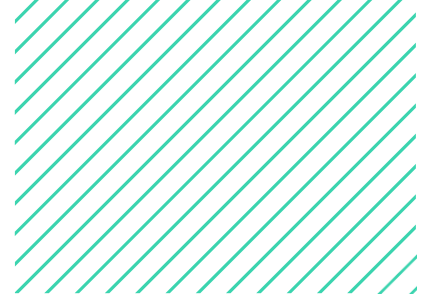


DIAM

HIMSS SOLUTION



The HIMSS Digital Imaging Adoption Model (DIAM) helps to evaluate the maturity of IT-supported processes in medical imaging and supports healthcare organizations to move towards advanced digital environments driving improved patient outcomes and operational efficiencies.

DIAM classifies participating organizations into eight different stages, with Stage 0 indicating low imaging IT maturity and Stage 7 representing an advanced imaging IT environment with highest patient safety and work efficiency standards. Each DIAM stage has specific requirements and will be considered achieved if at least 70% of those requirements are fulfilled.

From Stage 0 – 4 the model has sequential compliance goals, i.e. organizations need to meet the requirements of lower stages before they are able to move up on the model. Those stages basically describe a hierarchy for planning and implementation of imaging IT.

Stages 5 – 7 are non-hierarchical and show different options for making use of advanced software-related features in imaging. To reach Stage 5, an institution is required to achieve at least one of the three possible specializations. Stage 6 requires two out of the three specializations, while all three must be achieved to reach Stage 7.

The stages of the model are as follows:

Stages 5 - 7 (Stages 5-7 are non-hierarchical and can be adopted in any order)

Stage 7: Achieve all three Stage 5 - 7 criteria from below

Stage 6: Achieve two-of-three Stage 5 - 7 criteria from below

Stage 5: Achieve one-of-three Stage 5 - 7 criteria from below

External image exchange and patient engagement

The majority of image producing service areas are exchanging and/or sharing images and reports and/or clinical notes with care organizations of all types, including local, regional or even national health information exchanges based on recognized standards. The application(s) used in image producing service areas support multidisciplinary interactive collaboration. Patients can make appointments, access reports and images as well as educational content – specific to their individual situation – online. Patients may be able to electronically upload, download and direct the sharing of their images.

Clinical decision support and value-based imaging

Systems are in place that are capable to provide feedback about the appropriateness to perform an examination, based on patient preconditions, history and approved guidelines. Alternative examinations and suggestions for standardized care practices/best-practice guidelines are directly integrated into the electronic workflow. Imaging reports/notes are in structured format and/or supported by natural language processing and produce discrete data elements that can trigger alerts and clinical decision support. Patient-specific imaging data from at least 2 image producing services are used and correlated in near-time with evidence-based information sources (commercial or self-developed) to improve health outcomes. Where applicable, the organization participates in regional, national or international registries in order to track patient safety related information for imaging.

Advanced imaging analytics

Clinical, organizational, and financial parameters are systematically tracked, benchmarked (internally and externally) and can be presented in real-time through Dashboards, Balanced Scorecards etc. The organization uses internal and external data for making predictions about needed therapies and examinations, follow-up measures etc. Genetic information from patients is correlated with imaging biomarkers. Technology use is captured and analyzed to influence user behavior.

Stage

4

The organization makes use of an enterprise-centralized repository where image content is stored. Clinical image, multimedia and metadata capture and storage processes are standardized which enable order- and encounter-based image acquisition and sharing workflows across the enterprise. Internationally recognized standards, protocols or profiles are used to support system integration and clinical workflows. The organization has the capability to securely acquire and view images via mobile platforms (e.g. mobile ultrasound) and handheld devices (e.g. smartphones). Image content, associated reports and clinical notes (DICOM/Non-DICOM; structured and non structured reports) can be ingested and stored electronically. Clinicians may be able to access medical images and reports securely from remote locations.

Stage

3

An Enterprise Imaging Strategy exists and is in place, including appropriate governance and oversight. Clinical image acquisition and communication workflows are formalized, implemented and designed to support clinicians within their normal care processes. Quality, safety and operational parameters across multiple imaging services are measured and under control. Imaging specialists can access all types of images/multimedia from a single point of entry that connects them directly to specialty clinical viewers as needed. Clinicians across the enterprise can access images/multimedia through a consolidated viewer for non-diagnostic purposes. External referrers can access and view images through the organization's network/repository. A supply and inventory management system, supporting the maintenance of inventory and consumables within the service area, may also be in place as appropriate, e.g. Radiology/Cardiology.

Stage

2

Images and associated reports/clinical notes, created in at least three image producing service areas are accessed via multiple, unique links within the EMR (or similar enterprise-wide user interface when an EMR is not available). At least one of the assessed image producing service area must be from a different category, e.g. using imaging for diagnostic vs evidence vs procedural or other purposes. External images can be imported to the organization's image management system for clinician access (if policy allows). Basic capabilities addressing antivirus/anti-malware measures and the safety of protected health information.

Stage

1

Key specialized medical imaging information systems are installed for managing image acquisition workflows (orders or encounters based workflows), imaging related reports and/or clinical notes, digital image archiving, in at least two departments/service areas.

Stage

0

The organization has not installed key enterprise and/or specialized imaging information systems for imaging acquisition (orders or encounters-based workflows), image-related reports and/or clinical notes, and/or digital image archiving, in at least two service areas (image-producing departments/units).

For more information visit: <https://www.himss.org/what-we-do-solutions/digital-health-transformation/maturity-models/digital-imaging-adoption-model-diam>