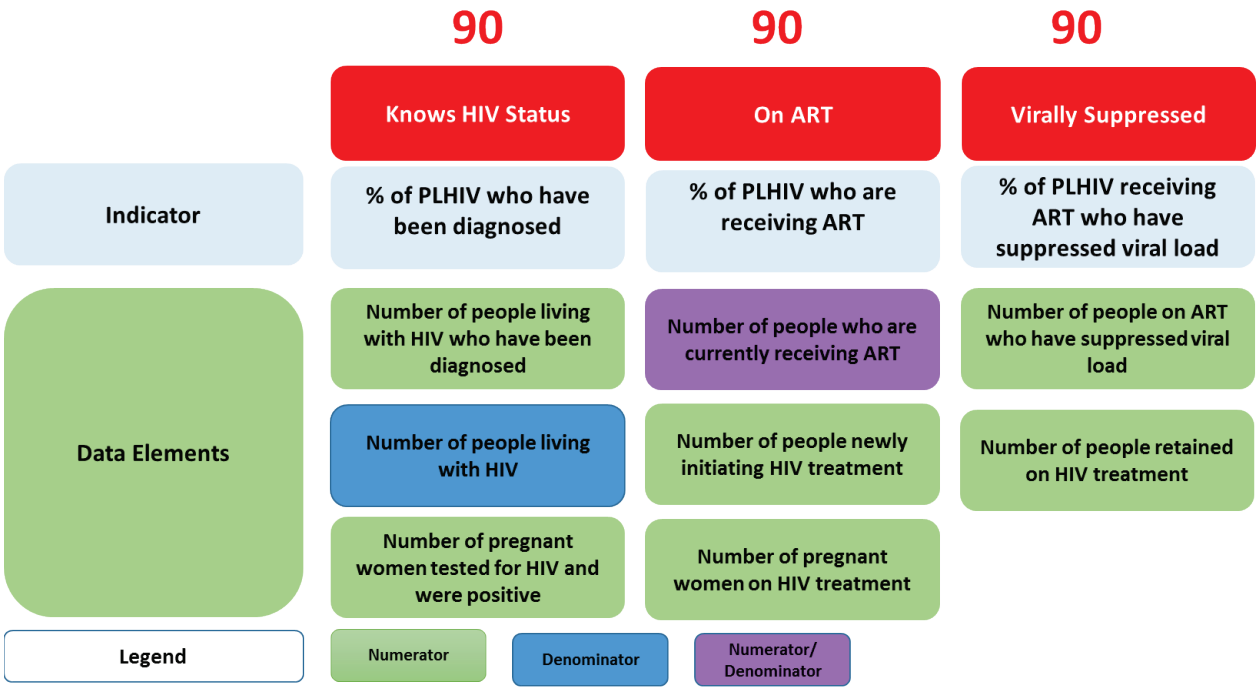

Figure X.4-1: Core HIV indicators for monitoring and evaluation of the 90-90-90 goals

Presently, multiple information systems are used to monitor progress towards achieving epidemic control and the 90-90-90 global goals. These goals, to be accomplished by 2020, are: for 90% of people with HIV to be diagnosed and know their status; for 90% of people living with HIV (PLHIV) to be on Antiretroviral Therapy (ART); and for 90% of people on ART to be virally suppressed.

In practice, the data elements and disaggregations used for reporting HIV care and treatment indicators are dependent on the organization or jurisdiction publishing them. ADX-HIV will help govern and enforce interoperability between HIV point of care (source) systems and HMIS

(receiver) systems. This will reduce the burden within jurisdictions for developing HIV core indicators schema. It will also foster harmonization of HIV core indicators across jurisdictions and increase the ability to compare results between health facilities, subnational levels and even countries.

ADX-HIV is based on the QRPH Aggregate Data Exchange Profile (ADX). It defines an ADX-conformant DSD consisting of data elements for the core indicators used for monitoring HIV 90-90-90 goals with associated disaggregation that can be readily used by different jurisdictions. An XML schema definition (XSD) generated from the DSD is also provided for validating the messages exchanged. Additional data elements and their disaggregations may be defined as necessary within the context of use - for example, within a particular country or implementing jurisdiction to meet the established reporting requirements. As indicated by Figure X.4-2, this profile defines the Content Module that supports interoperable ADX-HIV message exchange.

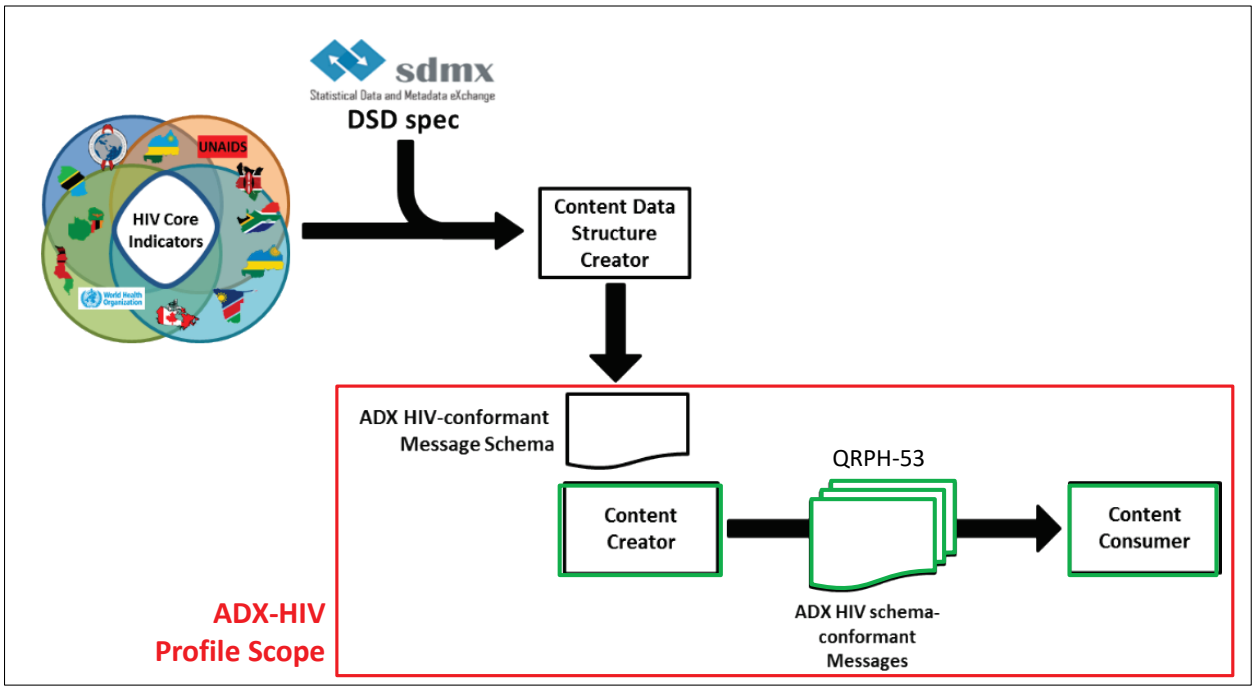

Figure X.4-2: An illustration of ADX-HIV Profile inputs and outputs

X.4.1 Concepts

The following defined concepts are used in this profile:

Age Group: an age group is defined as a grouping of individual records aggregated based on the subject's age at the time of reporting. For this profile, age group is expressed as a period range using ISO-8601 with the convention that persons in the age group are at least as old as the first number in the range and of an age less than the last number in the range. As an example, persons in the age group P5Y--10Y range in age from 5 years 0 days old to 10 years 0 days old.

Data Structure Definition (DSD): a formal SDMX v2.1 definition of the structural metadata of an ADX message.

Data value: a reported value with its associated keys. For routine HIV, data value associated key would represent a data element subject, a temporal dimension and a spatial dimension. For example, number of people started on ARV in February 2018 in Kenya.

Data Value Set: a collection of data values with associated keys conforming to the ADX DSD.

Data element: the atomic subject of data collection such as "number of individuals tested for HIV", "number of people started on HIV treatment", "number of pregnant women on ARV". This concept is required for the construction of HIV indicators but is not in itself an indicator.

Organization Unit: the spatial dimension of the data value tuple. It can identify a single health facility or a geographic/administrative area such as district, province or country. Within a national reporting structure, an organization unit represents a single node in a reporting hierarchy.

Time: the temporal dimension of the data value tuple. For routine data this would represent a time period such as the month of January 2015, the ISO8601 week number 3 of 2015, or the year 2015.

Value: the recorded value, which is keyed in the data value tuple.

X.4.2 Use Cases

X.4.2.1 Use Case #1: Routine reporting of HIV indicator data from EMR

This use case describes reporting of aggregate data from patient level information systems such as EMRs to an aggregate data system such as a national Health Management Information System (HMIS).

X.4.2.1.1 Routine reporting from EMR: Use Case Description

To deal with the challenge of continuity of care, most HIV treatment centers at health facilities have acquired an EMR system to manage patients. In most cases, patient data is captured on paper encounters or registers during visits and later entered into the EMRs. Typically, HIV indicator data is aggregated every month at the health facilities providing HIV care and treatment services and submitted into the national aggregate information system. The reports demanded of the facility are complex, so there are considerable benefits in terms of reducing reporting burden as well as increasing accuracy to extracting reports from the EMR.

Using the ADX-HIV Profile will provide HIV indicator structural metadata that can be readily used to generate ADX-conformant messages from EMRs at health facilities. The ADX-conformant message is sent by the facility EMR (acting as a Content Creator) to the aggregate data system (acting as a Content Consumer) at the national level as illustrated by Figure X.4.2.1.1-1. Such a message exchange improves the timeliness and efficiency of the HMIS data reporting workflow.

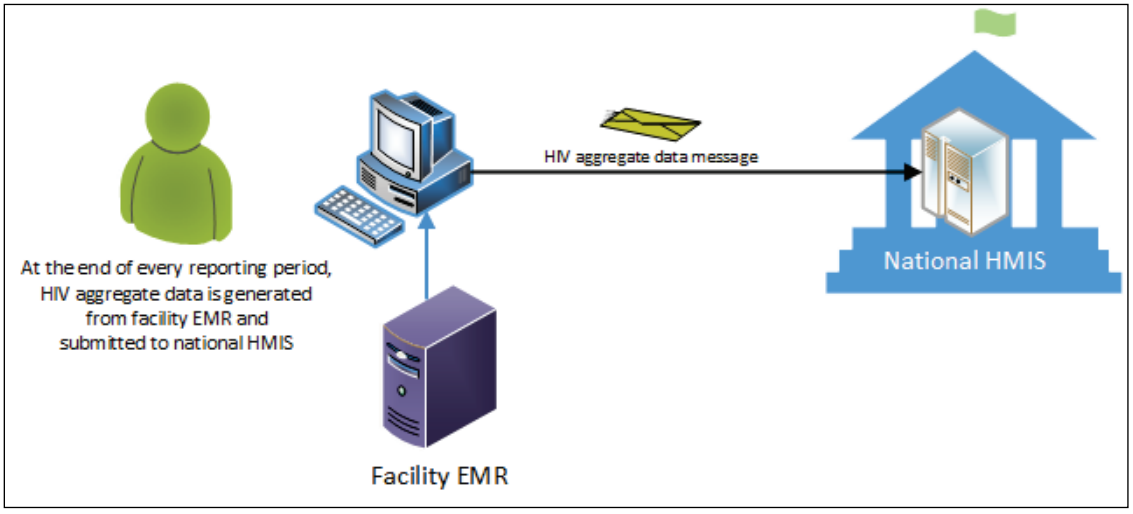

Figure X.4.2.1.1-1: Routine reporting of HIV aggregate data from Facility to National system

This use case could also be used for reporting indicator data from a national patient level data repository to a national HMIS.

X.4.2.2 Use Case #2: Reporting data from HMIS to Other Aggregate Data Repositories

This use case describes how the ADX-HIV Profile enables the reporting of aggregate data from an aggregate data system to another aggregate data systems, e.g., global reporting of HIV indicators from a national HMIS and to a global aggregate data repository.

X.4.2.2.1 Reporting national data from HMIS: Use Case Description

To facilitate routine reporting of HIV indicator data from countries, country offices may generate aggregate data from national HMIS for submission to regional or global organizations. In this case, the national HMIS is the Content Creator that generates HIV core indicator data to be consumed by global aggregate data repositories or observatories, such as UNAIDS Global AIDS Response Progress Reporting (GARPR) online tool and PEPFAR information system, Data for Accountability, Transparency and Impact (DATIM), for monitoring health goals. This could also include reporting from a sub-national M&E system to the national HMIS.

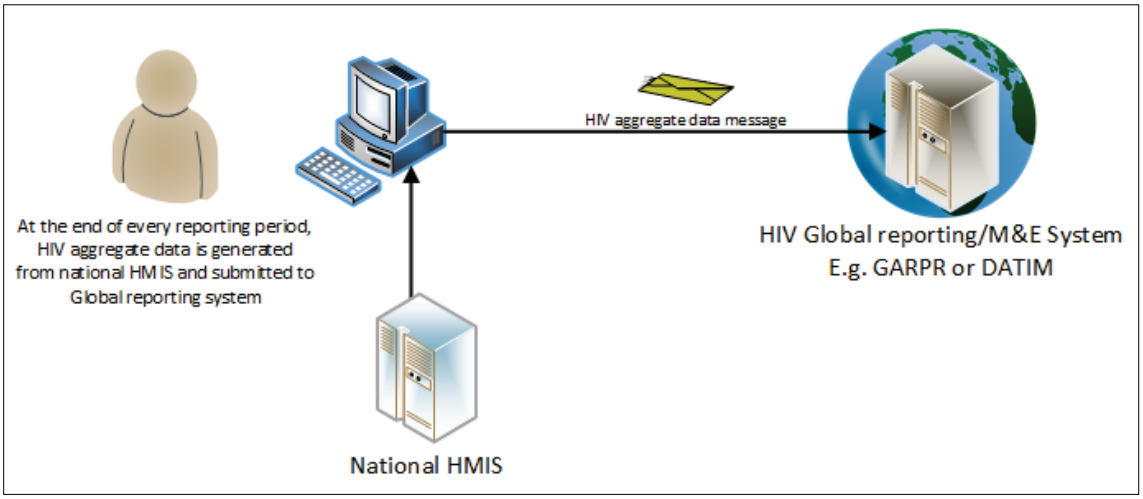

Figure X.4.2.2.1-1: Global reporting to M&E Systems (e.g., DATIM)

The reporting of aggregate data from one HMIS to another HMIS can follow one of two patterns. In the simplest case, the two HMIS systems are operating based on the same ADX Content Module. In a more complicated case, the schema used by the Content Creator may differ from the schema of the Content Consumer. In this more complicated case, some form of façade program may transform the inbound XML message; "mapping" it from the source content schema to the destination content schema (e.g., via an XSLT). As a corollary use case, two different extended versions of the core ADX-HIV content schema (the source, and the destination schema, respectively) may be leveraged to develop and operationalize such transformation maps.

PEPFAR MER 2.0		WHO/UNAIDS		The Global Fund		Kenya		Rwanda	
Age Group	ISO 8601 Age group code	Age Group	ISO 8601 Age group code	Age Group	ISO 8601 Age group code	Age Group	ISO 8601 Age group code	Age Group	ISO 8601 Age group code
<1 Yr	P0Y--P1Y	<1 Yr	P0Y--P1Y	0-14 Yrs	P0Y--P15Y	<1 Yr	P0Y--P1Y	<1 Yr	P0Y--P1Y
1-9 Yrs	P1Y--P10Y	1-4 Yrs	P1Y--P5Y			1-9 Yrs	P1Y--P10Y	1-4 Yrs	P1Y--P5Y
		5-9 Yrs	P5Y--P10Y					5-9 Yrs	P5Y--P10Y
10-14 Yrs	P10Y--P15Y	10-14 Yrs	P10Y--P15Y			10-14 Yrs	P10Y--P15Y	10-14 Yrs	P10Y--P15Y
15-19 Yrs	P15Y--P20Y	15-19 Yrs	P15Y--P20Y	15-19 Yrs	P15Y--P20Y	15-19 Yrs	P15Y--P20Y	15-19 Yrs	P15Y--P20Y
20-24 Yrs	P20Y--P25Y	20+ Yrs	P20Y--P9999Y	20-24 Yrs	P20Y--P25Y	20-24 Yrs	P20Y--P25Y	20-24 Yrs	P20Y--P25Y
25-29 Yrs	P25Y--P30Y					25+ Yrs	P25Y--P9999Y	25-49 Yrs	P25Y--P50Y
30-34 Yrs	P30Y--P35Y								
35-39 Yrs	P35Y--P40Y								
40-49 Yrs	P40Y--P50Y								
50+ Yrs	P50Y--P9999Y							50+ Yrs	P50Y--P9999Y

PEPFAR MER 2.0		WHO/UNAIDS		The Global Fund		Kenya	
Age Group	ISO 8601 Age group code	Age Group	ISO 8601 Age group code	Age Group	ISO 8601 Age group code	Age Group	ISO 8601 Age group code
<1 Year	P0Y--P1Y	<1	P0Y--P1Y	0-14 Years	P0Y--P15Y	<2 Years	P0Y--P2Y
1-9 Years	P1Y--P10Y	1-4 Years	P1Y--P5Y			2-9 Years	P2Y--P10Y
		5-9 Years	P5Y--P10Y				
10-14 Years	P10Y--P15Y	10-14 Years	P10Y--P15Y			10-14 Years	P10Y--P15Y
15-19 Years	P15Y--P20Y	15-19 Years	P15Y--P20Y	15-19 Years	P15Y--P20Y	15-19 Years	P15Y--P20Y
20-24 Years	P20Y--P25Y	20+ Years	P20Y--P9999Y	20-24 Years	P20Y--P25Y	20-24 Years	P20Y--P25Y
25-29 Years	P25Y--P30Y					25+ Years	P25Y--P9999Y
30-34 Years	P30Y--P35Y						
35-39 Years	P35Y--P40Y						
40-49 Years	P40Y--P50Y						
50+ Years	P50Y--P9999Y						

Figure X.4.2.2.1-2: Example Age Disaggregations

Figure X.4.2.2.1-2 illustrates, for example, how age disaggregations might differ between HIV systems. Mapping from one to another of these disaggregations will require a transform map that "lumps" or "splits" the values in the XML message accordingly.

X.5 ADX-HIV Security Considerations

The ADX Profile does not support the exchange of person-centric health information. Therefore, this profile does not specify security mechanisms, such as the ITI Audit Trail and Node Authentication (ATNA) Profile, that would be required were that the case. Implementers should nevertheless be sensitive to the possibility of approximate personal identification arising from aggregate data derived from small population sets. Transport of such data should be safeguarded according to jurisdictional guidelines.

X.6 ADX-HIV Cross Profile Considerations

There are no Cross Profile considerations.

Appendices

None

Volume 2 – Transactions

There are no new transactions identified by this profile.

Appendices

Volume 2 Namespace Additions

There are no new Volume 2 Namespace additions

Volume 3 – Content Modules

5 Namespaces and Vocabularies

The following are namespaces referred to in ADX_HIV Profile together with the prefix which is used to refer to that namespace within this document.

435

Namespace	Prefix	Description
http://www.sdmx.org/resources/sdmxml/schemas/v2_1/message	Mes	SDMX 2.1 message
http://www.sdmx.org/resources/sdmxml/schemas/v2_1/structure	Str	SDMX 2.1 structure definitions
http://www.sdmx.org/resources/sdmxml/schemas/v2_1/common	Com	SDMX 2.1 common elements
http://www.w3.org/2001/XMLSchema	Xs	W3C Schema
urn:ihe:qrph:adx:2015		ADX data payload

6 Content Modules

CDA®[1] Content Modules - Not applicable

7 Content Modules

DICOM®[2] Content Modules -Not applicable

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[1] CDA is the registered trademark of Health Level Seven International.

[2] DICOM is the registered trademark of the National Electrical Manufacturers Association for its standards publications relating to digital communications of medical information.

8 ADX Content Modules

This section defines Content Modules for the Aggregate Data Exchange (ADX) Profile.

8.5 ADX-HIV Content Modules

ADX-HIV content Profile describe the content of the core HIV indicators for monitoring 90-90-90 goal used by global organizations and ministries. ADX_HIV DSD and the associated normative schemas for validating the data message are also defined.

8.5.1 ADX-HIV Referenced Indicator guidelines

Table 8.5.1-1: ADX-HIV Referenced Indicator guidelines

Organization	Title	Source
WHO/UNAIDS	Consolidated strategic Information Guidelines for HIV in Health Sector	http://apps.who.int/iris/bitstream/10665/164716/1/9789241508759_eng.pdf
The U.S. PEPFAR	Monitoring, Evaluation, and Reporting (MER 2.0) Indicator Reference Guide	https://www.pepfar.gov/documents/organization/274919.pdf
Global Fund	Global Fund Indicator Guidance Sheets: HIV	https://www.theglobalfund.org/media/5189/me_indicatorguidancesheets-annexa-hiv_sheet_en.xlsx?u=636486806780000000
Ministry of Health - Kenya	NASCOP Comprehensive HIV/AIDS Facility Reporting Form	https://dl.dropboxusercontent.com/content_link/KtofK9Fvo5xRhOEAhsvJb4lCgn1HkLwH3cTEQ0b3SyXXqQrO6Z2Axy5HLKLLt7Ay/file
Ministry of Health - Rwanda	ART Service monthly Reports	www.moh.gov.rw/fileadmin/templates/HMIS_Docs/Hiv_Forms/English/ART.docx

8.5.2 ADX-HIV Referenced Standards

This profile specifies default code sets for the AGE GROUP, SEX and CLINICAL INDICATOR concepts needed to develop data element disaggregations. The profile leverages ISO, HL7®[3] and SNOMED-CT standards for these concepts, respectively, and does not necessarily employ all of the available values within a given value set; value set subsets are so indicated in the profile. All standards referenced in this document are listed below with their common abbreviation, full title, and link to the standard. Implementing jurisdictions may adopt alternate standards. Jurisdictional alternates are documented in Volume 4 of this profile.

Table 8.5.2-1: ADX-HIV Referenced Standards

Abbreviation	Title	URL
HL7 Value sets	Administrative Sex	http://hl7.org/fhir/v2/0001/index.html

[3] HL7 is the registered trademark of Health Level Seven International.

Abbreviation	Title	URL
ISO 8601	Data elements and interchange formats -- Information interchange -- Representation of dates and times	https://www.iso.org/standard/40874.html https://en.wikipedia.org/wiki/ISO_8601
ADX Profile	Aggregate Data Exchange (ADX) Profile	http://wiki.ihe.net/index.php/Aggregate_Data_Exchange
SNOMED-CT	HIV test result / HIV status Newly tested for HIV (append *)	http://purl.bioontology.org/ontology/SNOMEDCT/165815009 http://purl.bioontology.org/ontology/SNOMEDCT/165816005
SNOMED-CT	On ART Newly on ART (append *)	http://purl.bioontology.org/ontology/SNOMEDCT/432101000124108
SNOMED-CT	Pregnant (status)	https://phinvads.cdc.gov/vads/ViewCodeSystemConcept.action?oid=2.16.840.1.113883.6.96&code=146789000
SNOMED-CT	Breastfeeding (status)	http://purl.bioontology.org/ontology/SNOMEDCT/169750002

8.5.3 ADX-HIV Content

The tables in this section describe the HIV core indicator data elements (numerators and denominators) and their associated disaggregations. Together, these data elements constitute the ADX-HIV content schema. As illustrated by the example ADX-HIV messages included in Appendix XX, the convention is not to transmit the indicators but rather the Content Creator SHOULD convey to the Content Consumer the data elements (numerator and denominator) from which the referenced indicators may be calculated.

The core ADX-HIV data elements, and their respective indicators, are listed in Table 8.5.3-1.

Table 8.5.3-1: Core ADX-HIV Data Elements and Indicators

Section	*Numerator*	*Denominator*	*Indicator*
8.5.3.1	QRPH_ADX_HTS2_N	NA	Number of individuals who received HIV Testing Services (HTS) and received their test results
8.5.3.2	QRPH_ADX_MTCT1_N	QRPH_ADX_MTCT1_D	Proportion of pregnant women with known HIV status at antenatal care
8.5.3.3	QRPH_ADX_ART1_N	NA	Number of adults and children newly enrolled on antiretroviral therapy (ART)
8.5.3.4	QRPH_ADX_ART3_N	QRPH_ADX_ART3_D	Proportion of people living with HIV who are receiving antiretroviral therapy (ART)
8.5.3.5	QRPH_ADX_MTCT2_N	QRPH_ADX_MTCT2_D	Proportion of HIV-positive pregnant women who received antiretroviral treatment to reduce risk of mother-to-child-transmission (MTCT) during pregnancy.
8.5.3.6	QRPH_ADX_ART5_N	QRPH_ADX_ART5_D	Proportion of adults and children known to be alive and on treatment 12 months after initiation of antiretroviral therapy

Section	Numerator	Denominator	Indicator
8.5.3.7	QRPH_ADX_VLS3_N	QRPH_ADX_VLS3_D	Proportion of people living with HIV and on ART who are virologically suppressed

The dissagregations and their respective codes for core ADX-HIV data elements, are listed in Table 8.5.3-2.

Table 8.5.3-2: Disaggregations for core ADX-HIV Data Elements

Disaggregation	Disaggregation Name	Disaggregation code	Data elements
Age group	<1 year	P0Y--P1Y	QRPH_ADX_HTS2_N QRPH_ADX_ART1_N QRPH_ADX_ART3_N QRPH_ADX_ART5_N QRPH_ADX_VLS3_N QRPH_ADX_VLS3_D
	1-4 Years	P1Y—P5Y	
	5-9 Years	P5Y--P10Y	
	10-14 Years	P10Y--P15Y	
	15-19 Years	P15Y—P20Y	
	20-24 Years	P20Y—P25Y	
	25-29 Years	P25Y—P30Y	
	30-34 Years	P30Y—P35Y	
	35-39 Years	P35Y—P40Y	
	40-49 Years	P40Y--P50Y	
	50+ Years	P50Y—P9999Y	
Sex	Male	M	QRPH_ADX_HTS2_N QRPH_ADX_ART1_N QRPH_ADX_ART3_N QRPH_ADX_ART5_N QRPH_ADX_VLS3_N QRPH_ADX_VLS3_D
	Female	F	
HIV test result	Positive	165816005	QRPH_ADX_HTS2_N
	Negative	165815009	
HIV status/HIV test results	Known HIV positive	165816005	QRPH_ADX_MTCT1_N QRPH_ADX_MTCT2_D Note 1
	Newly identified Positive	165816005*	
	Newly identified Negative	165815009*	
ART status	New on ART	432101000124108*	QRPH_ADX_MTCT2_N
	Already on ART	432101000124108	
ANC Status	Pregnant	146789000	QRPH_ADX_ART5_N QRPH_ADX_VLS3_N QRPH_ADX_VLS3_D
	Breastfeeding	169750002	

Note 1: QRPH_ADX_MTCT2_D is a sum of Known HIV positive and newly identified Positive 8.5.3.1 Number of individuals who received HIV Testing Services (HTS) and received their test results

8.5.3.1 Number of individuals who received HIV Testing Services (HTS) and received their test results

This indicator reports the number of people who have been tested for HIV during the reporting period and who know their status. It is expressed as a number; there is a numerator but no denominator. The QRPH_ADX_HTS2_N data element SHALL report HTS results within the ADX message's specified reporting period and SHALL be disaggregated by age group, by sex, and by HIV test result (positive vs negative, with the default value set indicated by SNOMED-CT codes 165816005 and 165815009, respectively).

Table 8.5.3.1-1: Number of individuals who received HIV Testing Services (HTS) and received their test results

Indicator		Number of individuals who received HIV Testing Services (HTS) and received their test results			
Indicator Code with Mapping					
WHO/UNAIDS	**PEPFAR**	**Global Fund**	**Kenya**	**Rwanda**	
HTS.2	HTS_TST	HTS-1	HIV01	-	
Numerator		Number of individuals who received HIV Testing Services (HTS) and received their test results			
QRPH	**WHO/UNAIDS**	**PEPFAR**	**Global Fund**	**Kenya**	**Rwanda**
QRPH_ADX_HTS2_N	HTS.2	HTS_TST	HTS-1	HIV01	-
Denominator		N/A			
Disaggregation					
Disaggregation Name	**Age Group Code**	**Sex Code (HL7 codes)**		**HIV test Result (SNOMED-CT Code)**	
<1, Female, Positive	P0Y--P1Y	F		165816005	
<1, Male, Positive	P0Y--P1Y	M		165816005	
1-4, Female, Positive	P1Y—P5Y	F		165816005	
1-4, Male, Positive	P1Y—P5Y	M		165816005	
5-9, Female, Positive	P5Y--P10Y	F		165816005	
5-9, Male, Positive	P5Y--P10Y	M		165816005	
10-14, Female, Positive	P10Y--P15Y	F		165816005	
10-14, Male, Positive	P10Y--P15Y	M		165816005	
15-19, Female, Positive	P15Y--P20Y	F		165816005	
15-19, Male, Positive	P15Y--P20Y	M		165816005	
20-24, Female, Positive	P20Y--P25Y	F		165816005	

20-24, Male, Positive	P20Y--P25Y	M	165816005
25-29, Female, Positive	P25Y--P30Y	F	165816005
25-29, Male, Positive	P25Y--P30Y	M	165816005
30-34, Female, Positive	P30Y--P35Y	F	165816005
30-34, Male, Positive	P30Y--P35Y	M	165816005
35-39, Female, Positive	P35Y--P40Y	F	165816005
35-39, Male, Positive	P35Y--P40Y	M	165816005
40-49, Female, Positive	P40Y--P50Y	F	165816005
40-49, Male, Positive	P40Y--P50Y	M	165816005
50+, Female, Positive	P50Y--P9999Y	F	165816005
50+, Male, Positive	P50Y--P9999Y	M	165816005
<1, Female, Negative	P0Y--P1Y	F	165815009
<1, Male, Negative	P0Y--P1Y	M	165815009
1-4, Female, Negative	P1Y—P5Y	F	165815009
1-4, Male, Negative	P1Y—P5Y	M	165815009
5-9, Female, Negative	P5Y--P10Y	F	165815009
5-9, Male, Negative	P5Y--P10Y	M	165815009
10-14, Female, Negative	P10Y--P15Y	F	165815009
10-14, Male, Negative	P10Y--P15Y	M	165815009
15-19, Female, Negative	P15Y--P20Y	F	165815009
15-19, Male, Negative	P15Y--P20Y	M	165815009
20-24, Female, Negative	P20Y--P25Y	F	165815009
20-24, Male, Negative	P20Y--P25Y	M	165815009
25-29, Female, Negative	P25Y--P30Y	F	165815009
25-29, Male, Negative	P25Y--P30Y	M	165815009

30-34, Female, Negative	P30Y--P35Y	F	165815009
30-34, Male, Negative	P30Y--P35Y	M	165815009
35-39, Female, Negative	P35Y--P40Y	F	165815009
35-39, Male, Negative	P35Y--P40Y	M	165815009
40-49, Female, Negative	P40Y--P50Y	F	165815009
40-49, Male, Negative	P40Y--P50Y	M	165815009
50+, Female, Negative	P50Y--P9999Y	F	165815009
50+, Male, Negative	P50Y--P9999Y	M	165815009

8.5.3.2 Proportion of pregnant women with known HIV status at antenatal care

This indicator reports the proportion of pregnant women with known HIV status at the time of their antenatal care (ANC). It is expressed as a percentage. The numerator is the number of women who know their HIV status at ANC entry or who are newly tested for HIV during the current pregnancy. The denominator is the total number of women who attended ANC during the reporting period. The data elements are QRPH_ADX_MTCT_N (numerator) and QRPH_ADX_MTCT_D (denominator); they are disaggregated by HIV status at entry to the ANC for the current pregnancy. Known Positive at entry is the number of pregnant women attending ANC for a new pregnancy who were tested and confirmed HIV-positive at any point prior to the current pregnancy. Newly tested positive is the number of women attending first ANC visit who were tested for HIV and received a positive result. Women who tested negative prior to this pregnancy and test positive at first ANC visit for new pregnancy are counted as newly tested positive. New Negatives is the number of women who test negative for HIV during the present pregnancy and have not had prior HIV test. Retesting of HIV-negative women at subsequent ANC visits, L&D, postnatal clinic or family planning clinic are counted as newly tested negative.

Table 8.5.3.2-1: Proportion of pregnant women with known HIV status at antenatal care

Indicator		Percentage of pregnant women with known HIV status at antenatal care			
Indicator Code with Mapping					
WHO/UNAIDS	**PEPFAR**	**Global Fund**	**Kenya**	**Rwanda**	
MTCT.1	PMTCT_STAT	PMTCT-1	HIV02	-	
Numerator		Number of pregnant women with known HIV status at first antenatal care visit (ANC1)			
QRPH	**WHO/UNAIDS**	**PEPFAR**	**Global Fund**	**Kenya**	**Rwanda**
QRPH_ADX_MTCT1_N	-	-	-	HV02-05	-

Denominator		Number of pregnant women who attended ANC or had a facility-based delivery in the reporting period			
QRPH	**WHO/UNAIDS**	**PEPFAR**	**Global Fund**	**Kenya**	**Rwanda**
QRPH_ADX_MTCT1_D	-	-	-	-	-
Disaggregation					
Disaggregation Name		**HIV test results codes (SNOMED-CT Code)**			
Known Positive		165816005			
Newly Tested Positive		165816005*			
Newly Tested Negative		165815009*			

8.5.3.3 Number of adults and children newly enrolled on antiretroviral therapy (ART)

505 This indicator reports the number of HIV positive persons who were newly started on ART during the reporting period. It is expressed as a number; there is a numerator but no denominator. The data element is QRPH_ADX_ART1_N and it is disaggregated by age group, and by sex.

Table 8.5.3.3-1: Number of adults and children newly enrolled on antiretroviral therapy (ART)

Indicator		Number of adults and children newly enrolled on antiretroviral therapy (ART)			
Indicator Code with Mapping					
WHO/UNAIDS	**PEPFAR**	**Global Fund**	**Kenya**	**Rwanda**	
ART.1	TX_NEW	-	HIV03.4	-	
Numerator		Number of adults and children newly enrolled on antiretroviral therapy (ART) in the reporting period			
QRPH	**WHO/UNAIDS**	**PEPFAR**	**Global Fund**	**Kenya**	**Rwanda**
QRPH_ADX_ART1_N	ART.1	TX_NEW	-	HIV03.4	-
Denominator		NONE			
Disaggregation					
Disaggregation Name	**Age Group Code**	**Sex Code**		**Notes**	
<1, Female	P0Y--P1Y	F			
<1, Male	P0Y--P1Y	M			
1-4, Female	P1Y—P5Y	F			
1-4, Male	P1Y—P5Y	M			
5-9, Female	P5Y--P10Y	F			
5-9, Male	P5Y--P10Y	M			
10-14, Female	P10Y--P15Y	F			
10-14, Male	P10Y--P15Y	M			

15-19, Female	P15Y--P20Y	F	
15-19, Male	P15Y--P20Y	M	
20-24, Female	P20Y--P25Y	F	
20-24, Male	P20Y--P25Y	M	
25-29, Female	P25Y--P30Y	F	
25-29, Male	P25Y--P30Y	M	
30-34, Female	P30Y--P35Y	F	
30-34, Male	P30Y--P35Y	M	
35-39, Female	P35Y--P40Y	F	
35-39, Male	P35Y--P40Y	M	
40-49, Female	P40Y--P50Y	F	
40-49, Male	P40Y--P50Y	M	
50+, Female	P50Y--P9999Y	F	
50+, Male	P50Y--P9999Y	M	

8.5.3.4 Proportion of people living with HIV who are receiving antiretroviral therapy (ART)

This indicator reports the proportion of people living with HIV who are receiving ART. It is expressed as a percentage. The numerator is the number of people living with HIV currently receiving ART during the reporting period. The denominator is the estimated total number of people living with HIV. Generally, this denominator is not generated from individual health facilities but it is estimated using modelling estimates such as Spectrum AIM. The data element is QRPH_ADX_ART3_N (numerator) and it is disaggregated by age group, and by sex.

Table 8.5.3.4-1: Proportion of people living with HIV who are receiving antiretroviral therapy (ART)

Indicator		Percentage of people living with HIV who are receiving antiretroviral therapy (ART)			
Indicator Code with Mapping					
WHO/UNAIDS	**PEPFAR**	**Global Fund**	**Kenya**	**Rwanda**	
ART.3	TX_CURR	TCS-1	HIV03.6	-	
Numerator		Number of adults and children currently receiving antiretroviral therapy (ART)			
QRPH	**WHO/UNAIDS**	**PEPFAR**	**Global Fund**	**Kenya**	**Rwanda**
QRPH_ADX_ART3_N	ART.3	TX_CURR	TCS-1	HIV03.6	-
Denominator		Estimated number of people living with HIV. Note: This denominator is generated at an above health facility level			
Disaggregation					
Disaggregation Name	**Age Group Code**	**Sex Code**			

<1, Female	P0Y--P1Y	F	
<1, Male	P0Y--P1Y	M	
1-4, Female	P1Y—P5Y	F	
1-4, Male	P1Y—P5Y	M	
5-9, Female	P5Y--P10Y	F	
5-9, Male	P5Y--P10Y	M	
10-14, Female	P10Y--P15Y	F	
10-14, Male	P10Y--P15Y	M	
15-19, Female	P15Y--P20Y	F	
15-19, Male	P15Y--P20Y	M	
20-24, Female	P20Y--P25Y	F	
20-24, Male	P20Y--P25Y	M	
25-29, Female	P25Y--P30Y	F	
25-29, Male	P25Y--P30Y	M	
30-34, Female	P30Y--P35Y	F	
30-34, Male	P30Y--P35Y	M	
35-39, Female	P35Y--P40Y	F	
35-39, Male	P35Y--P40Y	M	
40-49, Female	P40Y--P50Y	F	
40-49, Male	P40Y--P50Y	M	
50+, Female	P50Y--P9999Y	F	
50+, Male	P50Y--P9999Y	M	

8.5.3.5 Proportion of HIV-positive pregnant women who received antiretroviral treatment to reduce risk of mother-to-child-transmission (MTCT) during pregnancy.

This indicator reports the proportion of pregnant women who received ART during pregnancy. It is expressed as a percentage. The numerator is the number of women who were newly started on ART or already on ART at the beginning of the current pregnancy. The denominator is the total number of women who are known to be HIV positive, which include known HIV positive and newly tested HIV positive, during the reporting period. The data elements are QRPH_ADX_MTCT2_N (numerator) and QRPH_ADX_MTCT2_D (denominator); they are disaggregated by new on ART and already on ART during the current pregnancy.

Table 8.5.3.5-1: Proportion of HIV-positive pregnant women who received antiretroviral treatment to reduce risk of mother-to-child-transmission (MTCT) during pregnancy.

Indicator	Percentage of HIV-positive pregnant women who received antiretroviral treatment to reduce risk of mother-to-child-transmission (MTCT) during pregnancy.
Indicator Code with Mapping	

WHO/UNAIDS	PEPFAR	Global Fund	Kenya	Rwanda
MTCT.2	PMTCT_ART	PMTCT-2.1	HIV02-03	-
Numerator		Number of HIV-positive pregnant women who received ART to reduce the risk of mother-to-child-transmission during pregnancy		

QRPH	WHO/UNAIDS	PEPFAR	Global Fund	Kenya	Rwanda
QRPH_ADX_MTCT2_N				HV02-15	
Denominator		Number of HIV positive pregnant women who delivered within the reporting period and attended ANC or had a facility-based delivery.			

QRPH	WHO/UNAIDS	PEPFAR	Global Fund	Kenya	Rwanda
QRPH_ADX_MTCT2_D				HV02-09	

Disaggregation		
Disaggregation Name		
Already on ART	432101000124108	
New on ART	432101000124108*	

8.5.3.6 Proportion of adults and children known to be alive and on treatment 12 months after initiation of antiretroviral therapy

This indicator reports the proportion of people living with HIV know to be alive and on treatment 12 months after initiating ART. It is expressed as a percentage. The numerator is the total number of people who are still on ART treatment at 12 months after initiating ART. The denominator is the total number of people who initiated ART 12 months prior to the beginning of the reporting period, including those who died and those who stopped ART treatment. The data elements are QRPH_ADX_ART5_N (numerator) and QRPH_ADX_ART5_D (denominator); they are disaggregated by age group, and by sex. There is an additional disaggregation for those who are pregnant and breastfeeding mothers.

Table 8.5.3.6-1: Proportion of adults and children known to be alive and on treatment 12 months after initiation of antiretroviral therapy

Indicator		Percentage of adults and children known to be alive and on treatment 12 months after initiation of antiretroviral therapy		
Indicator Code with Mapping				
WHO/UNAIDS	**PEPFAR**	**Global Fund**	**Kenya**	**Rwanda**
ART.5	TX_RET	HIV 0-1	HIV03-11	-
Numerator		Number of adults and children who are still on treatment at 12 months after initiating ART		

QRPH	WHO/UNAIDS	PEPFAR	Global Fund	Kenya	Rwanda

QRPH_ADX_ART5_N				HV03-096	
Denominator		Total number of adults and children who initiated ART in the 12 months prior to the beginning of the reporting period, including those who have died and those who have stopped ART.			
QRPH	**WHO/UNAIDS**	**PEPFAR**	**Global Fund**	**Kenya**	**Rwanda**
QRPH_ADX_ART5_D			-	HV03-097	

Disaggregation			
Disaggregation Name	**Age Group Code**	**Sex Code**	**Other Code**
<1, Female	P0Y--P1Y	F	
<1, Male	P0Y--P1Y	M	
1-4, Female	P1Y—P5Y	F	
1-4, Male	P1Y—P5Y	M	
5-9, Female	P5Y--P10Y	F	
5-9, Male	P5Y--P10Y	M	
10-14, Female	P10Y--P15Y	F	
10-14, Male	P10Y--P15Y	M	
15-19, Female	P15Y--P20Y	F	
15-19, Male	P15Y--P20Y	M	
20-24, Female	P20Y--P25Y	F	
20-24, Male	P20Y--P25Y	M	
25-29, Female	P25Y--P30Y	F	
25-29, Male	P25Y--P30Y	M	
30-34, Female	P30Y--P35Y	F	
30-34, Male	P30Y--P35Y	M	
35-39, Female	P35Y--P40Y	F	
35-39, Male	P35Y--P40Y	M	
40-49, Female	P40Y--P50Y	F	
40-49, Male	P40Y--P50Y	M	
50+, Female	P50Y--P9999Y	F	
50+, Male	P50Y--P9999Y	M	
Pregnant at start of ART			146789000
Breastfeeding at start of ART			169750002

8.5.3.7 Proportion of people living with HIV and on ART who are virologically suppressed

550 This indicator reports the proportion of patients on ART with a viral load result documented within the past 12 months with a suppressed viral load. It is expressed as a percentage. The numerator is the number of people number of people living with HIV and on ART who have a

suppressed viral load (<1000 copies/mL) documented within the past 12 months. The denominator is the number of people number of people living with HIV and on ART who have a viral load result documented in the past 12 months. The data elements are QRPH_ADX_VLS3_N (numerator) and QRPH_ADX_VLS3_D (denominator); they are disaggregated by age group, and by sex. There is an additional disaggregation for those who are pregnant and breastfeeding mothers.

Table 8.5.3.7-1: Proportion of people living with HIV and on ART who are virologically suppressed

Indicator		Percentage of people living with HIV and on ART who are virologically suppressed			
Indicator Code with Mapping					
WHO/UNAIDS	**PEPFAR**	**Global Fund**	**Kenya**	**Rwanda**	
VLS.3	TX_PVLS	-	HIV03-12	-	
Numerator		Number of people living with HIV and on ART who have a suppressed viral load results (<1000 copies/mL).			
QRPH	**WHO/UNAIDS**	**PEPFAR**	**Global Fund**	**Kenya**	**Rwanda**
QRPH_ADX_VLS3_N			HIV03-098		
Denominator		Number of people on ART who had a VL measurement in the past 12 months.			
QRPH	**WHO/UNAIDS**	**PEPFAR**	**Global Fund**	**Kenya**	**Rwanda**
QRPH_ADX_VLS3_D			HIV03-099		
Disaggregation					
Disaggregation Name	**Age Group Code**	**Sex Code**		**Other code**	
<1, Female	P0Y--P1Y	F			
<1, Male	P0Y--P1Y	M			
1-4, Female	P1Y—P5Y	F			
1-4, Male	P1Y—P5Y	M			
5-9, Female	P5Y--P10Y	F			
5-9, Male	P5Y--P10Y	M			
10-14, Female	P10Y--P15Y	F			
10-14, Male	P10Y--P15Y	M			
15-19, Female	P15Y--P20Y	F			
15-19, Male	P15Y--P20Y	M			
20-24, Female	P20Y--P25Y	F			
20-24, Male	P20Y--P25Y	M			
25-29, Female	P25Y--P30Y	F			
25-29, Male	P25Y--P30Y	M			
30-34, Female	P30Y--P35Y	F			
30-34, Male	P30Y--P35Y	M			
35-39, Female	P35Y--P40Y	F			

35-39, Male	P35Y--P40Y	M	
40-49, Female	P40Y--P50Y	F	
40-49, Male	P40Y--P50Y	M	
50+, Female	P50Y--P9999Y	F	
50+, Male	P50Y--P9999Y	M	
Pregnant			146789000
Breastfeeding			169750002

The ADX-HIV Content Profile Content Data Structure Creator creates ADX-conformant DSD and XSD files for HIV core indicators. The ADX-HIV Content Data Structure Creator will use harmonized metadata (codelists with data elements and associated disaggregation) to represent HIV core indicators published by several implementing jurisdictions globally.

Content Creators and Content Consumers conformant with the ADX-HIV Content Profile SHALL exchange data messages that conforms to the ADX-HIV content schema. A sample ADX-HIV compliant data payload is provided in the informative Appendix 8X1.

Appendices to Section 8

Appendix 8A – (Informative) Sample ADX-HIV data

```
<?xml version="1.0" encoding="UTF-8"?>
<adx xmlns="urn:ihe:qrph:adx:2015"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="urn:ihe:qrph:adx:2015
../schema/adx_sample_generated.xsd"
     exported="2015-02-08T19:30:00Z">

    <group orgUnit="342" period="2018-01-01/P1M" dataSet="HIV"
mechanism="PEPFAR">
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        <dataValue dataElement=" QRPH_ADX_ART1_N" value="20" />
        <dataValue dataElement="QRPH_ADX_ART3N" value="10" ageGroup="P0Y–
P15Y" sex="M" />
        <dataValue dataElement="QRPH_ADX_ART3N" value="10" ageGroup="P0Y–
P15Y" sex="F" />
      <dataValue dataElement="QRPH_ADX_ART3N" value="10" ageGroup="P1Y–
P9999Y" sex="M" />
        <dataValue dataElement="QRPH_ADX_ART3N" value="10" ageGroup="P15Y–
P9999Y" sex="F" />

    </group>
</adx>
```


Appendix 8B – (Informative) Representation of age groups in ADX

The representation of age group ranges code should be unambiguous, human readable and machine-readable. There being no convention for expressing or representing age ranges for aggregate data exchange, ADX express an age group band through two simple durations as defined in the ISO 8601.

ADX describes an age group range as two durations: <duration1> -- <duration2>. Where duration1 specifies the beginning of the age group band (everyone who is this age and above) and <duration2> signify the upper bound of the age group band <duration2>. Therefore, age groups like "1-9 years" means everyone who is at least one year old and less than 10 years old represented as P1Y – P10Y and like "10-14 years" means everyone who is at least 10 years old and less than 15 years old represented as P10Y – P15Y.

Durations define the amount if an intervening time between two time points. These durations are represented in the form P[n]Y[n]M[n]DT[n]H[n]M[n]S or P[n]W. The [n] is replaced by the value for each of the time elements that follow the [n] and the letters have the meaning:

- *P* is the duration designator (for *period*) placed at the start of the duration representation.
- *Y* is the year designator that follows the value for the number of years.
- *M* is the month designator that follows the value for the number of months.
- *W* is the week designator that follows the value for the number of weeks.
- *D* is the day designator that follows the value for the number of days.
- *T* is the time designator that precedes the time components of the representation.
- *H* is the hour designator that follows the value for the number of hours.
- *M* is the minute designator that follows the value for the number of minutes.
- *S* is the second designator that follows the value for the number of seconds.

Examples:

Age group range	*Age group code*
0-6 Months	P0M—P7M
<1 year	P0Y--P1Y
1-4 Years	P1Y--P5Y
5-9 Years	P5Y--P10Y
10-14 Years	P10Y--P15Y
15-19 Years	P15Y--P20Y
20+ Years	P20Y--P9999Y

Time Intervals can be expressed using a “double hyphen”, which makes it easier for human to read, are machine-readable and comply with Section 4.4.2 of the ISO spec.

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Appendix 8C – (Informative) Mapping Sex codes between HL7 value set and ISO/IEC 5218

There are several ways for specifying sex within health. HL7 administrative sex value set is used to define sex codes within the ADX-HIV Content Profile. In the interest of greater and easier interoperability, this informative appendix shows how jurisdictions can map their sex codes to those defined in ADX-HIV Profile using ISO/IEC 5801. ISO/IEC 5801, *Information technology — Codes for the representation of human sexes*, is an international standard that defines a representation of human sexes through a language-neutral single-digit code.

HL7 v2 Administrative Sex value set		ISO/IEC 5218	
Code	**Description**	**Code**	**Description**
U	Unknown	0	not known
M	Male	1	male
F	Female	2	female
N	Not applicable	9	not applicable
O	Other		
A	Ambiguous		

With such mapping, it is possible to bind the sex codes in ADX-HIV with the codes that are used by a jurisdiction.

Appendix 8D – (Informative) Challenges associated with aligning disaggregations

For purposes of illustrating the challenges of aligning disaggregations, Figure X.4.2.4.1-2 is replicated (below).

PEPFAR MER 2.0		WHO/UNAIDS		The Global Fund		Kenya		Rwanda	
Age Group	ISO 8601 Age group code	Age Group	ISO 8601 Age group code	Age Group	ISO 8601 Age group code	Age Group	ISO 8601 Age group code	Age Group	ISO 8601 Age group code
<1 Yr	P0Y--P1Y	<1 Yr	P0Y--P1Y	0-14 Yrs	P0Y--P15Y	<1 Yr	P0Y--P1Y	<1 Yr	P0Y--P1Y
1-9 Yrs	P1Y--P10Y	1-4 Yrs	P1Y--P5Y			1-9 Yrs	P1Y--P10Y	1-4 Yrs	P1Y--P5Y
		5-9 Yrs	P5Y--P10Y					5-9 Yrs	P5Y--P10Y
10-14 Yrs	P10Y--P15Y	10-14 Yrs	P10Y--P15Y			10-14 Yrs	P10Y--P15Y	10-14 Yrs	P10Y--P15Y
15-19 Yrs	P15Y--P20Y	15-19 Yrs	P15Y--P20Y	15-19 Yrs	P15Y--P20Y	15-19 Yrs	P15Y--P20Y	15-19 Yrs	P15Y--P20Y
20-24 Yrs	P20Y--P25Y	20+ Yrs	P20Y--P9999Y	20-24 Yrs	P20Y--P25Y	20-24 Yrs	P20Y--P25Y	20-24 Yrs	P20Y--P25Y
25-29 Yrs	P25Y--P30Y					25+ Yrs	P25Y--P9999Y	25-49 Yrs	P25Y--P50Y
30-34 Yrs	P30Y--P35Y								
35-39 Yrs	P35Y--P40Y								
40-49 Yrs	P40Y--P50Y								
50+ Yrs	P50Y--P9999Y							50+ Yrs	P50Y--P9999Y

PEPFAR MER 2.0		WHO/UNAIDS		The Global Fund		Kenya	
Age Group	ISO 8601 Age group code	Age Group	ISO 8601 Age group code	Age Group	ISO 8601 Age group code	Age Group	ISO 8601 Age group code
<1 Year	P0Y--P1Y	<1	P0Y--P1Y	0-14 Years	P0Y--P15Y	<2 Years	P0Y--P2Y
1-9 Years	P1Y--P10Y	1-4 Years	P1Y--P5Y			2-9 Years	P2Y--P10Y
		5-9 Years	P5Y--P10Y				
10-14 Years	P10Y--P15Y	10-14 Years	P10Y--P15Y			10-14 Years	P10Y--P15Y
15-19 Years	P15Y--P20Y	15-19 Years	P15Y--P20Y	15-19 Years	P15Y--P20Y	15-19 Years	P15Y--P20Y
20-24 Years	P20Y--P25Y	20+ Years	P20Y--P9999Y	20-24 Years	P20Y--P25Y	20-24 Years	P20Y--P25Y
25-29 Years	P25Y--P30Y					25+ Years	P25Y--P9999Y
30-34 Years	P30Y--P35Y						
35-39 Years	P35Y--P40Y						
40-49 Years	P40Y--P50Y						
50+ Years	P50Y--P9999Y						

Figure 8D-1: Example Age Disaggregations

As may be noted from the figure, , WHO/UNAIDS, and Rwanda age disaggregations differ from those of PEPFAR and Kenya's. . Content that has been gathered by PEPFAR and Kenya's MOH in its first 3 disaggregations (P0Y—P1Y, P1Y—P10Y, P10Y—P15Y) may be "lumped" to report to the Global Fund (P0Y-P15Y). Content reported to PEPFAR and Kenya's MOH in its first disaggregation (P0Y-P1Y) would, however, need to be "split" to report to WHO/UNAIDS. This latter issue represents a challenge for how such content is to be shared from one HMIS to another. Although it is possible to leverage ratios (based on the demographic pyramid, for example) to prorate values – this is not well-regarded as a solution.

Generally, the present profile has favored disaggregations at the highest level of precision (from among the source specifications) with the tacit expectation that these may be successfully "lumped" to accommodate less-precise disaggregations. It is accepted, however, that the challenge of disaggregation mismatches is not altogether solved.

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Volume 3 Namespace Additions

Add the following terms to the IHE Namespace:

None

Volume 4 – National Extensions

Add appropriate Country section

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4 National Extensions

4.1 Aggregate Data Exchange -HIV - PEPFAR Extension

This information contains the US President's Emergency Plan For AIDS Relief (PEPFAR) extensions for the Aggregate Data Exchange – HIV Profile. The PEPFAR Extension content definitions further constrain the definitions available in Volume 3.

4.1.1 Comment Submission

This national extension document was authored under the sponsorship and supervision of Xenophon Santas, who welcome comments on this document and the IHE USA initiative. Comments should be directed to:

IHE USA,

Email: jkariuki@cdc.gov and xms1@cdc.gov

4.1.2 ADX-HIV

All requirements of the ADX-HIV Profile in the PEPFAR Realm for the core HIV indicator data elements are as specified in Section 8.5.3 with the exception of additional constraints in the disaggregations. Finer disaggregations for age group has been used in the PEPFAR extension to ensure mapping to the ADX-HIV content for the core HIV data elements described in Section 8.5.3. Additional constraints include indicator data elements and their associated disaggregations reported from health facilities, which are specific to PEPFAR reporting.

ADX-HIV Content Modules

8.5.3.1 Number of individuals who received HIV Testing Services (HTS) and received their test results

This indicator reports the number of persons who have been tested for HIV and who know their status. It is expressed as a number; there is a numerator but no denominator. The data element is QRPH_ADX_HTS2_N; it has 11 disaggregate groups that are disaggregated by age group, by sex, and by HIV test result, (positive vs negative indicated by SNOMED-CT codes 165816005 and 165815009, respectively). Pediatric and malnutrition disaggregate groups are not disaggregated by sex.

Table 8.5.3.1-1: Number of individuals who received HIV Testing Services (HTS) and received their test results

Indicator		Number of individuals who received HIV Testing Services (HTS) and received their test results		
Indicator Code with Mapping				
WHO/UNAIDS	**PEPFAR**	**Global Fund**	**Kenya**	**Rwanda**
HTS.2	HTS_TST	HTS-1	HIV01	-

Numerator		Number of individuals who received HIV Testing Services (HTS) and received their test results			
QRPH	**WHO/UNAIDS**	**PEPFAR**	**Global Fund**	**Kenya**	**Rwanda**
QRPH_ADX_HTS2_N	HTS.2	HTS_TST_N	HTS-1	HIV01	-
Denominator		NONE			
Disaggregate group(s)		Index, STI, Inpatient, Emergency, VCT, TB, Other PITC			
Disaggregation					
Disaggregation Name	**Age Group Code**	**Sex Code (HL7 codes)**		**HIV test Result (SNOMED-CT Code)**	
<1, Female, Positive	P0Y--P1Y	F		165816005	
<1, Male, Positive	P0Y--P1Y	M		165816005	
1-4, Female, Positive	P1Y—P5Y	F		165816005	
1-4, Male, Positive	P1Y—P5Y	M		165816005	
5-9, Female, Positive	P5Y--P10Y	F		165816005	
5-9, Male, Positive	P5Y--P10Y	M		165816005	
10-14, Female, Positive	P10Y--P15Y	F		165816005	
10-14, Male, Positive	P10Y--P15Y	M		165816005	
15-19, Female, Positive	P15Y--P20Y	F		165816005	
15-19, Male, Positive	P15Y--P20Y	M		165816005	
20-24, Female, Positive	P20Y--P25Y	F		165816005	
20-24, Male, Positive	P20Y--P25Y	M		165816005	
25-29, Female, Positive	P25Y--P30Y	F		165816005	
25-29, Male, Positive	P25Y--P30Y	M		165816005	
30-34, Female, Positive	P30Y--P35Y	F		165816005	
30-34, Male, Positive	P30Y--P35Y	M		165816005	
35-39, Female, Positive	P35Y--P40Y	F		165816005	
35-39, Male, Positive	P35Y--P40Y	M		165816005	
40-49, Female, Positive	P40Y--P50Y	F		165816005	
40-49, Male, Positive	P40Y--P50Y	M		165816005	
50+, Female, Positive	P50Y--P9999Y	F		165816005	
50+, Male, Positive	P50Y--P9999Y	M		165816005	
<1, Female, Negative	P0Y--P1Y	F		165815009	
<1, Male, Negative	P0Y--P1Y	M		165815009	
1-4, Female, Negative	P1Y—P5Y	F		165815009	
1-4, Male, Negative	P1Y—P5Y	M		165815009	
5-9, Female, Negative	P5Y--P10Y	F		165815009	
5-9, Male, Negative	P5Y--P10Y	M		165815009	
10-14, Female, Negative	P10Y--P15Y	F		165815009	

10-14, Male, Negative	P10Y--P15Y	M	165815009
15-19, Female, Negative	P15Y--P20Y	F	165815009
15-19, Male, Negative	P15Y--P20Y	M	165815009
20-24, Female, Negative	P20Y--P25Y	F	165815009
20-24, Male, Negative	P20Y--P25Y	M	165815009
25-29, Female, Negative	P25Y--P30Y	F	165815009
25-29, Male, Negative	P25Y--P30Y	M	165815009
30-34, Female, Negative	P30Y--P35Y	F	165815009
30-34, Male, Negative	P30Y--P35Y	M	165815009
35-39, Female, Negative	P35Y--P40Y	F	165815009
35-39, Male, Negative	P35Y--P40Y	M	165815009
40-49, Female, Negative	P40Y--P50Y	F	165815009
40-49, Male, Negative	P40Y--P50Y	M	165815009
50+, Female, Negative	P50Y--P9999Y	F	165815009
50+, Male, Negative	P50Y--P9999Y	M	165815009
Disaggregate group(s)		VMMC	
<1, Male, Positive	P0Y--P1Y	M	165816005
1-4, Male, Positive	P1Y—P5Y	M	165816005
5-9, Male, Positive	P5Y--P10Y	M	165816005
10-14, Male, Positive	P10Y--P15Y	M	165816005
15-19, Male, Positive	P15Y--P20Y	M	165816005
20-24, Male, Positive	P20Y--P25Y	M	165816005
25-29, Male, Positive	P25Y--P30Y	M	165816005
30-34, Male, Positive	P30Y--P35Y	M	165816005
35-39, Male, Positive	P35Y--P40Y	M	165816005
40-49, Male, Positive	P40Y--P50Y	M	165816005
50+, Male, Positive	P50Y--P9999Y	M	165816005
<1, Male, Negative	P0Y--P1Y	M	165815009
1-4, Male, Negative	P1Y—P5Y	M	165815009
5-9, Male, Negative	P5Y--P10Y	M	165815009
10-14, Male, Negative	P10Y--P15Y	M	165815009
15-19, Male, Negative	P15Y--P20Y	M	165815009
20-24, Male, Negative	P20Y--P25Y	M	165815009
25-29, Male, Negative	P25Y--P30Y	M	165815009
30-34, Male, Negative	P30Y--P35Y	M	165815009
35-39, Male, Negative	P35Y--P40Y	M	165815009
40-49, Male, Negative	P40Y--P50Y	M	165815009
50+, Male, Negative	P50Y--P9999Y	M	165815009

Disaggregate group(s)		PMTCT	
<1, Female, Positive	P0Y--P1Y	F	165816005
1-4, Female, Positive	P1Y—P5Y	F	165816005
5-9, Female, Positive	P5Y--P10Y	F	165816005
10-14, Female, Positive	P10Y--P15Y	F	165816005
15-19, Female, Positive	P15Y--P20Y	F	165816005
20-24, Female, Positive	P20Y--P25Y	F	165816005
25-29, Female, Positive	P25Y--P30Y	F	165816005
30-34, Female, Positive	P30Y--P35Y	F	165816005
35-39, Female, Positive	P35Y--P40Y	F	165816005
40-49, Female, Positive	P40Y--P50Y	F	165816005
50+, Female, Positive	P50Y--P9999Y	F	165816005
<1, Female, Negative	P0Y--P1Y	F	165815009
1-4, Female, Negative	P1Y—P5Y	F	165815009
5-9, Female, Negative	P5Y--P10Y	F	165815009
10-14, Female, Negative	P10Y--P15Y	F	165815009
15-19, Female, Negative	P15Y--P20Y	F	165815009
20-24, Female, Negative	P20Y--P25Y	F	165815009
25-29, Female, Negative	P25Y--P30Y	F	165815009
30-34, Female, Negative	P30Y--P35Y	F	165815009
35-39, Female, Negative	P35Y--P40Y	F	165815009
40-49, Female, Negative	P40Y--P50Y	F	165815009
50+, Female, Negative	P50Y--P9999Y	F	165815009
Disaggregate group(s)		Pediatric	
<5, Positive	P0Y—P6Y		165815005
<5, Negative	P0Y—P6Y		165815009
Disaggregate group(s)		Malnutrition	
<5, Positive	P0Y—P6Y		165815005
<5, Negative	P0Y—P6Y		165815009

8.5.3.2 Proportion of pregnant women with known HIV status at antenatal care

This indicator reports the proportion of pregnant women with known HIV status at antenatal care (ANC). It is expressed as a percentage. The numerator is the number of women who know their HIV status at ANC entry or who are newly tested for HIV during the current pregnancy. The denominator is the total number of women who attended ANC during the reporting period. The data elements are QRPH_ADX_MTCT_N (numerator) and QRPH_ADX_MTCT_D (denominator). The numerator is disaggregated by age group, and by HIV status at entry to the ANC for the current pregnancy and the denominator is disaggregated by age group. Known

Positive at entry is the number of pregnant women attending ANC for a new pregnancy who were tested and confirmed HIV-positive at any point prior to the current pregnancy. Newly tested positive is the number of women attending first ANC visit who were tested for HIV and received a positive result. Women who tested negative prior to this pregnancy and test positive at first ANC visit for new pregnancy should be counted as newly tested positive. New Negatives is the number of women who test negative for current pregnancy and have not had prior HIV test. Retesting of HIV-negative women for the current pregnancy at subsequent ANC visits, L&D, postnatal clinic or family planning clinic should not be counted as newly tested negative.

Table 8.5.3.2-1: Proportion of pregnant women with known HIV status at antenatal care

Indicator		Percentage of pregnant women with known HIV status at antenatal care			
Indicator Code with Mapping					
WHO/UNAIDS	**PEPFAR**	**Global Fund**	**Kenya**	**Rwanda**	
MTCT.1	PMTCT_STAT	PMTCT-1	HIV02	-	
Numerator		Number of pregnant women with known HIV status at first antenatal care visit (ANC1)			
QRPH	**WHO/UNAIDS**	**PEPFAR**	**Global Fund**	**Kenya**	**Rwanda**
QRPH_ADX_MTCT1_N	-	-	-	HV02-05	-
Denominator		Number of pregnant women who attended ANC or had a facility-based delivery in the reporting period			
QRPH	**WHO/UNAIDS**	**PEPFAR**	**Global Fund**	**Kenya**	**Rwanda**
QRPH_ADX_MTCT1_D	-	-	-	-	-
Disaggregation					
Disaggregation Name		**Age Group Code**		**HIV test results codes (SNOMED-CT Code)**	
<10, Known Positive		P0Y--P10Y		165816005	
10-14, Known Positive		P10Y--P15Y		165816005	
15-19, Known Positive		P15Y—P20Y		165816005	
20-24, Known Positive		P20Y—P25Y		165816005	
25-29, Known Positive		P25Y—P30Y		165816005	
30-34, Known Positive		P30Y—P35Y		165816005	
35-39, Known Positive		P35Y—P40Y		165816005	
40-49, Known Positive		P40Y--P50Y		165816005	
50+, Known Positive		P50Y—P9999Y		165816005	
<10, Newly Tested Positive		P0Y--P10Y		165816005*	
10-14, Newly Tested Positive		P10Y--P15Y		165816005*	
15-19, Newly Tested Positive		P15Y—P20Y		165816005*	
20-24, Newly Tested Positive		P20Y—P25Y		165816005*	
25-29, Newly Tested Positive		P25Y—P30Y		165816005*	
30-34, Newly Tested Positive		P30Y—P35Y		165816005*	
35-39, Newly Tested Positive		P35Y—P40Y		165816005*	

40-49, Newly Tested Positive	P40Y--P50Y	165816005*
50+, Newly Tested Positive	P50Y—P9999Y	165816005*
<10, New Negative	P0Y--P10Y	165815009*
10-14, New Negative	P10Y--P15Y	165815009
15-19, New Negative	P15Y—P20Y	165815009*
20-24, New Negative	P20Y—P25Y	165815009*
25-29, New Negative	P25Y—P30Y	165815009*
30-34, New Negative	P30Y—P35Y	165815009*
35-39, New Negative	P35Y—P40Y	165815009*
40-49, New Negative	P40Y--P50Y	165815009*
50+, New Negative	P50Y—P9999Y	165815009*

8.5.3.3 Number of adults and children newly enrolled on antiretroviral therapy (ART)

This indicator reports the number of HIV positive persons who were newly started on ART during the reporting period. It is expressed as a number; there is a numerator but no denominator. The data element is QRPH_ADX_ART1_N and it is disaggregated by age group, and by sex.

Table 8.5.3.3-1: Number of adults and children newly enrolled on antiretroviral therapy (ART)

Indicator		Number of adults and children newly enrolled on antiretroviral therapy (ART)			
Indicator Code with Mapping					
WHO/UNAIDS	**PEPFAR**	**Global Fund**	**Kenya**	**Rwanda**	
ART.1	TX_NEW	-	HIV03.4	-	
Numerator		Number of adults and children newly enrolled on antiretroviral therapy (ART) in the reporting period			
QRPH	**WHO/UNAIDS**	**PEPFAR**	**Global Fund**	**Kenya**	**Rwanda**
QRPH_ADX_ART1_N	ART.1	TX_NEW	-	HIV03.4	-
Denominator		NONE			
Disaggregation					
Disaggregation Name	**Age Group Code**	**Sex Code**		**Notes**	
<1, Female	P0Y--P1Y	F		Sex is not included in PEPFAR disaggregation	
<1, Male	P0Y--P1Y	M			
1-4, Female	P1Y—P5Y	F		PEPFAR combines these into 1-9 age group and does not include sex disaggregation Kenya has a separate < 2 age group and 2-9 age group that does not include sex disaggregation	
1-4, Male	P1Y—P5Y	M			
5-9, Female	P5Y--P10Y	F			
5-9, Male	P5Y--P10Y	M			

10-14, Female	P10Y--P15Y	F	
10-14, Male	P10Y--P15Y	M	
15-19, Female	P15Y--P20Y	F	
15-19, Male	P15Y--P20Y	M	
20-24, Female	P20Y--P25Y	F	
20-24, Male	P20Y--P25Y	M	
25-29, Female	P25Y--P30Y	F	
25-29, Male	P25Y--P30Y	M	
30-34, Female	P30Y--P35Y	F	
30-34, Male	P30Y--P35Y	M	
35-39, Female	P35Y--P40Y	F	
35-39, Male	P35Y--P40Y	M	
40-49, Female	P40Y--P50Y	F	
40-49, Male	P40Y--P50Y	M	
50+, Female	P50Y--P9999Y	F	
50+, Male	P50Y--P9999Y	M	

8.5.3.4 Proportion of people living with HIV who are receiving antiretroviral therapy (ART)

This indicator reports the proportion of people living with HIV who are receiving ART. It is expressed as a percentage. The numerator is the number of people living with HIV currently receiving ART during the reporting period. The denominator is the estimated total number of people living with HIV. Generally, this denominator is not generated from individual health facilities but it is estimated using modelling estimates such as Spectrum AIM. The data element is QRPH_ADX_ART3_N (numerator) and it is disaggregated by age group, and by sex.

Table 8.5.3.4-1: Proportion of people living with HIV who are receiving antiretroviral therapy (ART)

Indicator		Percentage of people living with HIV who are receiving antiretroviral therapy (ART)			
Indicator Code with Mapping					
WHO/UNAIDS	**PEPFAR**	**Global Fund**	**Kenya**	**Rwanda**	
ART.3	TX_CURR	TCS-1	HIV03.6	-	
Numerator		Number of adults and children currently receiving antiretroviral therapy (ART)			
QRPH	**WHO/UNAIDS**	**PEPFAR**	**Global Fund**	**Kenya**	**Rwanda**
QRPH_ADX_ART3_N	ART.3	TX_CURR	TCS-1	HIV03.6	-
Denominator		Estimated number of people living with HIV. Note: This denominator is generated at an above health facility level			

Disaggregation			
Disaggregation Name	**Age Group Code**	**Sex Code**	
<1, Female	P0Y--P1Y	F	Sex is not included in PEPFAR disaggregation
<1, Male	P0Y--P1Y	M	
1-4, Female	P1Y—P5Y	F	PEPFAR combines these into 1-9 age group and does not include sex disaggregation Kenya has a separate < 2 age group and 2-9 age group that does not include sex disaggregation
1-4, Male	P1Y—P5Y	M	
5-9, Female	P5Y--P10Y	F	
5-9, Male	P5Y--P10Y	M	
10-14, Female	P10Y--P15Y	F	
10-14, Male	P10Y--P15Y	M	
15-19, Female	P15Y--P20Y	F	
15-19, Male	P15Y--P20Y	M	
20-24, Female	P20Y--P25Y	F	
20-24, Male	P20Y--P25Y	M	
25-29, Female	P25Y--P30Y	F	
25-29, Male	P25Y--P30Y	M	
30-34, Female	P30Y--P35Y	F	
30-34, Male	P30Y--P35Y	M	
35-39, Female	P35Y--P40Y	F	
35-39, Male	P35Y--P40Y	M	
40-49, Female	P40Y--P50Y	F	
40-49, Male	P40Y--P50Y	M	
50+, Female	P50Y--P9999Y	F	
50+, Male	P50Y--P9999Y	M	

8.5.3.5 Proportion of HIV-positive pregnant women who received antiretroviral treatment to reduce risk of mother-to-child-transmission (MTCT) during pregnancy.

This indicator reports the proportion of pregnant women who received ART during pregnancy. It is expressed as a percentage. The numerator is the number of women who were newly started on ART or already on ART at the beginning of the current pregnancy. The denominator is the total number of women who are known to be HIV positive, which include known HIV positive and newly tested HIV positive, during the reporting period. The data elements are QRPH_ADX_MTCT2_N (numerator) and QRPH_ADX_MTCT2_D (denominator). The numerator is disaggregated by new on ART and already on ART during the current pregnancy.

Table 8.5.3.5-1: Proportion of HIV-positive pregnant women who received antiretroviral treatment to reduce risk of mother-to-child-transmission (MTCT) during pregnancy.

Indicator		Percentage of HIV-positive pregnant women who received antiretroviral treatment to reduce risk of mother-to-child-transmission (MTCT) during pregnancy.			
Indicator Code with Mapping					
WHO/UNAIDS	**PEPFAR**	**Global Fund**	**Kenya**	**Rwanda**	
MTCT.2	PMTCT_ART	PMTCT-2.1	HIV02-03	-	
Numerator		Number of HIV-positive pregnant women who received ART to reduce the risk of mother-to-child-transmission during pregnancy			
QRPH	**WHO/UNAIDS**	**PEPFAR**	**Global Fund**	**Kenya**	**Rwanda**
QRPH_ADX_MTCT2_N				HV02-15	
Denominator		Number of HIV positive pregnant women who attended ANC or had a facility-based delivery within the reporting period.			
QRPH	**WHO/UNAIDS**	**PEPFAR**	**Global Fund**	**Kenya**	**Rwanda**
QRPH_ADX_MTCT2_D				HV02-09	
Disaggregation					
Disaggregation Name					
Already on ART					
New on ART					

8.5.3.6 Proportion of adults and children known to be alive and on treatment 12 months after initiation of antiretroviral therapy

This indicator reports the proportion of people living with HIV know to be alive and on treatment 12 months after initiating ART. It is expressed as a percentage. The numerator is the total number of people who are still on ART treatment at 12 months after initiating ART. The denominator is the total number of people who initiated ART 12 months prior to the beginning of the reporting period, including those who died and those who stopped ART treatment. The data elements are QRPH_ADX_ART5_N (numerator) and QRPH_ADX_ART5_D (denominator); they are disaggregated by age group, and by sex. There is an additional disaggregation for those who are pregnant and breastfeeding mothers.

Table 8.5.3.6-1: Proportion of adults and children known to be alive and on treatment 12 months after initiation of antiretroviral therapy

Indicator		Percentage of adults and children known to be alive and on treatment 12 months after initiation of antiretroviral therapy		
Indicator Code with Mapping				
WHO/UNAIDS	**PEPFAR**	**Global Fund**	**Kenya**	**Rwanda**
ART.5	TX_RET	HIV 0-1	HIV03-11	-

Numerator		Number of adults and children who are still on treatment at 12 months after initiating ART			
QRPH	**WHO/UNAIDS**	**PEPFAR**	**Global Fund**	**Kenya**	**Rwanda**
QRPH_ADX_ART5_N				HV03-096	
Denominator		Total number of adults and children who initiated ART in the 12 months prior to the beginning of the reporting period, including those who have died and those who have stopped ART.			
QRPH	**WHO/UNAIDS**	**PEPFAR**	**Global Fund**	**Kenya**	**Rwanda**
QRPH_ADX_ART5_D			-	HV03-097	

Disaggregation			
Disaggregation Name	**Age Group Code**	**Sex Code**	**Notes**
<1, Female	P0Y--P1Y	F	
<1, Male	P0Y--P1Y	M	
1-4, Female	P1Y—P5Y	F	
1-4, Male	P1Y—P5Y	M	
5-9, Female	P5Y--P10Y	F	
5-9, Male	P5Y--P10Y	M	
10-14, Female	P10Y--P15Y	F	
10-14, Male	P10Y--P15Y	M	
15-19, Female	P15Y--P20Y	F	
15-19, Male	P15Y--P20Y	M	
20-24, Female	P20Y--P25Y	F	
20-24, Male	P20Y--P25Y	M	
25-29, Female	P25Y--P30Y	F	
25-29, Male	P25Y--P30Y	M	
30-34, Female	P30Y--P35Y	F	
30-34, Male	P30Y--P35Y	M	
35-39, Female	P35Y--P40Y	F	
35-39, Male	P35Y--P40Y	M	
40-49, Female	P40Y--P50Y	F	
40-49, Male	P40Y--P50Y	M	
50+, Female	P50Y--P9999Y	F	
50+, Male	P50Y--P9999Y	M	
Pregnant at start of ART			
Breastfeeding at start of ART			

8.5.3.7 Proportion of people living with HIV and on ART who are virologically suppressed

This indicator reports the proportion of patients on ART with a viral load result documented within the past 12 months with a suppressed viral load. It is expressed as a percentage. The numerator is the number of people number of people living with HIV and on ART who have a suppressed viral load (<1000 copies/mL) documented within the past 12 months. The denominator is the number of people number of people living with HIV and on ART who have a viral load result documented in the past 12 months. The data elements are QRPH_ADX_VLS3_N (numerator) and QRPH_ADX_VLS3_D (denominator); they are disaggregated by age group, and by sex. There is an additional disaggregation for those who are pregnant and breastfeeding mothers.

Table 8.5.3.7-1: Proportion of people living with HIV and on ART who are virologically suppressed

Indicator		Percentage of people living with HIV and on ART who are virologically suppressed			
Indicator Code with Mapping					
WHO/UNAIDS	**PEPFAR**	**Global Fund**	**Kenya**	**Rwanda**	
VLS.3	TX_PVLS	-	HIV03-12	-	
Numerator		Number of people living with HIV and on ART who have a suppressed viral load results (<1000 copies/mL).			
QRPH	**WHO/UNAIDS**	**PEPFAR**	**Global Fund**	**Kenya**	**Rwanda**
QRPH_ADX_VLS3_N			HIV03-098		
Denominator		Number of people on ART who had a VL measurement in the past 12 months.			
QRPH	**WHO/UNAIDS**	**PEPFAR**	**Global Fund**	**Kenya**	**Rwanda**
QRPH_ADX_VLS3_D			HIV03-099		
Disaggregation					
Disaggregation Name	**Age Group Code**	**Sex Code**			
<1, Female	P0Y--P1Y	F		Sex is not included in PEPFAR disaggregation	
<1, Male	P0Y--P1Y	M			
1-4, Female	P1Y—P5Y	F		PEPFAR combines these into 1-9 age group and does not include sex disaggregation	
1-4, Male	P1Y—P5Y	M			
5-9, Female	P5Y--P10Y	F			
5-9, Male	P5Y--P10Y	M			
10-14, Female	P10Y--P15Y	F			
10-14, Male	P10Y--P15Y	M			
15-19, Female	P15Y--P20Y	F			
15-19, Male	P15Y--P20Y	M			
20-24, Female	P20Y--P25Y	F			
20-24, Male	P20Y--P25Y	M			

25-29, Female	P25Y--P30Y	F	
25-29, Male	P25Y--P30Y	M	
30-34, Female	P30Y--P35Y	F	
30-34, Male	P30Y--P35Y	M	
35-39, Female	P35Y--P40Y	F	
35-39, Male	P35Y--P40Y	M	
40-49, Female	P40Y--P50Y	F	
40-49, Male	P40Y--P50Y	M	
50+, Female	P50Y--P9999Y	F	
50+, Male	P50Y--P9999Y	M	
Pregnant			
Breastfeeding			

