Deep Dive – Surveillance

Surveillance is the ongoing, systematic collection, analysis, and interpretation of health-related data essential to the planning, implementation, and evaluation of public health practice.

1. Track health and burden of disease metrics (morbidity, mortality, incidence).
2. Detect, report, and investigate notifiable diseases, events, symptoms, and suspected outbreaks or extraordinary occurrences.
3. Continuously collect, collate, and analyze the resulting data.
4. Submit timely and complete reports from the local level to higher levels of the system and back to the community.

Use data to respond quickly and effectively to identify emerging threats and continuously assess and respond to communities’ needs over time.
Surveillance is a component of Adjustment to Population Health Needs
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Adjustment to Population Health Needs

- Innovation & Learning
- Priority Setting
- Surveillance

Innovation & Learning

Priority Setting

Surveillance
What can you learn about Surveillance from the Improvement Strategies?

SECTION 1
What is Surveillance?

What it is: Learn more about the core principles and goals of Surveillance and its role in PHC improvement.

SECTION 2
How do I assess my performance?

What it is: Learn more about some indications that improvements might be relevant in your context and what you can achieve by focusing improvements on Surveillance.

Vital Signs Profile: Use the information in your Vital Signs Profile to help determine relevant areas for improvement.

SECTION 3
How do I get started?

What others have done: Learn from implementation approaches and challenges in other country contexts.

How to succeed: Consider your country context, what elements are not functioning properly, and what needs to be in place to support effective improvements.

What to ask: Use guiding questions to help determine how you might begin to plan and enact reforms in your country context.

Guided by the above considerations and relevant resources, start to build out an improvement plan with your CE lead and/or focal point.
What can my country achieve by focusing on Surveillance?

Goals & Outcomes

- **Enables** a country to collect comprehensive information on population health to inform the planning, implementation, and evaluation of service delivery and public health.

- **Strengthens** a country’s ability to respond to emerging health needs and build resilience.
Surveillance—How do I assess my performance?

Learn more about whether you should focus on Surveillance in the Vital Signs Profile.
How do I assess my performance?

Use the information in the Vital Signs Profile to help determine relevant areas of improvement.
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**Measure 6:** Surveillance

**Measure 7:** Priority Setting

**Measure 8:** Innovation and Learning

**Governance**

- 4.0

**Inputs**

- 2.3

**Population Health & Facility Management**

- 1.7
What are other indications that Surveillance might be an appropriate area of focus?

### Other Indications

The functions of an effective surveillance (listed below) are poorly functioning or not in place in your country’s surveillance system:

- **Track** health and burden of disease metrics (morbidity, mortality, incidence)
- **Detect**, report, and investigate notifiable disease, events, symptoms, and suspected outbreaks or extraordinary occurrences
- **Continuously collect, collate, and analyze** the resulting data
- **Submit** timely and complete reports from local to higher levels of the system and from higher levels of the system back to lower/community level.
Learn more about the core principles of Surveillance and what you can achieve by focusing improvements in the What it is section.
What is Surveillance?

Surveillance is the ongoing and systematic collection, analysis, and interpretation of health-related data essential to the planning, implementation, and evaluation of service delivery and public health.

Strong surveillance systems are dynamic, multimodal networks that combine monitoring and response activities to enable a country to identify and respond to emerging and existing threats and continuously assess and respond to need.
What is Surveillance?

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**Why it’s important**

- **Identify and respond to health threats**
  Allows health systems to collect data on the incidence of communicable diseases of public health significance and subsequent notification of emergency response systems.

- **Prevent disease outbreaks**
  Surveillance supports prevention of outbreaks through its routine data collection, tracking, and reporting functions.

- **Respond to community needs**
  When integrated into existing information and communication channels, including at the service delivery level, surveillance feedback loops help to support effective response at all levels of the health system.
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**Key steps and considerations**

- **Determine priorities** at the national and subnational level by reviewing disease control priorities and identifying which health conditions and diseases should be closely monitored and how.

- **Integrate identified priorities into a national plan** to improve the core functions of surveillance, including setting a public health emergency plan.

- **Utilize information systems** to establish feedback loops for communication between the national and community level.
Visual aid: Surveillance

Surveillance

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Deeper dive: Different types of Surveillance

**Surveillance** systems must be equipped to track a broad spectrum of communicable and noncommunicable diseases to meet global targets and ensure comprehensive disease surveillance. There are three types of surveillance that are essential for strong PHC:

- **Indicator-based surveillance**: Systemic collection, monitoring, analysis and interpretation of data produced by formal or traditional information sources, including official sources in direct contact with events such as primary care facilities, hospitals, and clinicians.

- **Event-based surveillance**: Organized and rapid collection, monitoring, assessment and interpretation of mostly ad-hoc information about events that pose a potential risk to public health, typically from informal crowd-sourced sources.

- **Syndromic surveillance**: Detects outbreaks earlier than traditional methods using both clinical and alternative data sources such as care-seeking rates, insurance claims, laboratory ordering volume, school and work absenteeism, over-the-counter drug sales, and internet-based health searches to focus on the early symptom period of a disease.
Surveillance – How do I get started?

Derive information from **What others have done**, **What to ask** and **How to succeed** to help determine where and how you might begin to plan and enact forms in your country context.
Planning for improvement in your context

The guidance and recommendations described within the Surveillance module are not intended to provide a one-size-fits-all solution.

The considerations involved in planning and implementing strategies will depend on your local context.

Sample activities

- **Consider** implementation challenges and approaches in other country contexts
- **Understand** how the features of your health system, such as how decisions get made and the role of the private sector, will impact your improvement plans
- **Identify** key elements that need to be in place to support improvements
- **Use** the guiding questions in the Improvement Strategies to spur thinking about Surveillance in your country context and stimulate ideas for improvement
- **Start** to develop an improvement plan
Planning for improvement in your context

While the specific considerations involved in planning and implementing strategies will depend on your context, you might consider:

- **What are the enabling factors for a strong surveillance system?**
  - Workforce development
  - Facility infrastructure
  - Communication and coordination
  - Trust between stakeholders

- **How are surveillance priorities determined?**
  - Disease impact on morbidity, mortality, and disability
  - Epidemic potential
  - Disease targets in existing national, regional, or international control plans
  - Public health action as a result of this priority data
Learn from what others have done

Community Based Surveillance | Multiple Countries
Utilizing community health workers to strengthen surveillance

Integrated Disease Surveillance and Response | Afro Region
Implementation of a comprehensive health surveillance system
Multiple Countries: At-a-glance context

Nepal
South Asia | Low Income
29.3M | 81% Rural

Malawi
Sub-Saharan Africa | Low Income
18.6M | 83% Rural

Kenya
Sub-Saharan Africa | Lower-Middle Income
49.7M | 73% Rural
Learn from what others have done: Nepal, Malawi, and Kenya

Rationale and approach

• A number of countries have used community-based or crowd-sourced data to complement traditional facility-based data used in surveillance systems.

• Community health workers (CHWs) offer a promising platform for strengthening community-based surveillance systems in rural, resource-constrained settings.
  
  • CHWs collect data as a part of their routine course of care, often utilizing technology such as mobile phones.
  
  • Nepal, Malawi, and Kenya implemented CHW-based surveillance to improve the quality and timeliness of data collection for population health and public health events.
Learn from what others have done: Nepal, Malawi, and Kenya

Strengths

- **Supplements** data collected at local facilities and support surveillance activities
- **Aids** real-time decision-making response to population health needs
- **Informs** resource allocation at the local and policy-making level
Learn from what others have done: Nepal, Malawi, and Kenya

The efficacy of this model has relied on factors that affect data validity, reliability, and quality, including:

- Local participation
- Well-trained and supervised CHWs capable of conducting surveillance activities
- Ongoing support and quality improvement training
- Supplemental data sources to account for the need for routine data collection that CHW-based surveillance may not provide
Learn from what others have done: AFRO Region

Why reforms were needed

- Countries across the WHO Africa Region (WHO-AFRO) experienced outbreaks of largely preventable diseases including yellow fever, cholera, and Ebola in the 1990s

- Outbreaks had significant death tolls and affected biosecurity in the region.

Approach

In partnership with WHO, ministries of health from the AFRO region developed systems with a robust capacity to detect, confirm, and respond to public health events in a timely and reliable fashion.

They adopted what is now known as the Integrated Disease Surveillance and Response (IDSR) strategy which aims to develop and implement integrated, comprehensive surveillance and response systems that meet African priorities and improve data collection and use at each level of the health system.
Learn from what others have done: IDRS strategy

• The IDSR has since been adopted by 43 out of 46 African countries in the WHO-AFRO region.

• Each country’s national IDSR strategy defines its disease priorities, administrative processes, and the roles and responsibilities of key partners and stakeholders at every level of the health system (in both the private and public sector).

• Aligns with IHR requirements, priority health threats to include priority diseases, syndromes, conditions, and events of international concern and encourages the integration of both traditional indicator-based and event-based surveillance.
Learn from what others have done: IDRS Strategy

- **Targeted approach:** The strategy is adapted by each country while ensuring that surveillance processes comply with global recommendations for control and response.

- **Coordinated and comprehensive:** Data from national disease reporting systems in the public and private sector is used as the IDSR strategy coordinates multiple disease surveillance activities and strengthens the ability of the system to capture a comprehensive range of information on population health needs and events of public health significance.
What elements should be in place to support effective improvements in Surveillance?

**System**
- Governance & Leadership
- Primary Health Care Policies
- Quality Management Infrastructure
- Social Accountability
- Health Financing
  - Payment Systems
  - Spending on Primary Health Care
  - Financial Coverage
- Adjustment to Population Health Needs
  - Surveillance
  - Priority Setting
  - Innovation & Learning

**Inputs**
- Drugs & Supplies
- Facility Infrastructure
- Information Systems
- Workforce
- Funds

**Service Delivery**
- Population Health Management
  - Local Priority Setting
- Community Engagement
- Empowerment
- Proactive Population Outreach
- Facility Organization & Management
  - Team-based Care Organization
  - Facility Management Capability & Leadership
- Information Systems Use
  - Performance Measurement & Management

**Outputs**
- Access
  - Financial
  - Geographic
  - Timeliness
- Availability of Effective PHC Services
  - Provider Availability
  - Provider Competence
  - Provider Motivation
  - Patient-provider Respect & Trust
  - Safety
- High Quality Primary Health Care
  - First Contact
  - Accessibility
  - Continuity
  - Comprehensiveness
  - Coordination
  - Person-centered
- Effective Service Coverage
  - Health Promotion
  - Disease Prevention
  - RMNCH
  - Childhood Illness
  - Infectious Disease
  - NCDs & Mental Health
  - Palliative Care

**Outcomes**
- Health Status
- Responsiveness to People
- Equity
- Efficiency
- Resilience of Health Systems

Social Determinants & Context (Political, Social, Demographic & Socioeconomic)
What elements should be in place to support effective improvements in Surveillance?

Lessons learned from past health threats or simulations should be integrated into the review of national plans for continuous strengthening of the health system. Together, innovation and learning and surveillance enhance a country’s ability to identify and respond to emerging and existing threats and continuously assess and respond to communities’ needs over time.
The coordinated collection and use of high-quality data at all levels of the health system relies on the presence and functionality of information systems with a built-in capacity for rapid detection and response. To be of optimal use, information systems must produce reliable, complete, and timely information that ensures interoperability from a wide range of data sources and interconnectedness across all levels of the health system.
To capture relevant and up-to-date information, surveillance systems must be able to continuously collect and track information from formal as well as informal sources. Surveillance systems that leverage approaches to enhance access and public trust in service delivery, including proactive population outreach and community engagement, gather more accurate data and strengthen the capacity of the health system to effectively monitor and respond to health needs in emergencies and over time.
What elements should be in place to support effective improvements in Surveillance?

Strengthening surveillance response at all levels of the health system relies on the long-term financial and political commitment of human, financial, and material tools and resources and establishment of a strategic plan of action to monitor and respond to the most important population health needs.
The specific considerations involved in planning and implementing strategies will depend on your local context.

The questions listed may be a useful starting place to determine how you might begin to plan and enact reforms in your context.

Sample questions

☐ How comprehensive is your surveillance system?
Questions to ask to help you get started

The specific considerations involved in planning and implementing strategies will depend on your local context.

The questions listed may be a useful starting place to determine how you might begin to plan and enact reforms in your context.

Sample questions

- How comprehensive is your surveillance system?
- How are reports made and how reliable are these reports?
Questions to ask to help you get started

The specific considerations involved in planning and implementing strategies will depend on your local context.

The questions listed may be a useful starting place to determine how you might begin to plan and enact reforms in your context.

Sample questions

☐ How comprehensive is your surveillance system?

☐ How are reports made and how reliable are these reports?

☐ How reliably and successfully have follow-up investigations been made?
Questions to ask to help you get started

The specific considerations involved in planning and implementing strategies will depend on your local context.

The questions listed may be a useful starting place to determine how you might begin to plan and enact reforms in your context.

Sample questions

☐ How comprehensive is your surveillance system?

☐ How are reports made and how reliable are these reports?

☐ How reliably and successfully have follow-up investigations been made?

☐ What feedback loops are in place?
Recap: Surveillance

System

Governance & Leadership
  - Primary Health Care Policies
  - Quality Management Infrastructure
  - Social Accountability

Health Financing
  - Payment Systems
  - Spending on Primary Health Care
  - Financial Coverage

Adjustment to Population Health Needs
  - Surveillance
  - Priority Setting
  - Innovation & Learning

Inputs

Drugs & Supplies
Facility Infrastructure
Information Systems
Workforce
Funds

Population Health Management
  - Local Priority Setting
  - Community Engagement
  - Empanelment
  - Proactive Population Outreach

Facility Organization & Management
  - Team-based Care Organization
  - Facility Management
  - Capability & Leadership
  - Information Systems Use
  - Performance Measurement & Management Outreach

Service Delivery

Access
  - Financial
  - Geographic
  - Timeliness

High Quality Primary Health Care
  - First Contact
  - Accessibility
  - Continuity
  - Comprehensiveness
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Availability of Effective PHC Services
  - Provider Availability
  - Provider Competence
  - Provider Motivation
  - Patient-provider Respect & Trust
  - Safety

Outputs

Effective Service Coverage
  - Health Promotion
  - Disease Prevention
  - RMNCH
  - Childhood Illness
  - Infectious Disease
  - NCDs & Mental Health
  - Palliative Care

Health Status
  - Responsiveness to People

Equity
  - Efficiency

Resilience of Health Systems

Social Determinants & Context (Political, Social, Demographic & Socioeconomic)
Recap: Surveillance

Adjustment to Population Health Needs Includes...

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