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| **Health Information Availability** is defined as the ability of an organization to maintain information in a manner that ensures *timely, accurate, and efficient* retrieval of information by authorized entity[[1]](#footnote-1). For example, information shall be available upon request by any authorized entity in the required output format (e.g. a viewable display for online and paper-based output).1 | |
| Business Requirements | HIM Checklist |
| 1. Ability to capture and maintain information in a manner that ensures timely, accurate (complete and correct), and efficient access and retrieval. – See Integrity Requirement #1 (#1) and #5; Protection #9; Accountability #7; Transparency #5 | **A1.** All documents can be accounted for and the record closed as complete within a specific time period post patient discharge in accordance with governmental regulations, accreditation organizations, or organizational policy.[[2]](#footnote-2) |
| 2. Ability to access information across various systems (electronic and manual) and across patient populations. This includes the abilities to search, identify, locate, and retrieve clinical, payer, labor resource management and research information required to support organization’s ongoing activities via queries. This requirement is focused on how information from various sources is accessed. – See Availability # 3; Integrity #5 and #7; Retention #1 and #6 | **A2.**Single or multiple groups of documents within the electronic medical record can be viewed by or released to the requestor.[[3]](#footnote-3) |
| 3. Ability to search, identify, locate and retrieve an individual’s specific information from continually-expanding volumes of information, across multiple systems (including various HIT products, data warehouses, payer data systems, business and research information systems, and paper-based repositories. This requirement includes tracking sources where information resides. – See Availability # 2; Integrity #5 | **A2.**Single or multiple groups of documents within the electronic medical record can be viewed by or released to the requestor.[[4]](#footnote-4) |
| 4. Ability to assemble (via search, identify, locate and retrieve) information in a consistent and coordinated fashion (timely, complete and correct) from disparate electronic systems, both internal and external to the organization. – See Integrity #5 | **A2.**Single or multiple groups of documents within the electronic medical record can be viewed by or released to the requestor.[[5]](#footnote-5) |
| 5. Ability to present/provide information that originates from disparate electronic systems, both internal and external to the organization in a meaningful way, and for a specific purpose. – See Integrity #5 and #16 | **A2**.Single or multiple groups of documents within the electronic medical record can be viewed by or released to the requestor.[[6]](#footnote-6) |
| 6. Ability to link (semantically and contextually), map, couple, group or integrate clinical and business information in a timely, accurate manner, to support organizational business requirements. – See Integrity #5, #7, #16 and #17 | **A2.**Single or multiple groups of documents within the electronic medical record can be viewed by or released to the requestor.[[7]](#footnote-7) |
| 7. Ability to address multiple demands for having the right information available at the right time, in the right place, and in the right context for an authorized requestor.– See Availability # 2 and #3 | **A7.** Healthcare information for patient care must be managed for maximum searchability using metadata, indexing, and other tools. Increasingly, it must be available from outside the four walls of an organization enabled through the use of standards for interoperability and health information exchange. Time is of the essence in providing patient care in both emergency and non-emergency situations, and it is incumbent upon healthcare organizations to ensure speedy retrievability of patients’ accurate health history, diagnostic results, and previous treatment information, no matter where it is located in order to provide efficient and cost effective care.[[8]](#footnote-8) |
| 8. Ability to access information created with legacy hardware and software systems within an organization. In case of impending system obsolescence, information with organizational value should be migrated to currently supported hardware/software and/or converted/migrated into a compatible format from non-compatible media (MAC vs PC) and non-compatible software versions. See Integrity #5 | **A8.** The future of healthcare relies on the improved flow of health information across the entire patient care continuum. This means a shared information strategy linking disparate systems across the healthcare continuum, inclusive of enterprise EHRs, niche departmental EHRs, practice management systems, and external manufacture device registries—while still maintaining patient privacy and security standards. For this to occur, a solution would have to be built on a participatory platform, where all organizations share a vision to create an interoperable information space. At the 2014 Semantic Technology and Business Conference in San Francisco, CA, a big step was taken towards tackling the problem of semantic interoperability. It came in the form of The Yosemite Manifesto,[[9]](#footnote-9) which recommended using the World Wide Web Consortium’s Resource Description Framework (RDF) standard model for data interchange as a universal healthcare exchange language, describing RDF—one of the core technologies of the Semantic Web—as the best available candidate for the job.[[10]](#footnote-10) |
| 9. Ability to access information imported from an external organization by incorporating pertinent content into the organization’s health information system, e.g., by scanning, digitizing and codifying external information, as defined by organization and jurisdictional policies. – See Integrity #5 | **A9.** Electronic document imaging technology is a component technology of an EDMS that captures (via scanning, faxing, or automatic identification technologies), stores, and retrieves documents regardless of original format.[[11]](#footnote-11) |
| 10. Ability to maintain metadata services across all participating systems assigning structural and descriptive characteristics to information including data provenance information. The latter means the lineage of data or data life cycle that contains the data's origins and where it moves over time. Specific data elements include authors and dates of creation, modification, sending, receipt, access, etc.). – See Integrity #15; Protection #5 | **A10.** Meta data is descriptive data that characterize other data to create a clearer understanding of their meaning and to achieve greater reliability and quality of information. Metadata consist of both indexing terms and attributes. Data about data: for example, creation date, date sent, date received, last access date, last modification date. [[12]](#footnote-12)  To ensure that the developer’s code works in the production systems, it is essential that the development database tables have the same column definitions, primary keys, indexes, etc., as the production tables. Specifically, the development area should match the production area as closely as possible.  This can be achieved efficiently by having the developers, or system designers, refer to their copy of the system metadata definitions when creating objects in their development database. Failing to take this action substantially increases the likelihood of problems when the web screen goes into production.  The DBA will then query the system catalog to locate the information and will provide appropriate access as well as documentation on the table definitions. A copy of the metadata definitions for the project objects, such as tables or procedures, should be distributed to all developers. It should be referenced designing the user’s web form validation. This will help guarantee that interfaces are sending correctly validated data to the database. [[13]](#footnote-13)  There is perhaps no more important use of metadata than in the management of the information lifecycle-especially as it relates to information created and maintained in EHRs. Application, document, file, and embedded metadata are all critical for effective capture and creation, maintenance and modification, and retention and deletion of health information in the EHR.[[14]](#footnote-14) |
| 11. Ability to ensure levels of redundancy, failover, contingencies and other risk management practices to minimize risks of non-availability of information due to a disaster, system malfunction, or data corruption. – See Protection #5 | **A11**. Risk analysis involves a process of assessing the likelihood that a given threat will occur. It provides direction for planning business continuity and disaster recovery as well as for implementing appropriate security safeguards and controls to prevent and mitigate threats. Risk analysis primarily focuses on applications and the information systems supporting the applications. An assessment of the safeguards governing operational practices such as policies, procedures, responsibilities, and training would also be included in a thorough risk analysis.[[15]](#footnote-15)  If a hot site or high-availability system is available, the system should “fail over” automatically to ensure continuity of care.[[16]](#footnote-16) |
| 12. Ability to ensure clinical and public health business continuity and availability of information during a disaster, system malfunction, or data corruption. – See Protection #5; Retention #2 | **A12.** Every organization must have a comprehensive disaster plan that protects patient safety, secures health information  from damage, ensures stability in continuity of care activities, and provides for orderly and timely recovery of information. This comprehensive plan is often referred to as a business continuity plan (BCP). It is the umbrella that includes separate plans delineating downtime and contingency, disaster recovery, and data backup procedures, all  of which are discussed below. The BCP’s objectives include protecting human life, maintaining patient services or services to members of a health plan with little or no interruption, lessening the overall impact on an organization, and complying with applicable laws and regulations.  The development of the BCP is an iterative process that needs ongoing attention. It should involve an interdisciplinary team, including a variety of departments and stakeholders, and should be championed and funded bysenior management.[[17]](#footnote-17) |
| 13. Ability to manage record lifecycle (create, use, migrate, manage, store, preserve, dispose) while complying with regulations and internal policies. – See Retention #1 | **13A.** Electronic health records management (EHRM) is the process by which electronic (e.g., digital) health records are created or received and preserved for legal or business purposes. EHRM requires decision making throughout the electronic health record's life cycle—through the processing, distribution, maintenance, storage, and retrieval of the health record to its ultimate disposition, including archiving or destruction. The scope of EHRM must include a determination of what electronic health records to keep and for how long, the assignments of authorities and responsibilities, the design and administration of the process, the integrity of the data, and the audit and review of the process's performance.[[18]](#footnote-18) |
| 14. Ability to ensure permanently preserved (archived or contained in a tiered storage) information is managed in a manner that supports access of accurate information in a cost effective manner regardless of storage medium. – See Disposition #10 | **14A.** The choice of storage media must guarantee secure, long-term preservation of records that meets archival and retention requirements. The choice of file format must ensure that the archived components of the record can be reliably retrieved over time. A typical part of an organization’s storage strategy involves removable media; therefore, records management professionals must understand portable media’s limitations and demands for archiving, as well as the requirements involved in the care, handling, and storage of removable media. Beyond these basics, HIM professionals must also be diligent about archiving and retaining records for use beyond the clinical domain. With the arrival of e-discovery, the preservation of discoverable information and the determination of the form in which record production must occur will influence storage media selection and storage file format election. Server-based hard disk storage offers a secure storage environment for electronic records, provided it is well managed and includes an effective back-up strategy. Removable media will almost certainly play a role in the lifecycle of any electronic record, particularly records that must be maintained over long periods of time like electronic health records[[19]](#footnote-19)  **14B** The requirement to better manage electronic health information and the dearth of management strategies to help the healthcare industry meet demands such as e-discovery and compliance has highlighted the need for an overarching strategy to aggressively manage records and content.  To avoid fragmented, chaotic information processes, healthcare organizations must adopt an integrated set of strategies, standards, best practices, and technologies for managing patient-centric and organizational information. An organization’s failure to produce relevant requested electronically stored data can potentially result in significant fines or sanctions.[[20]](#footnote-20) |
| 15. Ability to maintain the workforce capabilities on the most current methods to capture, maintain and access information assuring the work processes consistencies despite of workforce turnover. | **15A.** “The IOM report recommends that all programs and institutions educating health professionals, whether through formal academic education or on-the-job continuing education, “should be educated to deliver patient-centered care as members of an interdisciplinary team, emphasizing evidence-based practice, quality improvement approaches, and informatics. ” This is further clarified as utilizing informatics to communicate, manage knowledge, mitigate error, and support decision making using information technologies.”[[21]](#footnote-21) |
| 16. Ability to enable trust in information by ensuring the timeliness, accuracy (completeness and correctness), and efficiency of information availability based on implementation of business requirements 1-14 above. | **16A**. From a strategic standpoint, however, it is important to look beyond the clinical uses of the information and develop a plan that ensures the health records and EHR system can support the healthcare organization’s business and legal needs as well. The use of the EHR for business and legal purposes is every bit as mission-critical as its clinical uses and must be reflected in approaches to its management. Because of the urgency healthcare organizations have felt to begin deploying EHRs, healthcare entities, vendors, and others sometimes neglected to build in the processes and system capabilities needed to enable optimal EHR management functions and ensure the electronic rather than the paper version could stand as the legal business record.  Like other essential healthcare organizational assets, clinical information within the EHR requires oversight in order to be used effectively for decision making, performance improvement, cost containment, and mitigation of risk. Applying sound information governance practices to EHRs can help ensure that the information that is captured and maintained within the EHR is consistently trusted and actionable.[[22]](#footnote-22) |
| 17. Ability to maintain and update information inventories, i.e., inventory of data repositories, warehouses or resources from which to retrieve, store, and maintain data and information that includes, but are not limited to, application-specific databases, diagnostic biomedical devices, master patient indexes, patient medical records, ancillary health information systems, payer systems and other. | **17A.** A data dictionary provides a descriptive list of names, definitions, and attributes of data elements to be captured in an information system or database. It describes the definitions or the expected meaning and acceptable representation of data for use within a defined context of data elements within a data set. It also provides metadata or information about data.  The metadata may include other attributes or characteristics such as length of data element, data type (e.g., alphanumeric, numeric, date, special symbols), data frequency (mandatory or not), allowable values or constraints, originating source system, data owner, data entry date, and when the data element is no longer collected. All systems-administration, financial, and clinical-require data definitions.[[23]](#footnote-23) |
| 18. Ability to create, maintain the data inventory for retention schedule. – See Retention #5 |  |
| 19. Ability to specify the storage medium on which information will be maintained. – See Retention #1 | **A19.** Because the health record is a multi-faceted document that is demanded by many diverse interests, retention policies are critical to the records management process. In addition to federal and state laws and other legal issues that must be considered, HIM professionals must take into account the compelling requirements of external organizations, such as the Joint Commission on Accreditation of Healthcare Organizations (Joint Commission), and recommended retention standards published by AHIMA.[[24]](#footnote-24) |

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