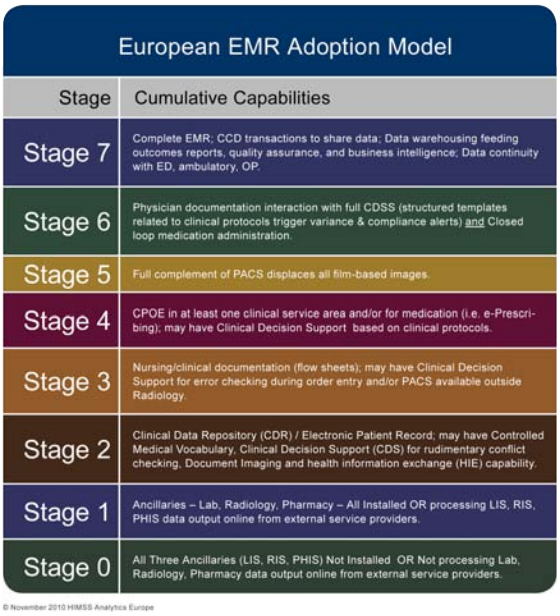
EMR Adoption Model for Europe

Understanding the level of electronic medical record (EMR) capabilities in hospitals is a challenge in the European healthcare IT market today. HIMSS Analytics Europe has developed a European EMR Adoption Model based on the acknowledged model created by HIMSS Analytics and established across the U.S. and Canada. The model identifies the levels of electronic medical record (EMR) capabilities ranging from limited ancillary department systems through a paperless EMR environment. HIMSS Analytics Europe has also developed a methodology and algorithms to automatically score hospitals in the database relative to their IT enabled clinical transformation status, to provide peer comparisons for hospital organizations as they strategize their path to a complete EMR and participation in an electronic health record (EHR). The stages of the model are as follows:



European EMR Adoption Model

Stage	Cumulative Capabilities
Stage 7	Complete EMR; CCD transactions to share data; Data warehousing feeding outcomes reports, quality assurance, and business intelligence; Data continuity with ED, ambulatory, OP.
Stage 6	Physician documentation interaction with full CDSS (structured templates related to clinical protocols trigger variance & compliance alerts) and Closed loop medication administration.
Stage 5	Full complement of PACS displaces all film-based images.
Stage 4	CPOE in at least one clinical service area and/or for medication (i.e. e-Prescribing); may have Clinical Decision Support based on clinical protocols.
Stage 3	Nursing/clinical documentation (flow sheets); may have Clinical Decision Support for error checking during order entry and/or PACS available outside Radiology.
Stage 2	Clinical Data Repository (CDR) / Electronic Patient Record; may have Controlled Medical Vocabulary, Clinical Decision Support (CDS) for rudimentary conflict checking, Document Imaging and health information exchange (HIE) capability.
Stage 1	Ancillaries – Lab, Radiology, Pharmacy – All Installed OR processing LIS, RIS, PHIS data output online from external service providers.
Stage 0	All Three Ancillaries (LIS, RIS, PHIS) Not Installed OR Not processing Lab, Radiology, Pharmacy data output online from external service providers.

Stage 0: The organization has not installed any of the key ancillary department systems (laboratory, pharmacy, radiology) and is not processing laboratory, pharmacy, and radiology data output online from external service providers.

Stage 1: Major ancillary clinical systems are installed (pharmacy, laboratory, radiology) or laboratory, pharmacy, radiology information system data output is delivered to the hospital for online access and processing if the ancillary service is not provided in-house, but by external service providers.

Stage 2: Major ancillary clinical systems feed data to a system that provides physician access for retrieving and reviewing patient-centered results. The system may be a Electronic Patient Record (EPR) system or a clinical data repository (CDR) fed by and feeding back into sub-systems. It may contain a controlled medical vocabulary (CMV) tool such as SNOMED to transfer results into a format that can be incorporated into the EMR as structured data. It also may contain the clinical decision support/rules engine for rudimentary conflict checking. Information from document imaging systems may be linked to the system at this stage. The hospital should be health information exchange (HIE) capable at this stage and can share information in the EPR/CDR with other patient care stakeholders.

Stage 3: Nursing/clinical documentation (e.g. vital signs, flow sheets, nursing notes, care plan charting) and/or theelectronic medication administration record (eMAR) system and Order Entry/Communications are required, and are implemented and integrated with the EPR/CDR for at least one service in the hospital. The first level of clinical decision support may be implemented to conduct error checking with order entry (i.e., drug/drug, drug/food, drug/lab conflict checking normally found in the pharmacy). Some level of medical image access from picture archive and communication systems (PACS) may be available for access by physicians outside the Radiology department, e.g. via the organization's intranet.

Stage 4: Computerized Practitioner Order Entry (CPOE) for services (e.g. radiology, laboratory, operating room, etc.) and/or medication (i.e. ePrescribing) is added to the nursing/clinical documentation and EPR/CDR environment. If one patient service area has implemented CPOE for use by any clinician and with physicians entering orders and completed the previous stages, then this stage has been achieved. Second level of clinical decision support capabilities related to evidence based medicine protocols may be available.

Stage 5: A full complement of PACS systems provides medical images to physicians via an intranet and displaces all film-based images. If a hospital has completed the previous stages, then this stage has been achieved.

Stage 6: Full physician documentation/charting is implemented for at least one patient care service area. A clinical decision supportsystem (CDSS) provides guidance for all clinician activities related to protocols and outcomes in the form of variance and compliance alerts (i.e. third level of clinical decision support). Some form of structured templates are required to capture discrete data for physician documentation interaction with CDSS. The closed loop medication administration environment is fully implemented. The electronic medication administration record (eMAR) is implemented and integrated with CPOE/ePrescribing and/or pharmacy to maximize point of care patient safety processes for medication administration. Bar coding or other auto identification technology, such as radio frequency identification (RFID), automated dispensing machines (ADM) or double e-signature by administering nurses ensure the protection of the ‚5 Rights'.

Stage 7: The hospital no longer uses paper charts to deliver and manage patient care and has a mixture of discrete data, document images, and medical images within its EMR environment. Clinical Data Warehouses are being used to analyze patterns of clinical data to improve quality of care and patient safety and to feed outcomes reports, Quality Assurance, and Business Intelligence. The hospital demonstrates summary data continuity for all hospital services (e.g. inpatient, outpatient, ED, and with any owned or managed ambulatory clinics). Clinical information can be readily shared via standardized electronic transactions (e.g. Continuum of Care Document) with all entities who are authorized to treat the patient, or a health information exchange (i.e., other non-associated hospitals, ambulatory clinics, sub-acute environments, employers, payers and patients in a data sharing environment).