



Selecting Health Systems Metrics for HIV Response Sustainability Planning

Reference

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Abbreviations

AAAQ	Availability, Accessibility, Acceptability, and Quality
AIDS	Acquired immune deficiency syndrome
ART	Antiretroviral therapy
ARV	Antiretroviral medicines
CDCS	Country Development Cooperation Strategy
CI	Confidence interval
CLM	Community-led monitoring
COVID-19	Coronavirus disease 2019
DIPI	Domestic Investment Priority Index
GAM	Global AIDS Monitoring
GC7	Grant Cycle 7
GCI	Global COVID-19 Recovery Index
GHSI	Global Health Security Index
HISPIX	Health Information System Performance Index
HIV	Human immunodeficiency virus
HMIS	Health management information system
HRH	Human resources for health
IHR	International Health Regulations
IMR	Incidence/mortality ratio
IPR	Incidence/prevalence ratio
ISO	International Organization for Standardization
KP	Key population
LMICs	Lower-middle income countries
LIMS	Laboratory information management system
M&E	Monitoring and evaluation
MOH	Ministry of health
NASA	National AIDS Spending Assessment
NCD	Non-communicable disease
NGO	Non-governmental organization
NHI	National health insurance
NSP	National Strategic Plan
OECD	Organisation for Economic Co-operation and Development
OR	Odds ratio
PEPFAR	U.S. President's Emergency Plan for AIDS Relief
PFM	Public financial management
PHC	Primary health care
PLHIV	People living with HIV
PrEP	Pre-exposure prophylaxis
PSM	Procurement and supply chain management
SARA	Service Availability Readiness Assessment
SDG	Sustainable Development Goals
SPAR	Self-Assessment Annual Report
SID	Sustainability Index Dashboard
SVS	Stock visibility system
TB	Tuberculosis
TRAT	Transition Readiness Assessment Tool
TRIPS	Trade-Related Aspects of Intellectual Property Rights
UHC	Universal health coverage
UN	United Nations
UNAIDS	Joint United Nations Programme on HIV/AIDS
USAID	United States Agency for International Development
WHO	World Health Organization

Contents

Abbreviations	2
1. Introduction.....	4
2. Purpose of this reference	5
3. Focus on systems metrics	5
4. Methodology.....	6
5. Overview	Error! Bookmark not defined.
6. Guiding Framework for Selecting Health Systems Metrics for HIV Response Sustainability Planning.....	7
7. Indicator Profiles.....	8
Annex 1: Illustrative Monitoring and Evaluation Framework for a National HIV Sustainability Roadmap	21
Annex 2: Additional Comprehensive Systems Capacities Metrics Databases	22
Annex 3: References.....	23

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1. Introduction

As countries work to reach the goal of ending AIDS as a public health threat by 2030, planning and action is urgently needed for sustaining HIV response gains beyond 2030.

New guidance from the Joint United Nations Programme on HIV/AIDS (UNAIDS) in 2024 encourages all HIV burdened countries to develop HIV Response Sustainability Roadmaps.¹ These Roadmaps will identify a selective framework of goals, impact targets, high-level outcomes and strategies across key domains of sustainability, including, (1) Political Leadership, (2) Enabling Laws and Policies, (3) Sustainable and Equitable Financing, (4) HIV Prevention and Treatment Services and Solutions, and (5) Systems (Figure 1).

Figure 1. HIV Response Sustainability Approach



This new approach to driving sustainable HIV responses requires significant transformations and political commitment to build pathways to a sustainable HIV response. Standard monitoring frameworks that measure service delivery coverage and health outcomes, or diagnostic tools that provide snapshots of health system performance may no longer be fit for purpose. Monitoring frameworks and associated indicators for sustainability roadmaps must enable stakeholders to monitor progress along defined pathways of change across all dimensions of the HIV response towards a desired future state.

Whilst each country's roadmap will address context specific issues across the domains of the response, UNAIDS has highlighted increased public financing of HIV programs, integration of HIV into PHC delivery systems, a well-supported health workforce, equitable access to services, strategic purchasing, community-led delivery and agile surveillance systems as expected characteristics of future country responses.

This approach to sustaining HIV responses requires 'big picture' thinking, risk assessments, transformation planning and prioritization of actions which requires a different planning approach to National Strategic Plans for HIV and annual HIV operational plans. The transformational aspect of roadmap planning also requires indicators that are most relevant and suitable for measuring change – and which may not always be found in traditional M&E frameworks for national HIV responses.

Sustainability Roadmaps are expected to focus on systems-level changes for an integrated domestic HIV response and associated long-term health and HIV-related outcomes and impacts, developing monitoring and evaluation plans to measure sustainability goals may be similarly selective.

2. Purpose of this reference

This reference document is primarily intended for use by stakeholders as a supplementary resource to the health systems metrics catalogue developed by Genesis in 2023 (Annex 2). Both tools aim to support monitoring and evaluation of the systems components within an HIV program and/or national response.

This reference provides non-prescriptive direction for selecting suitable indicators to monitor and measure progress towards strengthened public primary health care systems. It recommends a limited set of the most suitable and high-quality indicators that can be used to track progress towards goals.

The recommended indicators are framed within an easy-to-use typology that organizes the indicators by health system sub-domain and by generic sustainability goal statements for those sub-domains.

Stakeholders are encouraged to consider the array of recommended health systems indicators in this reference and select the most appropriate indicators to suit their country context. For each indicator, a brief rationale is provided to assist with the selection process. The suitability of each indicator for various country contexts is also provided, again to support stakeholders with selection.

3. Focus on systems metrics

While countries and programs will develop monitoring and evaluation plans that cover all five sustainability domains, this guidance focuses only on Domain 5 (Systems).

Domain 5—Systems—is comparatively less well-developed in terms of monitoring and evaluation guidance for HIV programs. Difficulty in finding HIV systems metrics may stem from a HIV programs historically being vertically delivered in parallel to local health systems as well as scarce and scattered evidence on how systems strengthening interventions strengthen the performance of health systems and contribute to sustainable improvements in health status.²

A review of eight different HIV-related transition readiness assessment tools identified key gaps in assessing the sustainability of broader health systems strengthening activities.³ Stakeholders have noted a lack of guidance and standards for monitoring and evaluation of primary healthcare systems, including the implementation of essential packages of health services.⁴ Others have found that existing technical resources to assist with the monitoring and evaluation of health systems strengthening are not deemed useful by practitioners.⁵

Technical review panels for major funding partners have recently observed indicators for resilient and sustainable systems for health that were included in grant performance frameworks were inadequate to measure progress and generate evidence to inform policy making.⁶ They have called for more outcomes-oriented systems indicators, qualitative assessments and workplan tracking measures. Independent evaluations have found that the gap lies with the monitoring instruments for health systems strengthening in countries more generally, not only in specific grant performance frameworks.⁷

4. Methodology

The health system domain was divided into the following sub-domains to enable more specific monitoring of health system performance and to support the organization of suitable indicators at the sub-domain level. These sub-domains are:

- ▶ Integrated service delivery
- ▶ Health product management systems
- ▶ Health workforce systems
- ▶ Laboratory systems
- ▶ Health financing systems
- ▶ Information systems
- ▶ Community systems
- ▶ Emergency preparedness systems

A systematic review was performed to identify metrics that are used to measure health system performance across the above sub-domains and progress towards sustainability. From 1055 total resources identified, 40 records were included in the review. From these, 1775 metrics were extracted and catalogued. The database includes 262 metrics on political leadership, 755 on quality access to services, 250 on system capacities, 106 on enabling policies, and 402 on domestic and international financing.

Next, the 250 systems capacities indicators were further prioritized. Additional metrics were considered from international guidance⁸, other indicator databases⁹, and national strategies. To arrive at the most suitable and high-quality indicators for monitor and measure progress towards strengthened public health systems and HIV sustainability goals, the following criteria were applied:

- ▶ **Relevance** – Is the metric relevant to the defined pathway to change for that sub-domain? Is it relevant to other domains in the sustainability approach.
- ▶ **Significance** – Does this indicator measure high-level outcomes and could it measure the main transformations that are required to achieve and sustain impact beyond 2030?
- ▶ **Usefulness** – Is there evidence that the indicator has been used by countries or their partners to measure health systems related transition or related transformation goals (such as HIV integration)?
- ▶ **Feasibility** – Is the indicator a standard/widely used indicator or a custom indicator? If custom, does the data for this indicator already exist, or be relatively simple to collect?

The above criteria were applied qualitatively, informed by the experience and expertise of Genesis Analytics. A more systematic approach was not deemed appropriate for this exercise.

5. Overview

The health system sub-domains function as critical enablers to achieve HIV response sustainability goals. Table 1 provides a framework for selecting indicators for monitoring the performance of the health system sub-domains. The framework provides **25 recommended indicators** that are organized by the relevant sub-domains as well as by generic goals statements that the indicators contribute to.

As described above, the indicators were carefully selected by reviewing and selecting the most appropriate indicators based on the authors' assessment of the indicators using the criteria of relevance, significance, usefulness and feasibility.

A longer list of possible systems metrics is contained in Annex 2 for practitioners who may wish to explore a wider list of potential indicators.

6. Guiding Framework for Selecting Health Systems Metrics for HIV Response Sustainability Planning

Sub-Domains	Illustrative Goal Areas	Recommended Sustainability Metrics
Integrated Service Delivery Systems	HIV is fully integrated across disease programs and at the service delivery level	Percentage of facilities providing integrated HIV and primary healthcare (PHC) services
		Percentage of facilities providing integrated HIV and non-communicable disease (NCD) services
	People access available HIV-related health services to achieve and maintain epidemic control	Service availability index
Health Product Management Systems	There is an uninterrupted supply of essential HIV-related medicines and commodities	Percentage of treatment sites that had a stock-out of one or more required antiretroviral medicines during a defined period
		Percentage of expenditure on HIV-related medicines and commodities that was procured using national procurement systems
	Quality HIV-related medicines and commodities are procured at the lowest possible price	Percentage of HIV-related medicines and commodities procured at international reference prices and/or through pooled procurement mechanisms
Health Workforce Systems	Essential HIV-related healthcare workers are retained in post	Vacancy rate for critical HIV-related healthcare workers, including community level and/or healthcare worker density and distribution
	The production of new healthcare workers trained in HIV care is optimized to meet the need	Output of health workforce training institutions
	Deployment of essential HIV-related healthcare workers is not donor dependent	Percentage health workers providing core HIV-related services with salaries or stipends paid by external partners
	HIV services are task-shifted according global best practices to optimize cost-efficiency and patient-centeredness	Lay cadres (nurses, pharmacists, peers, and others) are able to provide critical HIV-related services such as prescribing ART/PrEP, offering HIV testing, etc.
Laboratory Systems	Adequate national capacity to process laboratory tests (incl. viral load tests) accurately and in a timely manner	Percentage of National Reference Laboratories accredited according to ISO15189 standard / Progression towards ISO15189 standard
		Average turnaround time for viral load test results
Health Financing Systems	Health financing systems minimize out-of-pocket and catastrophic expenditure	Percentage of population covered by financial risk protection schemes
	Increased private sector participation in the national HIV response	Number and value (local currency) of partnerships with private sector entities in defined health programs
	Health financing and systems are strengthened and integrated according to global guidance and best practice	Number of health financing and public financial management (PFM) reforms introduced
	Strategic information on health financing is available and effectively used by relevant government departments	Existence of allocative efficiency study (Optima, or equivalent), National AIDS Spending Assessment (NASA), and mid- and end-term review of HIV Sustainability Roadmap, and/or other relevant reports
Information Systems	Strategic information on HIV is relevant, accurate, available, and timely	Health information system performance index (HISPIX)
Community Systems	Community-based and community-led service delivery is optimized to reach all people with HIV prevention and care efficiently and effectively	Percentage of HIV services delivered by civil society- and/or community-led service providers
		Percentage of annual public HIV expenditure through non-profit service providers
	Communities systematically and routinely participate in the monitoring of HIV-related services and their quality improvement	Number of civil society- and/or community-led service providers accredited by a national quality assurance body to provide community-based health services
Emergency Preparedness Systems	HIV services are resilient in the face of external shocks (i.e., disease outbreaks, political instability, climate events)	Community-led monitoring data is integrated into routine health management information systems and/or national M&E systems
		Percentage of adults living with HIV currently receiving antiretroviral therapy who are affected by treatment disruptions
	Domestic health systems and capacity is in place to prevent, detect, and respond to infectious disease outbreaks, pandemics, and other health emergencies	Percentage of crisis affected areas with at least a six-month supply of ARVs and condoms
		International Health Regulations (IHR) core capacity index
	Global Health Security Index (GHSI)	

7. Indicator Profiles

Indicator	Percentage of primary helathcare providers offering HIV care and support services
Rationale	<p>Relevance: This indicator is a good general measure of service integration, which is important in the context of long-term sustainability of HIV services. Integration of HIV and related services is more cost effective^{10,11,12} (Domain 3, Sustainable and Equitable Financing) and promotes better HIV outcomes, including viral suppression (Domain 4, HIV Prevention and Treatment Services and Solutions).¹³ If the clinic can provide both PHC and HIV services, it tells you about its data systems, medicine availability, human resources, and other sub-domains of Health Systems (Domain 5).</p> <p>Significance: Integrating global HIV services with primary health care is a key step in sustainable HIV epidemic control.¹⁴ Transitioning from stand-alone HIV programming to integrated primary care programmes is imperative.¹⁵</p> <p>Usefulness: This indicator ordinates from Global AIDS Monitoring (GAM), National Commitments and Policy Instrument: Part A (question 73)¹⁶ as well as Service Availability Readiness Assessments (SARA) (S18).¹⁷ Variations of this metric are used, discussed, or reported on in Botswana's Sustainability Roadmap 2023 ("Develop HIV-PHC Integration Plan"), and The Road to Sustainability: Transition Preparedness Assessment Framework.</p> <p>Feasibility: Data may be sourced from a Service Availability Readiness Assessments (SARA), or equivalent. Reporting on integration is now included in the GAM guidance and should become more routine as countries develop monitoring frameworks for integration.</p>
Suitability	Low prevalence settings with strong PHC models may seek to measure HIV integration into PHC clinics, whereas high prevalence settings with weaker PHC models may opt to measure PHC integration into HIV clinics. ¹⁸

Indicator	Percentage of health facilities providing integrated HIV and NCD services
Rationale	<p>Relevance: Integration of HIV and related services may increase cost-effectiveness and quality of care in some settings^{19,20,21} (Domain 3, Sustainable and Equitable Financing), favour people-centred service delivery and promote better HIV outcomes, including viral suppression (Domain 4, HIV Prevention and Treatment Services and Solutions).²² Integrated programmes can deliver wider health impact than standalone care delivery. Via clinical, functional, and organisational support, integrated programmes can improve non-communicable disease (NCD) outcomes while sustaining or improving HIV outcomes.²³</p> <p>Significance In some countries, up to 84% of people living with HIV (PLHIV) will have at least one NCD by 2030, up from 29% in 2010, with 28% of PLHIV in 2030 having three or more NCDs.²⁴ The changing epidemiology in many countries highlights a need for integration into NCD services. PEPFAR has a unique opportunity to innovate with service delivery models to effectively build integrated linkages between HIV service delivery and selected hypertension and mental health delivery.²⁵</p> <p>Usefulness: This indicator originates from the WHO Global NCD action plan 2013–2030 (48c).²⁶ Variations of this metric are used, discussed, or reported on in Botswana's Sustainability Roadmap 2023, Kenya's Health Policy 2014-2030, and mentioned as an important contextual factor in Jamaica's HIV Sustainability and Transition Plan 2020, Mongolia's Sustainability and Transition Readiness Assessment and Work Plan for TB and HIV 2020, and Cambodia's HIV Sustainability Roadmap 2023-2029.</p> <p>Feasibility: Data may be readily sourced from a SARA, or equivalent.</p>
Suitability	This indicator may be more suitable for countries where new infections among young people are falling and there is a growing population of people aging with HIV. Countries where the epidemic is projected to remain concentrated among young people may prefer other integration metrics.

Indicator	Service Availability Index																																								
Rationale	<p>Relevance: This indicator is an unweighted composite of six metrics that cover infrastructure, workforce, and utilization (Table 2). It covers several sub-domains of systems capacities (Domain 5, Systems). Measuring service utilization also assesses human rights and gender-related barriers (Domain 2, Enabling Laws and Policies) and the quality of services (Domain 4, HIV Prevention and Treatment Services and Solutions).</p> <p>Table 2. Metrics included in the Service Availability Index and Suggested Targets²⁷</p> <table border="1"> <thead> <tr> <th></th> <th>Indicator</th> <th>Target</th> <th>Score</th> </tr> </thead> <tbody> <tr> <td colspan="3">Health infrastructure</td> <td>Score = N/target</td> </tr> <tr> <td>(a)</td> <td>Facilities</td> <td>N per 10 000 population</td> <td>2</td> </tr> <tr> <td>(b)</td> <td>Inpatient beds</td> <td>N per 10 000 population</td> <td>25</td> </tr> <tr> <td>(c)</td> <td>Maternity beds</td> <td>N per 1000 pregnant women</td> <td>10</td> </tr> <tr> <td colspan="3">Health workforce</td> <td></td> </tr> <tr> <td>(d)</td> <td>Core health workforce</td> <td>N per 10 000 population</td> <td>23</td> </tr> <tr> <td colspan="3">Service utilization</td> <td></td> </tr> <tr> <td>(e)</td> <td>Utilization</td> <td>Outpatient visits per person/year</td> <td>5</td> </tr> <tr> <td>(f)</td> <td>Utilization</td> <td>Hospital discharges per 100/year</td> <td>10</td> </tr> </tbody> </table> <p>Significance: This indicator measures an equilibrium between adequate supply (infrastructure, workforce) and demand (utilization) of health services. It is important that these be balanced to optimize efficiency and impact in the long run.</p> <p>Usefulness: This indicator originates from WHO's SARA. Variations of this metric are used, discussed, or reported on by Kenya to measure systems capacity for UHC,²⁸ Somalia's Roadmap Towards UHC 2019-2023,²⁹ a capacity assessment of PHC facilities in Saudi Arabia³⁰, and an assessment of the availability and readiness to provide HIV services in Burkina Faso.³¹</p> <p>Feasibility: The calculation of the index is slightly complex but is clearly explained in WHO guidance.³² Countries seeking a simpler metric may instead opt to use the Service Utilization Index (composite of two indicators), or for the simplest approach, just use the measure of utilization through outpatient visits per person per year.</p>		Indicator	Target	Score	Health infrastructure			Score = N/target	(a)	Facilities	N per 10 000 population	2	(b)	Inpatient beds	N per 10 000 population	25	(c)	Maternity beds	N per 1000 pregnant women	10	Health workforce				(d)	Core health workforce	N per 10 000 population	23	Service utilization				(e)	Utilization	Outpatient visits per person/year	5	(f)	Utilization	Hospital discharges per 100/year	10
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Suitability	This indicator may be particularly suitable for countries that are likely to attain Universal Health Coverage by 2030. In countries with poor or suboptimal health infrastructure, the service utilization rate may be a better indicator of access. ³³																																								

Indicator	Percentage of treatment sites that had a stock-out of one or more required antiretroviral medicines during a defined period
Rationale	<p>Relevance: A sustainable supply of medicines is critical for maintaining viral load suppression and epidemic control (Domain 4, HIV Prevention and Treatment Services and Solutions). Stock-outs can also be a symptom of wider systems challenges and shocks (emergency preparedness sub-domain).</p> <p>Significance: Globally, more than a third (36%) of ART clinics report at least one ARV stockout in the past year.³⁴ Stockouts of HIV commodities increase the risk of treatment interruption, ART resistance, treatment failure, morbidity, and mortality.³⁵</p> <p>Usefulness: This indicator originates from WHO's harmonized M&E indicators for PSM systems.³⁶ Variations of this metric are used, discussed, or reported on in Namibia's Sustainability Framework for the HIV/AIDS Response 2019, Botswana's Sustainability and Transition Roadmap for HIV and TB 2023, and in a synthesis report for sustainability and transition in Belarus, Bulgaria, Georgia, and Ukraine.</p> <p>Feasibility: CLM data may be used to compliment National SVS data on stock-outs. Most countries are experienced at reporting on stock-outs for the GAM report.</p>
Suitability	This indicator may be most suitable for high-burden, low-income countries. African countries—where stockouts are most frequent—may find this indicator most useful. ³⁷

Indicator	Percentage of HIV-related medicines and commodities that are procured using national procurement systems
Rationale	<p>Relevance: This indicator is a good measure of country ownership (Domain 1, Political Leadership) and speaks to domestic financing as well (Domain 3, Sustainable and Equitable Financing).</p> <p>Significance: Shifting from a donor-funded HIV commodity procurement program to one managed by the Government marks an important milestone in country-led supply chains.</p> <p>Usefulness: This indicator originates from EHRA's Transition Readiness Assessment Tool (TRAT).³⁸ Variations of this metric are used, discussed, or reported in Mongolia's Sustainability and Transition Work Plan for TB and HIV 2020 and Viet Nam's Roadmap to Develop and Implement the Basic Health Service Package Paid by Health Insurance 2014-2017.³⁹</p> <p>Feasibility: Countries may select one or more core commodities (ARVs, test kits, viral load lab reagents) and track their transition to state-led procurement systems. Alternatively, an index, or percentage, could be calculated.</p>
Suitability	<p>This indicator may be most suitable for countries that are currently relying on donor procurement but are projected to transition out of eligibility by 2030.⁴⁰ Lower income, higher burden countries that are likely to continue in a partnership approach for procurement in 2030 and beyond may find this indicator less useful.</p>

Indicator	Number of HIV-related medicines and commodities procured at international reference prices and/or through pooled procurement mechanisms
Rationale	<p>Relevance: This metric is closely linked to financing (Domain 3) since it focuses on securing HIV-related medicines and commodities at the lowest possible price and may also speak to enabling policies (Domain 2) if TRIPS flexibilities are exploited.</p> <p>Significance: Using pooled procurement mechanisms can improve market visibility, simplify transaction management, and improve procurement lead times, while increasing access to quality and value-for-money products.⁴¹ By using pooled procurement mechanisms, 50 of the poorest LMICs could save as much as 16 to 41 percent of the \$63 billion in total spending on health products across the government, donor, and private sectors. This represents annual recurrent savings ranging from \$10 to \$26 billion.⁴²</p> <p>Usefulness: This indicator originates from UNAIDS GAM (indicator 8.2) and PEPFAR's Sustainability Index Dashboard (SID) (indicator 12.5). Variations of this metric are used, discussed, or reported on in Namibia's Sustainability Framework for the HIV/AIDS Response 2019, Guatemala's National Strategy for Sustainability of the National Response to HIV/AIDS 2019, Cambodia's HIV Sustainability Roadmap 2023-2029 ("TRIPS flexibilities"), Mongolia's Sustainability and Transition Work Plan for TB and HIV 2020, Jamaica's HIV Sustainability and Transition Plan 2020 ("bulk procurement"), Tunisia's HIV Transition Action Plan 2021 (pooled procurement study is prioritized), and recommended in The Road to Sustainability: Transition Preparedness Assessment Framework.</p> <p>Feasibility: Reference prices of commonly used products as well as data summaries of procurements made are available in the public domain.^{43,44}</p>
Suitability	<p>This indicator may be most suitable for countries that are seeking to reduce their procurement costs. Depending on country context, this indicator could be adapted to measure the use of pooled procurement mechanisms with domestic resources.⁴⁵</p>

Indicator	Vacancy rate for critical HIV-related healthcare workers, including community level and/or healthcare worker density and distribution
Rationale	<p>Relevance: This indicator measures both retention and production of healthcare workers and may include human resources across different sub-domains (doctors, nurses, community health workers including peers, lab technicians, data clerks, etc.). Availability of healthcare workers is critical for the provision of high-impact services (Domain 4).</p> <p>Significance: It is projected that there will still be a global shortage of 18 million health workers in 2030, primarily in low- and middle-income countries (LMICs).⁴⁶ Evidence shows that additional lab and lay cadres are associated with increased diagnosis and treatment of people living with HIV.⁴⁷</p> <p>Usefulness: This indicator originates from the WHO's National Health Workforce Accounts: A Handbook.⁴⁸ Variations of this metric are used, discussed, or reported on in Zimbabwe's HIV Sustainability Roadmap 2024, Botswana Sustainability and Transition Roadmap for HIV and TB 2023, South Africa's Sustainability Framework 2021, Jamaica's HIV Sustainability and Transition Plan 2020, and a Sustainability Analysis of HIV/AIDS Services in Nigeria. Health worker density and distribution [SDG 3.c.1] is recommended as a health systems indicator in the WHO's Global Reference List of 100 Core Health Indicators.⁴⁹</p> <p>Feasibility: This indicator may be easily measured through routine data from national health services boards, labour force surveys, or health facility assessments.</p>
Suitability	<p>This indicator may be most suitable for the 61 countries that have fewer than 23 per 10,000 skilled health personnel⁵⁰, especially where this shortage is driven by retention challenges. It may also be useful for countries seeking close major access gaps or enhance efficiency by addressing healthcare worker attrition.</p>

Indicator	Output of health workforce training institutions
Rationale	<p>Relevance: This indicator may include the production of human resources across different sub-domains (doctors, nurses, community health workers including peers, lab technicians, data clerks, etc.). Availability of healthcare workers is critical for the provision of high-impact services (Domain 4).</p> <p>Significance: It is projected that there will still be a global shortage of 18 million health workers in 2030, primarily in low- and middle-income countries (LMICs).⁵¹ Evidence shows that additional lab and lay cadres are associated with increased diagnosis and treatment of PLHIV.⁵²</p> <p>Usefulness: This indicator originates from the WHO's Handbook on monitoring and Evaluation of Human Resources for Health with special focus on low- and middle-income countries.⁵³ Monitoring the building blocks of health systems: a handbook of indicators and their measurement strategies. Variations of this metric are used, discussed, or reported on in Zimbabwe's HIV Sustainability Roadmap 2024, and in Jamaica's HIV Sustainability and Transition Plan 2020 ("new recruits to fill the positions of those retiring"). Output of training institutions is recommended as a health systems indicator in the WHO's Global Reference List of 100 Core Health Indicators.⁵⁴</p> <p>Feasibility: This indicator may be measured through databases on education and training statistics, or through education and training institutions.</p>
Suitability	<p>This indicator may be most suitable for the 61 countries that have fewer than 23 per 10,000 skilled health personnel⁵⁵, especially where this shortage is driven by production challenges. Countries where healthcare worker training schools are underproducing according to their capacity may also wish to measure this to monitor efficiency of production.</p>

Indicator	Percentage health workers providing core HIV-related services with salaries or stipends paid by external partners
Rationale	<p>Relevance: This indicator is closely linked to domestic and international financing (Domain 3), so will tell you about this area as well. It may apply to community health workers, peer educators (community systems sub-domain), lab personnel (lab systems sub-domain), data clerks (HMIS sub-domain), warehousing personal (PSM sub-domain), etc.</p> <p>Significance: Domestic funding for human resources is a key factor associated with sustained coverage in the context of donor transition of HIV and other health programs.⁵⁶</p> <p>Usefulness: This indicator originates from PEPFAR (HRH_CURR). Variations of this metric are used, discussed, or reported on in South Africa's Sustainability Framework 2021 (for CHWs only), Jamaica's HIV Sustainability and Transition Plan 2020 (for peer educators, project managers/M&E officers, human rights positions in the Ministry of Health and Wellness), Namibia's Sustainability Framework for the HIV/AIDS Response 2019, Mongolia Sustainability and Transition Work Plan for TB and HIV 2020, and Cambodia's Sustainability Roadmap 2023-2029 (# staff on long-term contracts). It is also used in report for sustainability and transition in Belarus, Bulgaria, Georgia, and Ukraine, as well as routinely tracked by PEPFAR (HRH_CURR).</p> <p>Feasibility: This is relatively easy to monitor through NASAs or equivalent. Program data may also be used, looking at grant and state budgets for human resources.</p>
Suitability	<p>This indicator may be most suitable for countries that are currently relying on donors to sustain the health workforce but are projected to transition out of eligibility by 2030.⁵⁷ Lower income, higher burden countries that are likely to continue in a partnership approach for HRH by 2030+ may find this indicator less useful.</p>

Indicator	Lay cadres (nurses, pharmacists, peers, and others) are able to provide critical HIV-related services such as prescribing ART/PrEP, offering HIV testing, etc.
Rationale	<p>Relevance: This indicator tells you about cost-effectiveness (Domain 3), and access to quality services (Domain 4) since high-risk groups often prefer lay providers when accessing HIV services. It will also be telling of enabling policies (Domain 4) since regulatory approval allowing for lay cadres to provide services is needed.</p> <p>Significance: Task-shifting and task sharing can address workforce shortages and enhance cost-effectiveness.⁵⁸ Globally between 20% and 40% of all health spending is wasted, and health workforce inefficiencies are responsible for a large proportion of that⁵⁹, as they make up about a third of total health expenditure.⁶⁰ Lay provider services have also been shown to be more effective at reaching high-risk groups.⁶¹</p> <p>Usefulness: This indicator originates from the WHO's Global Recommendations and Guidelines on Task Shifting (Annex 5 Monitoring and Evaluation).⁶² Variations of this metric are used, discussed, or reported on in Namibia's Sustainability Framework for the HIV/AIDS Response 2019, Botswana's Sustainability Roadmap 2023, and Jamaica's HIV Sustainability and Transition Plan 2020 (noting community-level prescribing capacity). Thailand currently tracks the number of key population-led lay providers who are certified to do HIV testing.</p> <p>Feasibility: This is a simple Y/N indicator, which could be adapted to track # of lay cadres trained or accredited.</p>
Suitability	<p>This may be particularly suitable for countries with high unit costs, or above-median life-time costs⁶³, for delivering HIV-related services. It may also be a good metric for countries seeking to expand service access among key and vulnerable populations.</p>

Indicator	Percentage of National Reference Laboratories accredited according to ISO15189 standard / Progression towards ISO15189 standard
Rationale	<p>Relevance: Achievement of ISO15189 accreditation demonstrates competency of a laboratory to conduct testing. ISO accreditation may save time (HRH sub-domain), money (Domain 3), and deliver better patient outcomes (Domain 4). It may enable labs to be on preferred provider lists as part of NHI (Domain 3) and improve quality for viral load and other tests (Domain 4).</p> <p>Significance: Quality and timely viral load testing is among the most important systems capacities needed to achieve and maintain epidemic control. ISO accreditation of laboratories may reduce turn-around times by up to 95%, and specimen rejections by 93%, at low cost.⁶⁴ National systems for lab accreditation are essential to sustainably anchor quality improvement initiatives at facility level.⁶⁵ Lab accreditation may become self-sustaining if certain procedures are followed.⁶⁶</p> <p>Usefulness: This indicator originates from the Global Fund's Modular Framework Handbook (RSSH/PP LAB-1). It has been selected by Bangladesh, Burundi, Ghana, Indonesia, Nigeria, Tanzania, Ukraine, and Zambia as part of monitoring their Global Fund grants. Monitoring lab capacity is prioritized in Jamaica's HIV Sustainability and Transition Plan 2020 and Namibia's Sustainability framework for the HIV/AIDS Response 2019.</p> <p>Feasibility: This may be easily calculated as there are few reference labs and the proportion with ISO standards, or the number of stars that each lab has, can be easily collected.</p>
Suitability	Countries with challenges in viral load testing capacity and quality may find this indicator particularly useful. Those already tracking it in existing performance frameworks may find it most feasible to integrate into sustainability roadmaps.

Indicator	Average turnaround time for viral load test results
Rationale	<p>Relevance: Turnaround time is frequently used as the benchmark for laboratory performance.⁶⁷ It also acts as a quality indicator to evaluate the effectiveness (Domain 4) and efficiency (Domain 3) of the testing process and the satisfaction of clinicians and patients.⁶⁸ It may also speak to availability of laboratory personnel (health workforce sub-domain) and functioning of lab information systems (information systems sub-domain). This indicator is an important measure of service access (Domain 4), and efficiency which has implications for financing (Domain 3).</p> <p>Significance: This indicator originates from ISO15189 standards (indicator 4.14.7).⁶⁹ Systems to support population-level viral load suppression is an essential transformation for long-term sustainability of the HIV response. Measuring population-level viral load suppression is provisionally recommended in the UNAIDS' primer.⁷⁰ Wait times for health services have been an important policy issue in most OECD countries for many years (and are regularly tracked).⁷¹ This is likely to become increasingly important for LMICs as they transform post-2030.</p> <p>Usefulness: Variations of this metric are used, discussed, or reported on in Namibia's Sustainability Framework for the HIV/AIDS Response 2019, Botswana's Sustainability Roadmap 2023, and Jamaica's HIV Sustainability and Transition Plan 2020.</p> <p>Feasibility: This information can be easily extracted from LIMS systems. It can also be supplemented with community-led monitoring data, as this is a common indicator.</p>
Suitability	This indicator may be particularly suitable for countries with poor viral load testing coverage, and/or low levels of population-level viral load suppression.

Indicator	Percentage of population covered by financial risk protection schemes
Rationale	<p>Relevance: This indicator is closely connected to Domain 2 (Enabling Laws and Policies) and Domain 3 (Equitable and Sustainable Finance). It is a good proxy for the existing of national health insurance legislation, as well as the systems in place to ensure coverage reaches those most in need. It also has significance for Domain 1 (Political Commitment). In the 2023 UN Political Declaration countries reaffirmed and renewed their political commitment to achieve UHC by 2030, including financial risk protection.⁷²</p> <p>Significance: PEPFAR leadership has emphasized that strategies to expand each country's financial protection programmes will also likely be important as countries advance towards the 95-95-95 targets.⁷³ This is especially so as trends in financial protection are worsening, with the incidence of catastrophic out-of-pocket spending on health having increased from 12.6% in 2015 to 13.5% in 2019.⁷⁴</p> <p>Usefulness: This indicator originates from the Global Fund's Modular Framework Handbook (HFS-4). Variations of this metric are used, discussed, or reported on in Nigeria's GC7 Global Fund grant, Mongolia's Sustainability and Transition Work Plan for TB and HIV 2020, Cambodia's HIV Sustainability Roadmap 2023-2029, Ethiopia's HIV Domestic Resource Mobilization and Sustainability Strategy 2020–2025, Peru's Action Plan for the Sustainability of HIV and TB 2021-2025, among others.</p> <p>Feasibility: This indicator may be measured by simple enrollment data from national health insurance agencies. If countries prefer to measure utilization instead of eligibility, claims data may be used instead.</p>
Suitability	<p>This indicator may be most suitable for countries seeking to scale up coverage of existing national health insurance schemes. It may be less relevant for countries that do not yet have functional schemes in place, or countries that have already achieved high coverage of UHC. Depending on the country context, this indicator could be modified to measure coverage among people living with HIV and/or key populations.</p>

Indicator	Number and value (local currency) of partnerships with private sector entities in defined health programs
Rationale	<p>Relevance: This indicator is closely connected to Domain 2 (Enabling Laws and Policies), in terms of legislative environments for public-private partnerships and corporate social responsibility and Domain 3 (Equitable and Sustainable Finance).</p> <p>Significance: New sustainability guidance from UNAIDS notes that pathways to transformations of the HIV response may include market related interventions, such as those to unlock innovative and effective private sector solutions and support market creation.⁷⁵ Partnerships with the private sector have the potential to leverage significant resources as well as technical expertise and capacity to sustain the HIV response. For example, in India, the Corporate Social Responsibility law raises \$3 billion/year for various development projects, 20.5% of which focus on health.^{76,77}</p> <p>Usefulness: This indicator originates from the USAID Guidebook for M&E of Public Financial Management assistance.⁷⁸ Variations of this metric are used, discussed, or reported in Cambodia's HIV Sustainability Roadmap 2023-2029, Jamaica's HIV Sustainability and Transition Plan 2020, Namibia's Sustainability Framework for the HIV/AIDS Response, Tunisia's HIV Transition Action Plan 2021, among others.</p> <p>Feasibility: Data sources may include USAID performance monitoring plans, or other records of public-private partnerships.</p>
Suitability	<p>This indicator may be more suitable for higher-income countries, where partnering with the private sector has successfully addressed healthcare challenges, including the lack of infrastructure, services, and equipment.⁷⁹ It may also be particularly suitable in countries with enabling legislation for corporate social responsibility (such as India, Indonesia, Mauritius, South Africa, and others).</p>

Indicator	Number of health financing and public financial management reforms introduced
Rationale	<p>Relevance: This indicator is closely connected to Domain 3 (Equitable and Sustainable Finance). It also links with Domain 1 (Political Commitment), since studies show that PFM reform succeed best when there is political will to drive the reforms, sufficient capacity for long-term sustainability, strengthened parliamentary systems, and a civil society to hold the government accountable.⁸⁰</p> <p>Significance: Relevant PFM reforms may include strategic purchasing arrangements, program-based budgeting, gender-responsive budgeting and performance-based financing. This indicator is recommended in the Companion Guide to the UNAIDS HIV Response Sustainability Roadmap Primer.⁸¹ Structural and fiscal reforms can increase potential GDP growth in the long run and thus promote sustainability.</p> <p>Usefulness: This indicator originates from the USAID Guidebook for M&E of Public Financial Management assistance. This indicator has been used in USAID grants in Nepal (CDCS, 2014-2018), Zambia (CDCS, 2011-2015), Liberia (CDCS, 2013-2017), Philippines (CDCS, 2012-2016) and Jordan (CDCS, 2013-2017).</p> <p>Feasibility: This indicator may be assessed quantitatively (number of reforms), or qualitatively (progress on implementing reforms).</p>
Suitability	This indicator may be suitable for countries where PFM reforms are underway or are planned.

Indicator	Existence of allocative efficiency study (Opima, or equivalent), National AIDS Spending Assessment (NASA), and mid- and end-term review of HIV Sustainability Roadmap, and/or other reports
Rationale	<p>Relevance: These studies are essential for financial decisions (Domain 3; Equitable and Sustainable Finance) and for galvanizing political will (Domain 1, Political Commitment).</p> <p>Significance: Optima HIV has been applied in over 40 countries with many studies resulting in shifts in policy or programmatic emphases.⁸²</p> <p>Usefulness: This indicator originates from PEPFAR's Sustainability Index Dashboard (SID) (indicator 12.1). Variations of this metric are used, discussed, or reported on in Botswana's HIV Sustainability Roadmap 2023 (Optima & NASA); Colombia's HIV Transition Work Plan 2019 (Optima); Tunisia's HIV Transition Action Plan 2021; and Mongolia's Sustainability and Transition Work Plan for TB and HIV 2020 ("conduct allocative efficiency study"). It is also Recommended in "The Road to Sustainability: Transition Preparedness Assessment Framework" and used in the synthesis report for sustainability and transition in Belarus, Bulgaria, Georgia, and Ukraine.</p> <p>Feasibility: This may be a simple Y/N indicator for countries, and could include existence of a single prioritized study, or a composite of several strategic studies.</p>
Suitability	This indicator may be most suitable for countries where allocative efficiency gains have not yet been fully realized. All countries could benefit from monitoring reviews of their roadmaps as key milestones for political commitment.

Indicator	Percentage of HIV services delivered by civil society- and/or community-led service providers
Rationale	<p>Relevance: This indicator tells you about quality service access (Domain 4) since community-led services have been shown to be more effective for reaching certain populations. It also tells you about financing (Domain 3) since community-led services are more cost-effective. This indicator also gives an indication on enabling policies (Domain 2) since there must not be regulatory barriers for community-led service delivery or funding flows to community-led organizations.</p> <p>Significance: Measuring community-led service delivery provides an indication on a range of HIV-related outcomes, including viral load suppression.⁸³</p> <p>Usefulness: This indicator originates from the Global AIDS Strategy 2021-2026 (30-60-80 targets). Variations of this metric are used, discussed, or reported in Namibia's Sustainability Framework for the HIV/AIDS Response 2019 ("increased percentage of local civil society participating in HIV/AIDS service delivery") and South Africa's Sustainability Framework 2021 (outsourcing community-level HIV services to CSOs).</p> <p>Feasibility: DHIS2 can provide aggregated data for each of the organisation unit ownership types (e.g. MoH, Private, NGO).⁸⁴ The Global Fund's data service now provides data by implementer type, including community-led organizations.⁸⁵</p>
Suitability	<p>While all countries have committed to this via the 30-60-80 targets in the UN Political Declaration,⁸⁶ this indicator may be most suitable for the HIV Sustainability Roadmaps in countries with concentrated epidemics among key populations.</p>

Indicator	Percentage of annual public HIV expenditure through non-profit service providers
Rationale	<p>Relevance: This indicator is closely connected to Domain 3 (Equitable and Sustainable Finance). It also links with Domain 2 (Enabling Laws and Policies) insofar as it provides information on an enabling legal and policy environment for funding to flow to community organizations.</p> <p>Significance: Civil society and community organizations play a critical role in the delivery of HIV prevention, care, and treatment services to vulnerable communities globally. Their involvement has been instrumental in scaling up the global HIV response and introducing innovations across the entire HIV cascade to reach groups previously unserved, particularly key populations.⁸⁷</p> <p>Usefulness: This indicator originates from PEPFAR's Sustainability Index Dashboard (SID) (indicator 3.4). Variations of this metric are used, discussed, or reported in Botswana's Sustainability and Transition Roadmap for HIV and TB 2023, Cambodia's HIV Sustainability Roadmap 2023-2029, Ethiopia's HIV Domestic Resource Mobilization and Sustainability Strategy 2020–2025, Jamaica's HIV Sustainability and Transition Plan 2020, Namibia's Sustainability Framework for the HIV/AIDS Response, and Tunisia's HIV Transition Action Plan 2021.</p> <p>Feasibility: This can be tracked through NASA or equivalent expenditure tracking exercises.</p>
Suitability	<p>While all countries have committed to this via the 30-60-80 targets in the UN Political Declaration,⁸⁸ this indicator may be most suitable for the HIV Sustainability Roadmaps in countries with concentrated epidemics among key populations.</p>

Indicator	Health information system performance index (HISPIX)
Rationale	<p>Relevance: Measuring digital health may provide an indication of: improving access to health care services especially for those in hard-to-reach areas (Domain 4), improvements in safety and quality of healthcare services and products, improved knowledge and access of health workers and communities to health information (Domain 5, HMIS sub-domain); cost savings and efficiencies in health services delivery (Domain 3); and improvements in access to the social, economic and environmental determinants of health (Domain 2), all of which could contribute to the attainment of universal health coverage.⁸⁹</p> <p>Significance: Measuring the utilization of electronic medical records may be a good indication of increased odds of, and reduced time to, ART initiation.⁹⁰ Other critical efficiency gains may also be indicated, such as reductions in missed appointments and reduced waiting times.⁹¹</p> <p>Usefulness: This indicator originates from the WHO's toolkit on monitoring health systems strengthening: Health Information Systems.⁹² Variations of this metric (related to digital health information systems) are used, discussed, or reported on in South Africa's Sustainability Framework 2021, Botswana's Sustainability Roadmap 2023, Guatemala's National Strategy for Sustainability of the HIV Response 2019, Namibia's Sustainability Framework for the HIV/AIDS Response 2019, and Saudi Arabia's National Framework for Health Status and Health System Performance Indicators 2023.</p> <p>Feasibility: Variations of this indicator are commonly tracked and reported to donors, including 66 countries as part of Global Fund grants.</p>
Suitability	<p>This indicator may be particularly suitable for countries with high rates of loss to follow-up, where patient tracking is a priority for retention in care and sustained viral load suppression. It may also be more suitable for countries that are currently transitioning from paper-based to electronic records, or for countries that have prioritized the integration of multiple vertical electronic systems.</p>

Indicator	Number of civil society- and/or community-led service providers accredited by a national quality assurance body to provide community-based health services
Rationale	<p>Relevance: This indicator will tell you about the functionality of the accreditation system, the functionality of UHC/NHI systems, the capacity and depth of community-led organizations to contribute to the response. It will also tell you about financing (Domain 3) since in many countries, accreditation is a pre-requisite for social contracting and/or NHI reimbursements. It tells you about quality service access (Domain 4) since community-led services have been shown to be more effective for reaching certain populations.</p> <p>Significance: As countries move towards UHC, accreditation of community-led service providers is an essential transformation. Accreditation tells you about how formally community-led services are integrated into the national health system.</p> <p>Usefulness: Variations of this metric are used, discussed, or reported on in Mongolia's Sustainability Plan 2020, Dominican Republic's HIV Sustainability and Resilience Strategy 2019-2023, Peru's Action Plan for the Sustainability of HIV and TB 2021-2025, Botswana's Sustainability Roadmap 2023 (developing a "unified CSO management framework"), Jamaica's HIV Sustainability and Transition Plan 2020 (a "new clinician accreditation system"), and is currently tracked by the Thailand (22 CLO sites accredited and receiving reimbursements as of 2023) and the Philippines (56 accredited private providers).</p> <p>Feasibility: Trackable through national health insurance agencies, or MOH.</p>
Suitability	<p>This indicator may be most suitable for countries who are currently implementing, or soon to implement, National Health Insurance, and for whom accreditation of private providers is a key sustainability consideration.</p>

Indicator	Community-led monitoring data is integrated into routine health management information systems and/or national M&E systems
Rationale	<p>Relevance: CLM has been shown to help galvanize political will (Domain 1), improve AAAQ of services (Domain 4), support advocacy for enabling policies (Domain 2) and, in some cases, increase the cost-effectiveness of services (Domain 3). Its integration into national information systems is a good indicator of the interventions' sustainability.</p> <p>Significance: Improving the AAAQ of services has the potential to improve health outcomes and be cost saving. In one CLM project in South Africa, CLM was associated with a 31.5% cost-saving for diagnosing young women living with HIV. A CLM project in Malawi more than doubled viral load suppression (2.34 OR 95% CI 2.16-2.54), contributing to epidemic control.</p> <p>Usefulness: The Global Fund Strategy 2023-2028 pursues the integration of CLM data into national routine program monitoring systems, including HMIS (pg. 33). No country sustainability roadmap includes CLM at this stage, but 17 countries monitor CLM as part of their performance frameworks for Global Fund GC7 grants. A recent (2023) UNAIDS report calls attention to the need for sustainable CLM.⁹³ The Companion Guide to the UNAIDS HIV Response Sustainability Roadmap Primer highlights community-led monitoring as a key program element of the community systems sub-domain.⁹⁴</p> <p>Feasibility: This is a Y/N indicator, so relatively easy to report.</p>
Suitability	This indicator is relevant for countries with mature CLM systems, and possible most relevant for those integrating community feedback mechanisms into UHC.

Indicator	Percentage of adults living with HIV currently receiving antiretroviral therapy who are affected by treatment disruptions
Rationale	<p>Relevance: This indicator is key for service access (Domain 4) as well as other sub-domains of systems capacities (Domain 5), including procurement.</p> <p>Significance: Resilience in the face of external shocks is increasingly important in the context of climate change (modelling data from countries in sub-Saharan Africa show an increase of between 11 million and 16 million HIV cases by 2050 because of increasing temperatures and no reduction in carbon emissions), other pandemics, conflicts, and other threats.</p> <p>Usefulness: This indicator originates from the WHO's operational guidance for the COVID-19 context.⁹⁵ Variations of this metric are used, discussed, or reported on in Namibia's Sustainability Framework for the HIV/AIDS Response 2019 (which aims to minimize treatment defaulting). Issues of environmental threats noted in Mongolia's Sustainability and Transition Readiness Assessment and Work Plan for TB and HIV 2020, and political instability mentioned in Guatemala's National Strategy for Sustainability of the National Response to HIV/AIDS 2019.</p> <p>Feasibility: Countries may use community-led monitoring data to measure this indicator, if available at scale (community data)</p>
Suitability	This indicator may be most suitable for countries that are faced with other pandemics or outbreaks (Cholera, Ebola), experiencing conflict or political violence (war, coups), prone to climate change-related events (droughts, floods, cyclones), or other humanitarian or emergency contexts. The 29 countries classified as challenging operating environments by the Global Fund may find this indicator particularly suitable. ⁹⁶

Indicator	Percentage of crisis affected areas with at least a six-month supply of ARVs and condoms
Rationale	<p>Relevance: This indicator is key for service access (Domain 4) as well as other sub-domains of systems capacities (Domain 5), including procurement.</p> <p>Significance: Resilience in the face of external shocks is increasingly important in the context of climate change (modelling data from countries in sub-Saharan Africa show an increase of between 11 million and 16 million HIV cases by 2050 because of increasing temperatures and no reduction in carbon emissions), other pandemics, conflicts, and other threats.</p> <p>Usefulness: This indicator was recommended by WHO during COVID-19, and it is recommended by UNAIDS as an indicator for Addressing HIV in Humanitarian Settings. Variations of this metric are used, discussed, or reported on in Namibia's Sustainability Framework for the HIV/AIDS Response 2019 (which aims to minimize treatment defaulting). Issues of environmental threats noted in Mongolia's Sustainability and Transition Readiness Assessment and Work Plan for TB and HIV 2020, and political instability mentioned in Guatemala's National Strategy for Sustainability of the National Response to HIV/AIDS 2019.</p> <p>Feasibility: This indicator could be monitored and reported by humanitarian partners, as relevant.</p>
Suitability	<p>This indicator may be most suitable for countries that are faced with other pandemics or outbreaks (Cholera, Ebola), experiencing conflict or political violence (war, coups), prone to climate change-related events (droughts, floods, cyclones), or other humanitarian or emergency contexts. The 29 countries classified as challenging operating environments by the Global Fund may find this indicator particularly suitable.⁹⁷</p>

Indicator	International Health Regulations (IHR) core capacity index
Rationale	<p>Relevance: This indicator covers Domain 1 (Political Leadership), Domain 2 (Enabling Laws and Policies), Domain 3 (Sustainable and Equitable Financing), and other Domain 5 sub-domains. It measures the average percentage of attributes of 13 core capacities: (1) National legislation, policy and financing; (2) Coordination and National Focal Point communications; (3) Surveillance; (4) Response; (5) Preparedness; (6) Risk communication; (7) Human resources; (8) Laboratory; (9) Points of entry; (10) Zoonotic events; (11) Food safety; (12) Chemical events; (13) Radionuclear emergencies.</p> <p>Significance: The IHR core capacities are essential for detecting, assessing, notifying, reporting, and responding to public health risks and events of national and international concern. Low-income and lower middle-income countries can consider prioritizing efforts to improve existing IHR-related policies and mechanisms based on evidence generated through operational and implementation research.⁹⁸</p> <p>Usefulness: This is recommended as a health systems indicator in the WHO's Global Reference List of 100 Core Health Indicators.⁹⁹</p> <p>Feasibility: The data is collected annually (since 2010) and registered and available on the e-SPAR platform (https://extranet.who.int/e-spar). In 2021, WHO received SPAR data from 184 (out of 196) Member States, reflecting 94% of submissions.</p>
Suitability	<p>All countries have committed to measure IHR. It may be particularly useful for to measure the suitability of health systems if HIV-related capacities are sub-optimal.</p>

Indicator	Global Health Security Index (GHSI)
Rationale	<p>Relevance: The GHS Index uses open-source information to establish how each of the 195 International Health Regulations signatory countries meet 85 sub-indicators across six categories. As a composite indicator, this index has many implications for the strength of all Systems sub-domains. Sub sections of the GHSI include prevention (linked to Domain 4) and international commitments (linked to Domain 1). It also has links to Sustainable and Equitable Financing (Domain 3); the 2021 GHSI found that, in the past three years, over 75 percent of countries, including high-income countries, have not allocated domestic funds to strengthen capacity to address epidemic threats.¹⁰⁰</p> <p>Significance: The Global Health Security Index (GHSI) is a new tool that can be used to assess a country's global health security. It has proven an effective measure, as countries with a higher score on the Global Health Security Index had fewer excess deaths from COVID-19.¹⁰¹</p> <p>Usefulness: This indicator originates from the Johns Hopkins Center for Health Security. GHSI scores have been used in Cambodia's GC7 Global Fund funding request for HIV as well as by some countries to create new metrics of health security. For instance, the Ministry of Science, Technology and Innovation in Malaysia used the GHSI to develop a Global COVID-19 Recovery Index (GCI).¹⁰² The GHSI is also recommended by UNAIDS as a data source for understand HIV-related inequalities.¹⁰³</p> <p>Feasibility: Data is publicly available from the Global Health Security Index website, making it easy to track and report.¹⁰⁴</p>
Suitability	<p>Each of the 195 IHR signatory countries may find this indicator useful to track as part of HIV sustainability planning at country level post-2030. However, it may be most suitable for the 112 countries that fall below the average overall score 38.9/100. This provides a logical target for benchmarking, since the index is a comparative analysis among countries.</p>

Annex 1: Illustrative Monitoring and Evaluation Framework for a National HIV Sustainability Roadmap

Domains	Illustrative Goal Areas	Illustrative HIV Sustainability Indicators
Political Leadership	HIV remains on the agenda	Number of HIV Sustainability Working Group meetings convened per year
		Percentage of technical staff on long-term contracts
		Number of non-health policy and strategy documents that include HIV
	The HIV response is country-owned	The extent to which HIV programs are locally owned, led and operated
	Communities engage meaningfully in the response	Number of meetings chaired by PLHIV and/or key populations
		Number of policies or plans with a role for PLHIV/KPs in implementation
Satisfaction of communities with engagement in the HIV response		
Enabling Laws and Policies	The legal, policy and regulatory environment is enabling for ending AIDS	Number of enabling HIV-related policies adopted
		Number of laws that criminalize key populations
	Human rights- and gender-related barriers to HIV services are removed	Percentage of people living with HIV who report experiences of HIV-related discrimination in health-care settings
		Proportion of ever married/partnered women (15-49) who experienced physical or sexual violence from a male intimate partner in the year
		Percentage of people in a key population who report having experienced physical and/or sexual violence in the last 12 months
	HIV-related inequalities are minimized	Ratio of population-level viral load suppression between groups
Ratio b/w populations testing for HIV and receiving results (ever) (%)		
Sustainable and Equitable Financing	The HIV response is adequately funded	Percentage of total HIV resource needs met (all sources)
		Budget execution rate/absorption (public and donor funds)
	The HIV response is not donor-dependent	Domestic investment priority index (DIPI)
		Percentage ARVs funded by domestic resources
		Percentage key populations programs funded by the government
		Percentage of health workers providing core HIV-related services funded by external partners
	Financing mechanisms ensure service access for all	Number of HIV-related services included in NHI benefits package
		Number of community-led organizations accessing social contracting
	Funding sources for the HIV response are diversified	Private sector contribution to the HIV response
	Technical and allocative efficiency is optimized	Number of modelled HIV interventions within a reasonable margin of optimized spending
Whether health professionals other than doctors have the authority to prescribe PrEP and/or ART		
Quality HIV commodities and services are secured at the lowest possible price	Unit cost per person per year on ART	
	Number of HIV commodities procured at international reference prices	
HIV Prevention and Treatment Services and Solutions	Epidemic control is achieved and maintained	HIV incidence-to-mortality ratio (IMR)
		HIV incidence-to-prevalence ratio (IPR)
		HIV incidence
	AIDS is not a public health threat	Percent reductions in new HIV infections compared to a 2010 baseline
		Percent reductions in AIDS-related deaths compared to a 2010 baseline
	People living with HIV receive quality care	Population level viral suppression among all people living with HIV
Systems	HIV and primary healthcare are fully integrated	Percentage of facilities equipped to provide both HIV and PHC services
		Percentage of health facilities reporting readiness to provide both HIV and NCD services
	HIV services are resilient to external shocks (i.e., pandemics, conflict, climate)	Percentage of adults living with HIV currently receiving antiretroviral therapy who are affected by treatment disruptions
		Percentage of treatment sites that had a stock-out of one or more required antiretroviral medicines during a defined period
	The health workforce meets the demand for HIV services	Vacancy rate for critical HIV-related healthcare workers, including community level
HIV services are accessible and acceptable to all	Relative wait times or turnaround times to receive test results	
Strategic information on HIV is accurate and available	Number of health facilities using patient-level electronic HMIS for HIV	

Annex 2: Additional Comprehensive Systems Capacities Metrics Databases

- ▶ [Genesis Analytics \(2023\) Health Metrics Catalogue for Sustainability Planning \(n=1775 metrics\)](#)
- ▶ [Global Fund \(2023\) Resilient and Sustainable Systems for Health Indicators \(n=40 metrics\)](#)
- ▶ [Johnston et al. \(2015\) HIV performance indicators for measuring quality of care in PHC settings \(n=1184 metrics\)](#)
- ▶ [MEASURE \(2017\) Health Systems Strengthening – A Compendium of Indicators \(n=1501 metrics\)](#)
- ▶ [WHO Global Health Observatory Indicator Metadata Registry List \(n=3290 metrics\)](#)
- ▶ [WHO \(2018\) Global Reference List of 100 Core Health Indicators \(plus health-related SDGs\) \(n=100 metrics\)](#)
- ▶ [Health Finance and Governance Project \(2018\) Monitoring health systems strengthening programs: Compendium of indicators \(n=172 metrics\)](#)

Annex 3: References

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- ⁷ CIESAR, IHMA & PATH (2021) Prospective Country Evaluation Guatemala 2021: Extension Report. Online at https://www.healthdata.org/sites/default/files/files/Projects/Global_Fund_PCE/Extension_Report_GTM_Final_rev_august_2021_clean.pdf
- ⁸ For example, the Global Reference List of 100 Core Health Indicators (plus health-related SDGs) https://www.healthdatacollaborative.org/fileadmin/uploads/hdc/Documents/100CoreHealthIndicators/Global_Reference_List_of_100_Core_Health_Indicators.pdf
- ⁹ For example, <https://indicatorregistry.unaids.org/> and <https://data-service.theglobalfund.org/downloads> and <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4586139/bin/pone.0136757.s004.xlsx> and <https://www.hfgproject.org/resources/tools/health-systems-strengthening-indicators/>
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