



# Collection of Data

**Foundational Curriculum:  
Cluster 8: Data**

**Module 14: Collection of Data and Knowledge Management including  
Medical Coding and Terminology Concepts**

**Unit 1: Collection of Data  
FC-C8M14U1**

Curriculum Developers: Angelique Blake, Rachelle Blake, Pauliina Hulkkonen, Sonja Huotari, Milla Jauhiainen, Johanna Tolonen, and Alpo Värri

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# Unit Objectives



- Describe data collection in healthcare
- Identify techniques for collecting health and health care data obtained by survey, qualitative, or mixed methods
- Identify methods and types of data collected in healthcare
- Identify health record data collection tools (such as master patient index, registries, demographics input screens, document templates)
- List methods to gather internal and external health information and data
- Describe the concepts of collecting and storing data and information correctly to assure the quality of data and information in a health context
- Describe the differences between health data and health information



# Data Collection in Healthcare

- **Data collection** is defined as the ongoing systematic collection, analysis, and interpretation of health data necessary for designing, implementing, and evaluating public health prevention programs
- Data collection includes creating and maintaining a centralized record-keeping system; standardizing the data collected; obtaining data from local agencies, healthcare providers and other sources; assuring data completeness; providing availability of back-ups to the datasets; as well as translating, cleaning, and comparing data within and across organizations, regions and areas
- Health care involves a diverse set of public and private data collection systems, including health surveys, administrative enrolment, health records and billing records, used by various entities including government entities, hospitals, clinics and community health centers, physicians, and health plans





# Data Collection in Healthcare



- Healthcare professionals collect various types of data during ongoing patient care but also for research. Data collection requires a consent from the patient, and research studies require an individual consent. Some basic types of data are:
  - Electronic health records which are generally not available for outside researchers
  - Administrative data
  - Claims data
  - Patient / Disease registries
  - Health surveys
  - Clinical trials data. Clinical trials are registered to databases to collect information about new research studies



# Healthcare Data Collection



Healthcare data can be collected with various techniques, including:

- **Surveys** – the patients are asked to fill in a survey about their general health, living habits or more specific health issue
  - Statistical data can be produced from the answers, using, for example, **graded answers**: levels of agreement, such as completely disagree, mildly disagree, not sure, agree, and completely agree
- **Qualitative methods** – These include quality measures, safety data, and other areas that show the value of the data
- **Quantitative methods** – These include statistics about number of patients using a certain service, the number of diagnoses, measurement results and so on.
- **Mixed methods** – Combines the collection and analysis of both qualitative and quantitative methods in the same study and ensuring that both requirements are fulfilled for example in sample size and population





# Health record data collection tools

- **Master patient index** is a database that holds a unique index for each patient registered at a health care organization
- **Patient registries** maintain standardized information about patients who share a same condition or experience
- **Demographics input screens**
- **Document templates**





# Registries

- A **registry** is a collection of health data provided voluntarily by individuals, usually focused around a specific diagnosis or condition. Registries can be sponsored by a government agency, nonprofit organization, health care facility, or private company
- Various registries of health information are collected mainly for public health purposes
- Registries can contain information about epidemiology, vaccinations, mortality, or environmental hazards such as toxic chemicals
- Information about certain controlled diseases are collected from electronic health records to an epidemiological registry which is monitored by public health authorities
- If an outbreak of certain diseases is recognized in such a registry, the public health authorities can begin interventions
- The security of the data in such registries must be guaranteed carefully to protect the individuals whose data is stored there



# Internal and External Health Information Collection



- If you would like to collect data from previously collected databases: check studies or national information
- Collect inpatient information from your organization according to a pre-defined research plan
- Public health collects data from all healthcare facilities to produce big datasets and to make national statistics of public health issues





# Technology to help to record and collect data and knowledge

- Electronic storage systems help to integrate data from different sources and make data available in several physical places at once
- Electronic storage is also more compact than paper records when considering physical storage space





# Data and Information in a Health Context



Good Data and Information in a Health Context are:

- Accurate
- Contemporaneous
- Free from duplication
  - e.g. where two or more different records exist for the same patient
- Free from confusion
  - e.g. where different parts of a patient's record are held in different places, possibly in different formats, any fields that refer to the same entity need to be the same in each location and be maintained synchronously

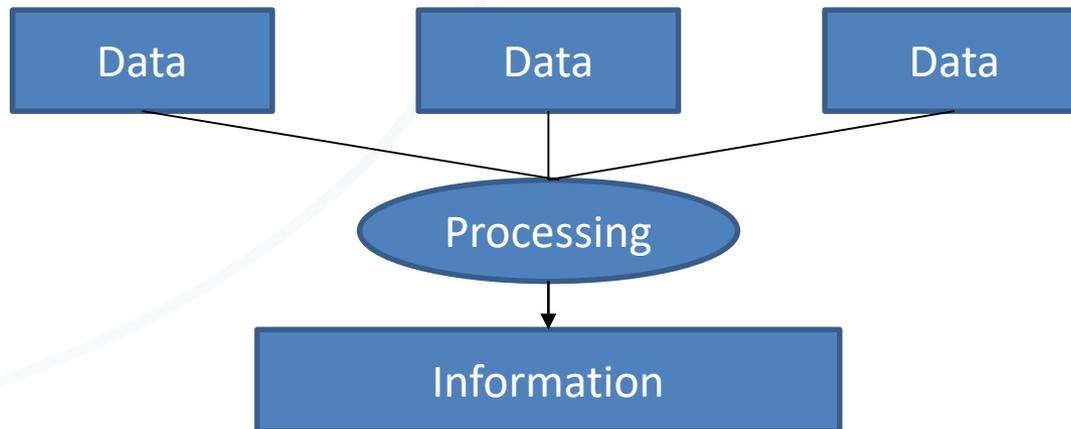


(NHS, Learning to Manage Health Information: a theme for clinical education, 2012)



# From health data to health information

- Data only exists, it must be interpreted to have a meaning
  - E.g. blood pressure rate is health data
- When data is made useful and knowledge is added about the meaning of the data, it becomes information
  - E.g. when blood pressure rate is compared to the reference values data becomes health information (when data has a meaning it becomes information)





# Unit Review Checklist

- Described data collection in healthcare
- Identified techniques for collecting health and health care data obtained by survey, qualitative, or mixed methods (CB07)
- Identified methods and types of data collected in healthcare (GL05)
- Identified health record data collection tools (such as master patient index, registries, demographics input screens, document templates) (JB10)
- Listed methods to gather internal and external health information and data (GL01)
- Described the concepts of collecting and storing data and information correctly to assure the quality of data and information in a health context (TL03)
- Described the differences between health data and health information (EL04)



# Unit Review Exercise/Activity



1. How is data collected in the healthcare?
2. Explain how health data becomes health information.



# Unit Exam



1. Good quality health data is:
  - a) Contemporaneous
  - b) Duplicate
  - c) Complicated
  - d) Extraneous
  
2. Claims and administrative data, patient registries and EHRs are:
  - a) types of surveys
  - b) types of qualitative data
  - c) types of quantitative data
  - d) types of data that are collected



# Unit Exam (cont'd)



3. The difference between electronically and physically stored data is
  - a) Physically stored data is more compact than electronically stored data when considering physical storage space.
  - b) Electronically stored health data can be made available in several physical places at once.
  - c) The data from physical storages systems is more easily compared to other data than in electronic storage systems.
  - d) One is quantitative and the other is qualitative
4. Which of the following statements is false?
  - a) Health information has meaning and knowledge can be gained from it
  - b) When data is made useful and knowledge is added, it becomes information
  - c) Data is useful only when knowledge is added
  - d) Data must be interpreted to have meaning