

Introduction to Health Records and

Introduction to Health Records and Information Technology

Information Technology
Key concepts, terminology, and practical implications for health care professionals

1. What Are Health Records?

Term	Definition	Typical Content
Paper Health Record (PHR)	Physical chart kept in a filing system.	Demographics, encounter notes, lab results, imaging, consent forms.
Electronic Health Record (EHR)	Digital version of a patient's chart that can be shared across providers.	Same data as PHR + timestamps, audit trails, decision support alerts, links to external data (e.g., pharmacy).
Personal Health Record (PHR) (patient-managed)	Health information stored and controlled by the patient (often via apps or portals).	Immunizations, medication list, self-entered vitals, wearable data.
Electronic Medical Record (EMR)	Digital record used within a single practice or organization.	Often a subset of an EHR; may not be interoperable.

Why the shift to electronic formats?

- Faster access to information
 - Reduced transcription errors
 - Support for clinical decision-making
 - Easier data aggregation for quality improvement & research
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2. Core Components of an EHR System

1. **Clinical Documentation Module** – Progress notes, histories, physical exams.
2. **Order Management** – CPOE (Computerized Physician Order Entry) for labs, imaging, medications.
3. **Results Management** – Integration of lab, radiology, pathology reports.
4. **Medication Management** – E-prescribing, drug-interaction checking, formulary support.
5. **Patient Portal** – Secure web/mobile access for patients to view records, request refills, communicate.

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6. **Decision Support** – Alerts, reminders, care pathways, predictive analytics.
 7. **Billing & Coding Interface** – Links clinical documentation to ICD-10, CPT, DRG for reimbursement.
 8. **Analytics & Reporting** – Dashboards, population health metrics, compliance reporting.
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3. Standards & Interoperability

Standard	Purpose	Example Use
HL7 v2 / v3	Messaging format for exchanging clinical data (e.g., lab results).	Hospital ? LIS (Lab Information System).
FHIR (Fast Healthcare Interoperability Resources)	Modern, web?based API framework; modular “resources” (Patient, Observation, Medication).	Mobile app pulls a patient’s immunization record.
CDA (Clinical Document Architecture)	Structured document format (e.g., discharge summary).	Transfer of a complete encounter note.
LOINC	Universal code set for lab tests and clinical observations.	Mapping a serum creatinine result.
SNOMED CT	Comprehensive clinical terminology for diagnoses, procedures, findings.	Encoding a diagnosis of “type 2 diabetes mellitus.”
ICD-10-CM / ICD-10-PCS	Classification for diagnoses and procedures (billing, reporting).	Coding a myocardial infarction encounter.
NCPDP	Standards for pharmacy e?prescribing and medication billing.	Sending an e?prescription to a pharmacy.
DICOM	Imaging data format (radiology, cardiology).	Storing a CT scan in the PACS.

Interoperability goals

- **Data exchange:** Seamless sharing across EHRs, labs, pharmacies, public health agencies.
- **Semantic consistency:** Same meaning regardless of system (achieved via standardized codes).
- **Technical compatibility**