THE PURPOSE AND FUNCTION OF THE MEDICAL RECORD

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DEFINITIONS

- Medical record (a.k.a. health record, patient chart)
  - A record of a patient's medical information[1]
  - Includes diagnoses, clinical notes, test results, treatments and procedures, social and family history, medications taken

- Electronic health record (EHR)
  - Often considered synonymous with electronic medical record (EMR)
  - A digital version of a patient's paper chart [that] are real-time, patient-centered records that make information available instantly and securely to authorized users.[2]
  - The focus of this workshop

1. https://www.merriam-webster.com/medical/medical%20record
2. https://www.healthit.gov/faq/what-electronic-health-record-ehr

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BRIEF HISTORY OF THE MEDICAL RECORD IN US

- Wide usage of paper records started in early 1900s[1]

- EHRs first developed in the 1960s/70s, first by academic health systems, followed by commercial vendors[1]

- 2004: 13% EHR adoption[2]

- 2011: EHR adoption catalyzed by $27B Meaningful Use incentive program (~$44,000 per average physician)[3]

- 2021 EHR adoption: 96% of hospitals, 88% of office-based physicians[4,5] (almost all commercial systems)

1. Evans RS. Electronic health records: then, now, and in the future. Yearb Med Inform. 2016;Suppl 1:S48-61.
2. Watzlaf VJ et al. Standards for the content of the electronic health record. Perspect Health Inf Manag. 2004 Jan 7;1:1.
3. https://www.commonwealthfund.org/publications/newsletter-article/federal-government-has-put-billions-promoting-electronic-health
4. https://www.healthit.gov/data/quickstats/national-trends-hospital-and-physician-adoption-electronic-health-records
5. https://www.healthit.gov/data/quickstats/office-based-physician-electronic-health-record-adoption

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MOST COMMONLY USED EHR VENDOR SYSTEMS

Inpatient Market Share[1]

Vendor	% Hospitals
Epic*	36%
Oracle Cerner	25%
Meditech	16%
CPSI	8%
Other	15%

*Virtually all academic medical centers

Ambulatory Market Share[2]

Vendor	% Practices
eClinicalWorks	14%
Epic	10%
Athenahealth	8%
NextGen	5%
Other	64%

1. https://www.beckershospitalreview.com/ehrs/ehr-vendor-market-share-in-the-us.html. Accessed March 21, 2024.
2. https://www.definitivehc.com/blog/top-ambulatory-ehr-systems. Accessed March 21, 2024.

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EHR – PRIMARY PURPOSES

- Billing
- Clinical care
- Quality reporting and regulatory compliance

EHR – KEY FUNCTIONS[1,2]

- Facilitate billing
- Serve as accessible repository of patient information
- Automate and streamline clinical workflows
- Support clinical decision making
- Enable standards-based data sharing
- Support other institutional priorities and needs (e.g., quality improvement, compliance, reporting)
- Functionality can differ significantly across EHR systems or even different institutions using the same system

1. https://www.healthit.gov/faq/what-electronic-health-record-ehr
2. https://www.healthit.gov/faq/what-are-advantages-electronic-health-records

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KEY EHR FUNCTION: CLINICAL DECISION SUPPORT

- Provides clinicians and patients with knowledge and person-specific information, intelligently filtered or presented at appropriate times, to enhance health and health care.[1]

- Examples[1] :
  - Alerts and reminders
  - Documentation templates
  - Condition-specific order sets
  - Diagnostic support systems

- Subject of prior NAM report[2] and research on best practices[3]

- Can be deployed across EHRs via interoperability standards[4]

1. https://www.healthit.gov/topic/safety/clinical-decision-support
2. https://nam.edu/optimizing-strategies-clinical-decision-support/
3. Kawamoto K, McDonald CJ. Designing, conducting, and reporting clinical decision support studies: recommendations and call to action. Ann Intern Med. 2020;172(11 Suppl):S101-S109.
4. Strasberg HR et al. Contemporary clinical decision support standards using Health Level Seven International Fast Healthcare Interoperability Resources. J Am Med Inform Assoc. 2021;28(8):1796-1806. PMC8324242.

EHR CERTIFICATION[1]

- Federal incentives required use of Certified EHRs, and there are now penalties for not using Certified EHRs

- Therefore, the vast majority of EHRs used are certified

- The Office of the National Coordinator for Health IT (ONC) and the Centers for Medicare and Medicaid Services (CMS) define the requirements for certified EHRs, which are updated regularly

- These certification criteria are the basis of common functionality and interoperability standards that can be expected from virtually all EHRs

1. https://www.healthit.gov/topic/certification-ehrs/certification-health-it

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SUMMARY

- Catalyzed by federal incentives, almost all hospitals, and ~90% of office-based physicians, now use EHRs

- While some vendors have large market share, many EHR products are in use, esp. in the ambulatory setting

- The primary purposes of EHRs include billing, clinical care, quality reporting, and regulatory compliance

- EHR systems can have markedly different capabilities for key functions such as clinical decision support

- EHR Certification helps ensure common functionality and interoperability