

Part One: Introduction

Introduction

1. WHAT ARE THE OBJECTIVES OF THE HIS?

The role of a Health Information System (HIS) is to generate, analyse and disseminate health data. This is a continuous activity, conducted regularly and closely linked to public-health decision making and the implementation of programme activities.

The objectives of the HIS are described below. They form the basis for classifying each indicator in the system. Detailed aims can be further elaborated according to programme needs and priorities within each country.

OBJECTIVE 1. RAPIDLY DETECT AND RESPOND TO HEALTH PROBLEMS AND EPIDEMICS

Early detection of suspected disease outbreaks and the initiation of timely and effective response efforts can have a major impact in reducing the numbers of cases and deaths during an outbreak.

To ensure that each health agency is rapidly alerted to a suspected outbreak, it is necessary to set up an early warning and response system (EWARS) from the onset of an emergency. As soon as the situation permits this function should be integrated within the broader objectives of an HIS. This is one of the most immediate and specialised functions of the HIS and is discussed as a separate sub-module (see Module 3 Part 2: Outbreak Alert and Response).

OBJECTIVE 2. MONITOR TRENDS IN HEALTH STATUS AND CONTINUALLY ADDRESS HEALTH-CARE PRIORITIES

Monitoring health status allows health managers to observe trends in the health profile of a population, detect the emergence of new health problems and continually address public health priorities. This is closely integrated with timely dissemination and sharing of information with field partners, UN agencies, Ministries of Health (MoH) and donors.

Mortality data are collected from health facilities, community health programmes, and referral hospitals. Morbidity data on injuries, health conditions and diseases are collected from health facilities providing outpatient services, inpatient wards, nutrition centres, mother-child health (MCH) clinics, and community health workers. Age, sex and cause-specific data allow planners to identify priority areas and groups within the population and determine whether programmes are equitable and resources effectively allocated (see Objective 4).

OBJECTIVE 3. EVALUATE THE EFFECTIVENESS OF INTERVENTIONS AND SERVICE COVERAGE

The availability and use of health services are important measures of health system performance. Monitoring of consultation data allows health planners to gauge demand for health care services within the population and therefore examine issues of accessibility and burden of care placed upon individual health providers.

If the utilisation rate is lower than expected, it may indicate inadequate access to health facilities (e.g. due to insecurity or poor capacity of health services). If the rate is higher, it may suggest over-utilisation due to a specific public health problem (e.g. infectious disease outbreak) or under-estimation of the target population. In analysing utilisation rates, consideration should also be given to age and sex to ensure that vulnerable groups are not under-represented (see Objective 4).

Coverage is calculated in relation to a target population, defined at the start of the programme. It can be affected by the acceptability of the programme, location of delivery points, security for staff and those requiring treatment, waiting times, service quality and the extent of home visiting. It is important to triangulate this information with relevant indicators calculated in periodic surveys, for example prevalence of acute malnutrition and vaccination coverage.

The HIS also allows health planners to monitor the impact of specific health interventions, by comparing health indicators in the population before and after the intervention was started. For example, monitoring a reduction in malaria incidence after implementation of vector control programme, or increase in vaccination coverage after a targeted community campaign.

OBJECTIVE 4. ENSURE THAT RESOURCES ARE CORRECTLY TARGETED TO THE AREAS AND GROUPS OF GREATEST NEED

Observing for health inequities in coverage, use of services, and health outcomes are important functions of the HIS. Key stratifiers such as age, sex, refugee or host national status, and geographical location are used to describe trends and grant visibility to vulnerable groups. Special efforts should be made to ensure balanced male and female representation across all health services and to explore possible barriers to service use where a gender imbalance is observed.

Appropriate disaggregation is also important to prioritise high-risk groups within specific health programmes. For example, the under 18 age group is given particular attention within Reproductive Health and HIV/AIDS programmes to emphasise the unique reproductive and sexual health needs of young people.

Special consideration is also given to the disaggregation of refugee and host national data. Where refugee health services are accessible to the local population, records of proportional service utilisation are important to track the degree of acceptance and accessibility of health interventions. This data can serve an important advocacy role with the local health authorities, enhance refugee-host community relations and provide important contributions to numerators such as consultation rates, bed occupancy, and drugs and usage of other consumables.

The use of host national data is often limited, however, by the inability to obtain accurate population estimates. The poor coverage of services among host populations and lack of reliable or representative numerator data further impairs the utility of host data within the information system.

OBJECTIVE 5. EVALUATE THE QUALITY OF HEALTH INTERVENTIONS

Health programmes should continually monitor service quality through measures of community participation, programme acceptability (e.g. the rate of defaulting) and programme coverage. Rates of hospitalisation, outpatient service utilisation and admission and discharge can also provide useful indicators of the appropriateness of health seeking behaviour in a community and provide a measure of the capacity of the health service to respond to needs in terms of time and quality of care at the point of delivery.

Default rates can be high when a programme is not accessible to the population. Accessibility may be affected by the distance of the treatment point from the community, a lack of security, the level of support offered to the care giver of the individual treated, the number of care givers who are left at home to look after other dependants, and the quality of the care provided. Individual causes of readmission, defaulting and failure to recover should be investigated on an ongoing basis.

2. WHAT ARE THE CONTENTS OF THE HIS?

The monitoring requirements of any health programme need to reflect the primary health care model upon which services are planned, organised and delivered. The HIS contains ten modules, which correspond to the core components of primary health care (see list below).

Different levels of primary health care are achievable in the emergency and post-emergency phases of refugee operations. Different operational strategies and approaches are therefore required, depending on the humanitarian context and the assessed public health priorities on the ground. The configuration of the information system should be customised to reflect these differences and should be aligned with the range of services provided by each partner.

> HIS Technical Sections

The following ten sections comprise the HIS. These are based upon the core elements of primary health care:

1. Population
2. Mortality
3. Morbidity
4. Inpatient and Referral
5. Laboratory
6. Disease Control
7. EPI (including Growth Monitoring, Vitamin A and Tetanus Toxoid)
8. Nutrition
9. Reproductive Health
10. HIV/AIDS

* the numbering is consistent with the Module numbers in Part 2 of this Manual, and in the printed and electronic materials used throughout the system.

Within each technical section, the contents of the HIS can be grouped under three core pillars:

- 2.1 Standards and Indicators
- 2.2 Tools and Guidelines
- 2.3 Coordination and Support

2.1 STANDARDS AND INDICATORS

Indicators are defined as variables that can be repeated over time to track progress toward the achievement of objectives (see Section 1 above). A corresponding standard is used to establish the minimum acceptable level of achievement for each indicator.

Indicators represent the starting and the end points in HIS design. They determine the data that needs to be collected, the layout and format of the information sources, and govern how the data will be handled, interpreted and used to direct public health practice.

Health systems which do not utilise the same health indicators are not standardised, and neither is the health information that they generate. Consequently, the data produced by non-standardised health systems is often incomplete, cannot be aggregated and are unsuitable for assessing a situation.

2.1.1 Indicator Selection

The starting point in the standardisation process of the HIS is to build consensus around a core set of indicators and standards. From this list, a set of uniform tools can be developed along with normative guidance for the correct use and application in the field.

The process of indicator selection is not easy. Each indicator should be technically valid, simple and measurable. Furthermore, the development and introduction of new (or revised) policies at country and organisational level will open up new areas for monitoring and implementation at field level and these need to be continually appraised and taken into consideration. The current indicator list has been defined in consultation with field partners and with reference to accepted normative guidance (including UNHCR Minimum Standards and Indicators and the SPHERE Project).

A comprehensive description of the data needed for calculation of each is provided in this Manual and the accompanying Standard and Indicator Guide. This includes the intended use, numerator and denominator, units of expression, sources and methods and data collection, staff involved, timing (periodicity of measurement) and limitations. The choice of indicators will undergo periodic refinement and adaptation, under the coordination and leadership of UNHCR, and based on testing and use in the field.

2.1.2 Standard Selection

Standards should be adapted to the specific setting in which they are used and be based on empirical evidence from each operation. In the absence of country-specific data, international or UNHCR standards have been inserted against selected indicators. After further evaluation and review, it is anticipated that these standards will be modified and refined to develop a core set of

country-specific values in each location. For indicators that currently have no reference standard, this process will also permit empirical standards to be derived in later HIS versions.

A summary of each indicator is provided at the end of each module (see Indicator Summary boxes). A comprehensive listing is also provided in the Standard and Indicator Guide which accompanies this Manual.

2.2 TOOLS AND GUIDELINES

Common tools and methods of collection are crucial to ensure that the data generated within the HIS is standardised and of good quality. When utilised in a systematic and coordinated fashion by all health partners, these resources help to ensure that indicators are comparable across camps, and achieve compatible degrees of aggregation.

Part 2 of the Manual describes each tool in detail and gives instructions to promote sound data collection, management and reporting practices in each health partner. Each section is introduced under the following sub-headings:



2.2.1 What are the tools used for data collection?

This sub-heading introduces the tools required for data collection within each technical section. Each tool is classified according to whether it is a direct source for reporting (Primary Tool) or if it is mainly used to support clinical decision-making and service quality (Secondary Tool).

The list of primary and secondary tools is not intended to be exhaustive. Other data sources and forms of reporting may need to be maintained alongside the HIS, according to the needs of each organisation.



2.2.2 Who is responsible for collecting the data?

The health personnel responsible for collecting and reporting daily and weekly information within each technical section are described under this sub-heading. The health staff should be provided copies of each Illustrated Guide which is relevant to their function, and translated into the appropriate language.



2.2.3 What data should be collected and how?

This sub-heading describes what data is required and provides guidance on how each tool should be correctly used to record the data, accurately and reliably, each day.

- **Illustrated Guides** show how the data in each primary tool should be recorded and summarise important guidance notes from the supporting text. Emphasis is placed on procedures that are standardised among all health partners and adhered to by all health providers at the point of data collection.
- **Secondary Tools** boxes describe other important data sources that are required in each section, but are not used to directly report information each week.
- **Country Considerations** boxes are used to describe the priority issues that need to be anticipated during adaptation and standardisation of the HIS prior to deployment in each country.



2.2.4 How and when should the data be reported?

A description of how daily data should be compiled and reported at the end of each week and month is given under this heading. As a Primary tool, each HIS reporting form has a corresponding Illustrated Guide at the end of the respective module. More details on the periodicity of information reporting are given below (see 3.2: Periodicity of Reporting).



2.2.5 How should the data be interpreted and used?

An Indicator List is provided at the end of each module. Each indicator is classified according to the five core objectives of the HIS (see above). A comprehensive listing is also provided in the Standards and Indicators Guide which accompanies this Manual. Exercise work on the applied use of indicators, using case studies and sample data, is given on the accompanying CD-ROM.

2.3 COORDINATION AND SUPPORT

The resources, supervision, and monitoring inputs of various stakeholders provide the cohesion required within the HIS. Parallel and conflicting data collection activities are not only wasteful, but place a heavy burden on frontline health providers. This often undermines the quality of care, as staff are required to divert attention from patient care to the duplicative and chaotic systems of data recording. Strong coordination and supervision - at all levels of health care management - are essential to the effective functioning of the HIS. The respective roles of each partner in this regard are described below (see 3.3: Partners in Health Information).

3. HOW DOES THE HIS OPERATE?

The core pillars of the HIS described above are unable to operate alone. Each must work within a common framework which clearly defines:

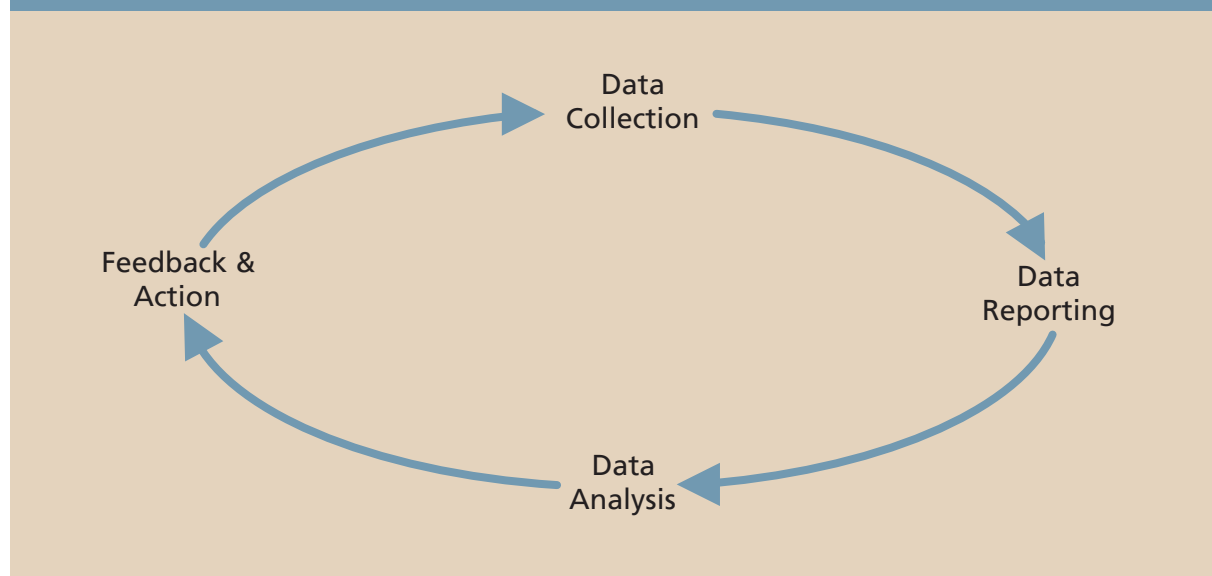
- 3.1 How the data should be managed (The Data Cycle);
- 3.2 When to monitor (Periodicity of Monitoring);
- 3.3 Who is involved in monitoring and their respective roles (Partners in Health Information).

3.1 THE DATA CYCLE

The data cycle governs the flow of information within the HIS and provides a visual summary of the key stages of data management (see Figure 1). The demand for, and supply of, data vary at different levels of the health system. Each should be viewed according to the different frequencies of monitoring, different volumes of information, different stakeholders in health management; and ultimately different uses of the information.

- At the level of *individuals and communities*, information is needed for effective clinical management and for assessing the extent to which services are meeting the needs and demands of communities;
- At the level of *health partners and UN agencies*, health information enables health planners and managers to take decisions regarding the effective functioning of health services and the targeting of resources;
- At higher levels, such as *agency headquarters, donors and Ministries of Health*, information is needed for strategic policy-making, advocacy and resource mobilisation.

Figure 1 The Data Cycle



Although the data requirements for patient care, system management and policy-making are somewhat different, they are also linked along a continuum. This implies that not everything needs to be known at every level in a system. The quantity and detail of data needed is generally greater at lower levels in the system, where decisions on the care of individuals are made, than at higher levels where broader policy-making takes place.

Data collection and reporting are described in Part 2 of the Manual, alongside detailed guidelines and tools required in each technical area. Data analysis and interpretation is practiced at the end of each module, using exercise work on the accompanying CD-ROM.

Data feedback and use is integral to completing the data cycle and ensuring that the information is translated into public health practice and measurable impacts in the health status of the population. Too often, lower level managers are required to report vast quantities of data to higher levels but rarely receive any feedback. At the same time, the information overload at higher levels is such that the data are in practice seldom used effectively. The importance of feedback to each information partner, at each frequency of monitoring, is described below (see 3.3: Partners In Health Information).

3.2 PERIODICITY OF MONITORING

The frequency of monitoring (daily, weekly, monthly) is closely linked with the question of responsibility. At each level, the data is used for different purposes, undergoes different levels of aggregation and analysis, and involves different stakeholders.

3.2.1 Daily

The day-to-day recording of data underpins the entire information system. Errors at this level will be transmitted throughout all levels of reporting and render indicators unreliable and uninterpretable. It is important for responsibility is assigned to named health personnel, who are familiar within their respective roles and understand how to record information accurately and reliably.

Front-line health staff should receive continuous and regular supervision from line managers, particularly during the cycles of collection and reporting that occur immediately after deployment of the new system.

3.2.2 Weekly

The HIS is founded on the basis of weekly monitoring and each health section collects and reports data in its entirety each week. The advantages of this system are three fold:

> Efficiency

Weekly reporting is a more reliable and time-efficient means of monitoring. It reduces the volume of data that needs to be handled and reviewed at each reporting interval, and thereby minimises preventable errors that result from the manual screening of large number of tally sheets and register entries each month.

> Quality

Weekly reports introduce a further level in the system that can be audited for quality control. Line managers are provided regular opportunities to review reports generated during a reporting month, and to identify and correct data errors and outliers, prior to aggregation in the monthly report.

> Outbreak Alert

Weekly reporting is integral to the early warning function of the HIS. Alert thresholds are designed to be monitored weekly in each facility, and demand the complete and timely submission of morbidity reports each week (for more details see Module 3 Part 2: Outbreak Alert and Response).

3.2.3 Monthly

Monthly reports are aggregates of complete reporting weeks, which consist of 4 or 5 weekly reports depending on the reporting calendar (see Country Considerations: What are the dates of reporting?). Monthly reports often offer the first opportunity for indicator analysis and interpretation for the period in question. They should be reviewed closely by health managers of each health partner and submitted to UNHCR within a pre-agreed number of days from the close of the reporting period.

3.2.4 Other

Health partners require the capacity to monitor health programme objectives over long periods of time. This is important to obtain average trends in data, which are not skewed by outliers or temporal changes, to derive baseline information for standards and alert thresholds, and to calculate unstable indicators (such as maternal mortality and crude birth rate) which need to be monitored over long periods before they can be reliably interpreted and used.

The HIS database allows health partners to further store and manage monthly reports, and generate aggregated analyses over time. The most common requirements of agencies and donors include

quarterly, biannual, and annual reports. More information on data management is provided in Part 3 of the Manual.



> Country Considerations

What are the dates of reporting?

A reporting calendar is essential to the functioning of the HIS. It should be standardised among all health information partners, at all levels of health management. Copies should be distributed throughout the camps and easily visible to all staff.

This calendar should specify the dates on which each week begins and ends. * The last day of the week represents the date on which daily information sources (daily sheets and registers) should be compiled and reported into a Weekly Report Form.

Monthly reports are generated as aggregates of complete reporting weeks, which will consist of 4 or 5 weekly reports depending on the month.

The system of weekly reporting has implications for the submission of the monthly reports, as the aggregated reporting weeks are not compatible with the regular calendar month. Often the first day of the first reporting week does not correspond to the first day of the calendar month. The same applies to the last days of a reporting week and calendar month.

The date of submission of the monthly report should be a fixed number of days after the close of the reporting period. This should reflect the amount of time required to aggregate and validate the weekly figures, and often does not need to be more than 4 to 5 days

The corresponding date on which the report is made available to UNHCR should be shared with all health information partners. As this no longer follows fixed calendar dates, it is vital that changes are shared and understood prior to the start of the HIS.

* Note these do not necessarily have to follow the regular Sunday - Saturday week. Due consideration should be given to the time required for staff to assimilate and report data at the end of a week. This often requires the week to close on a Friday in order for reports to be written and submitted after a weekend.

3.3 PARTNERS IN HEALTH INFORMATION

3.3.1 Refugees

The sharing of information and knowledge among all those involved in health service provision, including health care beneficiaries, is fundamental to achieving comprehensive solutions to health problems and providing fully coordinated assistance.

Refugees can be involved in health services in different ways: for example through participation in social mobilisation; providing key health information messages through a community education programme; early reporting of suspect cases of illness; house-to-house case detection and surveys; registration and support at health events (vaccinations, vitamin A supplementation, condom distribution, etc.).

Documenting the results of HIS analysis in appropriate language and media, and dissemination to refugee leaders and community representatives, can greatly contribute to a broader understanding of the public health issues and can assist in the development of effective health promotion and prevention strategies.

3.3.2 Implementing Partners

At the camp level, front-line health workers and their immediate supervisors play critical roles in collecting and feeding information into the data cycle. Information at this level has immediate, operational use and is needed for effective clinical management and for assessing the extent to which services are meeting the needs and demands of individuals and communities.

Staff at this level in the system are also the implementers of any change in public health policy and practice that is identified through analysis of indicators. It is essential that health workers are provided with proper training and skills and understand how to collect and report data in the HIS.

At field office and headquarters level, health agencies have an obligation to train staff to ensure that their knowledge is up-to-date. Training and supervision will be especially high priorities when the new system is first introduced and intense schedules of monitoring visits are recommended during the early cycles of data collection and when the tools and guidelines first enter into use. Printed hardcopies of the monthly reports should be taken back to the health units to demonstrate the uses of the information and translation into indicators and weekly forms should regularly be appraised and verified in the presence of health staff, to point out inconsistencies and avoidable sources of error. More details on data validation and data handling and management is provided in Part 3.

3.3.3 UNHCR

UNHCR is the designated coordinating health agency in refugee operations and has responsibility for organising and overseeing the management of the HIS. Health agencies are required to submit HIS reports to UNHCR on at least a monthly basis, though this can be more frequent depending on the stage of the emergency or presence of public health priorities at the time.

A regular HIS report, including analysis and interpretation of the data, should be produced by the HIS coordinating agency and shared with all relevant agencies, decision-makers and the community. The frequency of the report will vary according to the context, but in most cases will be monthly.

3.3.4 Ministries of Health

The reporting requirements of national Ministries of Health (MoH) are of paramount importance to the definition of HIS indicators in individual countries. In many countries, health agencies are obligated to report to local health authorities where refugee camps are based.

Government policies and systems of reporting therefore need to be taken into consideration during all stages of system adaptation and deployment. The Country Considerations boxes reflect the different country-specific requirements which should be factored into the adaptation of the HIS at country level.

3.3.5 Donors

The reporting requirements of donors often has a positive impact on the ability of implementing partners to monitor and evaluate donor-funded programmes. However, where there is variance between the requirements of different funding agencies, this can place a tremendous burden of work on field staff and contribute to disorganized and inefficient reporting. The HIS places great importance on coordinating with donors and seeking consensus on a core collection of Standards and Indicators for monitoring refugee programmes worldwide.

