

Subcategory	Level 1	Level 2	Level 3	Level 4	Level 5
Master data set up	Master data not organised without a proper infrastructure. Working with pharmacy	Master data with some additional information. Meta system in the pharmacy data on different hospitals and you know what medication is needed. Medication list for each different hospitals. Pharmacy + suppliers	This could be intrasystem (we talk about one hospital) and here is important to have in mind the close-loop medication management. Each hospital has different systems for the different wards. Pharmacy +suppliers+ institutional clients GDP	Microsystem done within one system/platform. The data of the different nurses working in the station and you need to have the data of the patients and the data of the medicines dispensed. Monitoring of the drugs administered. Close loop medication administration. Pharmacy +suppliers+ institutional clients & department+ GDP+ Good Pharmacy Practice (GPP)	The different components of the system should be interlinking with each other and you have some sort of mutual recognition. Recognition of the patient that has got the medicine. Documentation of the administration of the medication (e.g nurses giving the medicine to the patient, thus complete documentation). All systems connect to each other. Bidirectional connectivity between all different systems. Pharmacy +suppliers+ GDP+ institutional clients & department+ Good Pharmacy Practice (GPP)+ GMP
IT Infrastructure	A few stand alone information systems related to medication use process exist. There are no interface capabilities between systems. Systems data accessibility (change this all levels, change visibility by access) is very limited.	Electronic health records (EHRs), pharmacy IT systems, and some medication automation solutions exist. Systems are minimally integrated within the hospital. There is some data across wards or business units.	Electronic health records (EHRs) and pharmacy IT systems are integrated with custom interfaces to some medication automation solutions. Hospital network standards of interfacing/interoperability are in place. Data can be accessed across hospital.	EHRs with pharmacy systems are seamlessly coupled to many automation solutions using international standards of interfacing/interoperability. Relevant data can be accessed across the healthcare system.	All IT systems and platforms are completely integrated within a cloud based infrastructure. All relevant data can be accessed across the country healthcare ecosystem.
Data Intelligence	Ad hoc descriptive reports are generated separately within each system.	Routine descriptive reports across the individual facility for logistics or clinical data review are scheduled to generate at defined intervals for review.	Routine descriptive reports across the entire health care system for logistics or clinical data review are scheduled to generate at defined intervals for review.	Routine predictive reports across the entire health care system for logistics or clinical data review are scheduled to generate at defined intervals for review.	Routine prescriptive reports across the entire health care system for logistics or clinical data review are scheduled to generate at defined intervals for review.
Financial Management	Stakeholders create budgets and reports within their own proprietary systems. Financial status is not provided in a comprehensive view.	Most budgets and financial reports remain unstandardized, with only a limited number sharing identical formats and reporting on comparable values.	Most budgets and reports are produced using the same methods enabling financial information to be aggregated and trends to be visible across the individual hospital.	Most budgets and financial reports are specific views of completely integrated financial information that allows for accurate financial projections covering several years across the healthcare system.	All budgeting is derived from actionable advice based on prior performance, and all financial reporting is automated using tools that make it easy to modify and extend financial management at any time across the healthcare system.
Procurement	Stakeholders order, receive, and deploy capital-intensive business products and services in isolation from each other. Information is only shared when procurement problems arise.	Most procurement activities occur in isolation. In limited cases the procurement of capital intensive products and services are subject to additional data collection so that earlier warnings of procurement problems are visible.	Most procurement activities for capital intensive products and services are structured to enable market wide comparative cost analyses. Capabilities to forecast procurement problems is limited.	Almost all procurement activities are highly structured to enable near complete market-wide cost transparency allowing for accurate prediction of critical procurement issues.	Stakeholders have complete cost information for all capital-intensive procurement. Granular information is available real time and easy to manage. End-to-end procurement management capabilities are complemented by actionable advice from the procurement system.
Order review (incl. clinical decision support)	Patient-level medication orders are not reviewed.	Patient-level medication orders are reviewed during limited pharmacy operational hours with our without aid of clinical decision support systems. Retrospective review of orders already administered does not occur.	Patient-level medication orders are reviewed during limited pharmacy operational hours with aid of clinical decision support systems. Retrospective review of orders already administered does occur.	All patient-level medication orders are reviewed prior to administration with the aid of clinical decision support systems.	All patient-level medication orders are digitally reviewed with the help of clinical decision support prior to administration automatically based on algorithms and machine learning. Human intervention is automatically targeted to high risk scenarios.
CPOE (incl. clinical decision support)	Structured patient level electronic data about medication and other medical products do not exist.	Limited prescription data is captured electronically in a structured manner. No clinical decision support is offered.	Most prescription data is captured electronically in a structured manner. Limited clinical decision is offered.	All prescription data is captured electronically in a structured manner. Full clinical decision support is offered. CPOE links to patient data, lab data, etc.	All prescription data is captured electronically in a structured manner. Full clinical decision support is offered. CPOE links to patient data, lab data, etc. Automated alternative therapies are offered when drug interactions and contraindications are identified.
Medication Administration records	Medication administration records are maintained on manual paper based systems. New orders, change orders, and discontinued orders are transcribed manually onto the record. Medication administration transactions are documented on the manual record.	Medication administration records are maintained on an electric medication record (e-MAR) on some wards. New orders, change orders, and discontinued orders are reflected real time on the e-MAR. Medication administration transactions are documented electronically on the e-MAR.	Medication administration records are maintained on an electric medication record (e-MAR) on most wards. New orders, change orders, and discontinued orders are reflected real time on the e-MAR. Medication administration transactions are documented electronically on the e-MAR.	Medication administration records are maintained on and electric medication record (e-MAR) on all wards. New orders, change orders, and discontinued orders are reflected real time on the e-MAR. Medication administration transactions are documented electronically with bar-code scan verification on the e-MAR on most wards for most medications.	A closed loop system for medication administration is fully implemented for all types of wards, incl. specialized wards and all of medicines. The administration is captured electronically in real time for all patients with bar-code scan. The data electronically captured data is linked to the order. The system automatically updates stock management information in the pharmacy.