Belgian Meaningful Use Criteria for Mental Healthcare Hospitals and other non-general Hospitals

Introduction

This document is the result the conclusion of the WG Belgian Meaningful Use Criteria for Mental Healthcare Hospitals and other non-general Hospitals. It is the result of a concertation of mental healthcare hospitals and other non-general hospitals all over the country , hospitals of different sizes and different degree of ICT maturity.

It is to be seen and read in conjunction with the text under construction by the General Hospitals describing the 'Belgian Meaningful Use Criteria' for an EHR in a general hospital.

Its purpose is to propose to the federal government a number of criteria to determine whether a mental healthcare hospital is eligible for public funding for its past and future efforts in EHR development and implementation.

Important remarks

It is recommendable to align the stages between general and mental health care hospitals. Therefore, the timeline for the subsequent stages is identical to the one for the general hospitals.

For every criterion, the method of measurement has to be as simple and clear as possible. For the criteria expressed as a percentage, numerator and denominator are defined. Maximum alignment with the general hospitals is necessary.

Where a percentage should be reached, we propose a numerator and denominator that can be measured without too much effort.

Table of Core Criteria for 'Other' hospitals

Not reaching the criteria of a functionality for which a percentage less than 50% is demanded can be compensated by reaching the criteria of step 2 of another functionality (except for functionality 1, 4, 6, 7, 10, 11, 12, 14 and 15).

	Mental Healthcare hospitals			
Criteria	**Step 1**	**Step 2**	**Step 3**	**Step 4**
1. Unique patient identification and description	80%	90%	98%	98%
2. Problem list (active and past diagnoses)	20%	50%	80%	98%
3. Allergy list	30%	60%	90%	98%
4. e-prescription medication	80%	90%	95%	98%
5. Drug drug interaction	Yes	Yes	Yes	Yes
6. e-administration medication (linked to e-prescription)	80%	85%	95%	98%
7. Electronic discharge letter	80%	90%	95%	98%
8. Informed consent registration	10%	50%	80%	98%
9. Therapy limitation code	10%	50%	80%	98%
10. Automated communication with HUB's and interaction with eHealth	80%	90%	95%	98%
11. Multidisciplinary registration and exchange of information	70%	80%	95%	98%
12. Control of the interdisciplinary treatment plan and of the tasks of each discipline via the EHR	60%	70%	95%	98%
13. Segregations	No	Yes	Yes	Yes
14. Registration observations	80%	90%	98%	98%
15. Support for integrating results (protocols) of internal requested but external executed studies.	60%	70%	80%	90%

Menu Criteria

A (yet to be defined) number of menu items can be selected by the hospital in order to prepare for a full EPR implementation in the future.
Some of the menu items can become mandatory in a later step, thus becoming core from that step on.

The following menu items could be considered:

- Structured outcome measurement is possible.
- Possibility for the patient to add directly data to the EHR, which may have an impact on the care during the hospitalization)
- Doctors on call can access the patient record and prescribe medication.
- Therapyplanning
- Measures restricting physical freedom: other than segregation

Core Criteria Description

1. Unique patient identification and description

Following demographics must be registered in a structured way: full name, date of birth, gender, nationality, National ID (in case of a Belgian civilian), address, phone number, preferred language, insurance information, name of general practitioner, (pass) photo when possible. It should be possible to register contact information: name, relationship to the patient and phone number. This information must be maintained on a regular basis, at each patient visit in the hospital. This patient information is accessible online anywhere in the institution.

One unique patient number should be used throughout all electronic systems that register patient related data. In case a patient has two patient numbers, these numbers should be linked together in a way so the users of the system can access all the information through one patient number. Processes to search for double patient numbers in a regular way should be implemented.

When the identity of the patient cannot be established at registration time, it should be possible to create a unique temporary patient number, so one can register data for this patient. When later the identity of the patient is established and his unique patient number is created or determined, the registrations linked to the temporary patient number have to be transferred to the actual patient number, or linked together.

Measure:

- Numerator: The number of unique patients in the denominator that have the listed demographic information available plus the number of unique patients for which a temporary patient id is created and no establishment of identity was available in the EHR reporting period of the denominator.
- Denominator: the number of unique patients in inpatient, one day care or emergency setting in a given EHR reporting period (to be defined).

2. Problem list (active and past diagnoses)

A persistent and managed Belgian SNOMED CT coded list of identified diagnoses or problems, or previous procedures performed, that may influence clinical decision-making and care provision. Problem lists are managed over time, hence giving a historical view of the patient's condition and may include:

- symptoms , diagnoses, allergies, devices in situ
- family and genetic information

- social problems, events
- nursing problems & risks
- functional (dis)ability,
- treatment and regimens
- interventions (done & planned)diagnostic procedures (done & planned)
- vaccinations (done & planned)

The source (e.g. the provider, the system id, or the patient, the location, time) of updates should always be documented for every item and version (unique Record ID with Timestamp).

The onset and end dates, if known, should be documented for every item. The problem list can be represented (based on the time status of each item) as historical, or / and as an "active" problem list.

Measure
In Step 1, more than 20 percent of all unique patients hospitalized in the reference period (denominator) have at least one SNOMED CT coded entry or an indication that no problems are known for the patient recorded as structured data (numerator).

> **Important remark:** The target date to reach this goal is relative to the availability of the Dutch/French translation of the main SNOMED CT diagnostic codes. The implementation has to be at least two years (one year for technical development and one year for implementation)one year after the final availability of the translated codes.

3. Allergy list

Manage patient allergies including reaction for any allergen, intolerance and adverse reaction lists (to drug, dietary). The allergy list is used when allergenic conditions are encountered in other modules of the EPR (drug prescription,…).

Step 1 : Recording of 2 type of allergies (drugs, food, …) and showing the list of existing allergies at e.g. presciption time should be sufficient (due to lack of structured datasets)

Step 2: Automatic triggering of alarms when allergenic conditions are encountered (to be defined in more detail)

Measure

- Numerator: The number of unique patients in the denominator that have at least one entry in their allergy list (or an indication of no known allergies). Reconciliation of the entry "no known allergies" is necessary at each new eligible contact.
- Denominator: the number of unique patients in inpatient, one day care or emergency setting in a given EPR reporting period (to be defined).

4. e-Prescription (computerized provider medication order entry)

The benefits of computerized provider **medication** order entry (CPOE) are well known. The most evidence is found in medication order entry even with little or no decision support. A CPOE embedded in the electronic patient record is even more beneficial since the information from the rest of the patient record becomes available to the health professional during the prescription process (e.g. laboratory results…). Although the most benefit may be seen if the CPOE system is used in conjunction with well designed and implemented decision support.

The beneficial effects include greater use of formulary medication, elimination of ambiguities caused by illegible handwriting, use of order sets containing related orders for specific purposes, use of templates enforcing standardization of care, use of recommended dosages and improved efficiency of care delivery.

The use of CPOE, however, carries a non-negligible potential for harm and unintended consequences: entering of duplicate orders, inadverted overdosing, unfavorable workflow issues,

paper persistence. Many of the latter may be overcome by implementing a well-designed CPOE and by adding a decision support system to the CPOE.

System requirements for CPOE in medication ordering

- The drugs prescribed in the CPOE are available in a central hospital-wide medication database managed by the pharmacy department.
- The pharmacy can define a subset of this database that represents the formulary. The system directs the prescriber to the use of formulary medications.
- The system supports generic medication orders and medication orders by drug trade name.
- Medication orders are entered in a structured format (e.g. drug name, dose, dosage form, start/end time for order, unit, frequency, administration route, clinical indications for an 'as necessary' order…). Each medication order is built up with all necessary components in order to ensure compliance with the Belgian legislation concerning medication prescriptions.
- All actions on medication orders (start, stop, change, cancel) are logged in the system and a complete audit trail can be performed for each individual medication order.
- The system supports a workflow where the pharmacist is able to validate a medication prescription. This validation, however, may not impede of execution of the medication order. However, this validation process may be mandatory for some medication orders.
- The system supports a workflow where the pharmacist is able to substitute a drug for an alternative (formulary) drug
- Only licensed health care professionals are authorized to enter medication orders. The rights for entering medications orders are configurable.
- The system supports a workflow for oral orders. This workflow allows the administration of a drug to a patient with mandatory retro-active approval by a licensed health care professional.
- The prescriber has during the prescription process access to relevant information (e.g. clinical information, lab-results, other..).
- The user has during the prescription process access to relevant drug information (e.g. drug references)
- The system is able to deliver a complete overview of all current medication orders. The system also can show an overview of the medication orders of a certain time frame. These medication order overviews are available to all relevant users, including the pharmacist. This way the system supports the role of the clinical pharmacy in the prescription and drug workflow in hospitals.

Measure

- Numerator: Number of hospital beds for which all medication is prescribed electronically.
- Denominator: Total number of hospital beds

5. Drug-drug interaction

The users legally authorized to judge drug-drug interactions and contraindications are prompted as soon as possible by the system in the process of the drug distribution process. (e.g. for a physician this means before completing the e-prescription. For the pharmacist before preparing or delivering the medication).

Those alerts can be customized to specific medical specialties. Moreover the user must have the possibility to overrule these warnings specifying the reason for overruling.

Step 1 Interaction checking includes:

- Therapeutic duplication “deduplication”: Medication with therapeutic overlap with another new or active order; may be same drug, within drug class, or involve components of combination products
- Min-max dose ranges : Medication with a specified dose that exceeds recommended dose ranges or that will result in a cumulative dose that exceeds recommended ranges

For later steps this needs to be expanded to more complex interaction checking with non-medicational data (e.g. allergies, pregnancy, diagnoses, lab-results,...).

Local drug databases / formularies should be SNOMED CT-annotated in order to be compliant between institutions and professionals. The use of subsets of the national reference drug databases will guarantee interoperability. To guarantee uniformity in the implementation (and thus uniformity of care for the patients) national databases for each of the types of interactions should be made available.

Although the task force added this to the Step 1 criteria, the timing for reaching this goal is relative to the availability of the databases driving this functionality. We propose at least two years (one year for technical development and one year for implementation) between the final delivery of the data base and the requirement to implement the corresponding interaction (assuming that the design and specification of the database is supplied beforehand). This means not only the availability of the SAM (Structured Authentic Medication) database (or an alternative) and interactions defined using the keys used in this database.

The criterium is met if the hospital has implemented the check in its medication prescription system and uses the interaction database as supplied by the government.

6. Medication administration (linked to e-prescription)

The electronic medication administration record (eMAR) supports the medication management in the electronic medical record. Although less literature on eMAR has been published, the use of eMAR has the potential to decrease the incidence of medication errors. The benefits are evident for eMAR systems alone and in combination with CPOE. The use of eMAR in conjunction with barcode scanning technology may even further increase patient safety.
Minimal system requirements

- The system requires personal login before any medication administration can be documented
- The system logs the medication administration process. A complete audit trail of any medication administration is possible.
- The eMAR provides an overview of all medication administrations in a timeline. This includes all past and future medication administrations as well as the medication orders that are not executed (delays/omissions).

- The system favors immediate documentation of order fulfillment i.e. drug administration (opposite to retrospective documentation)
- The user has the possibility to document any information (preferably structured) during the execution (or the non-execution) of a medication order.
- Any medication administration after an oral order generates a request for retroactive approval addressed to the ordering physician.
- The system displays always the name of the drug as depicted in the medication order. In case of medication substitution by the pharmacist, both drug names are displayed/accessible in order to avoid misunderstanding.
- The user has during the medication administration process access to relevant drug information (e.g. drug references)

Measure

- Numerator: Number of hospital beds for which electronic medication administration is implemented.
- Denominator**:** Total number of hospital beds

7. Discharge letter

Prepared at discharge, documented in the patient's record and contains at least the items required by the Royal Decree of 3 May 1999 Art. 3 §3
The history of each letter is easily available (date/time of creation, validation, including an overview to whom it has been sent and by which means).
The validated discharge letter is electronically available.
In Step 4 the electronic discharge letter should contain structured data.

Measure

- Numerator: number of electronically available discharge letters
- Denominator: number of discharged patients (patients with specific pathology that need recurring treatment excluded)

8. Informed consent registration

The EPR supports the registration of a list of procedures and treatments for which consent must be obtained, including who must obtain consent and how it has to be obtained (verbally, by signing a consent form or through any other means).
Patients participate in the care process by making decisions about proposed care and treatment and by accepting or refusing diagnostic procedures and treatments. After a patient has been well informed, he is in the position to grant informed consent. Informed consent may be obtained and registered at several points in the care process e.g.: general consent for treatment for an inpatient, surgery, anesthesia, use of blood and blood products, dialysis, chemotherapy, procedural sedation, abortion, other high risk treatments and procedures, … The EPR supports the registration of the informed consent (or its refusal).
Specific for the Belgian situation, the EPR supports the registration of the patient consent that authorizes the collection, use and disclosure of health information for providers giving birth to the therapeutic relationship (patient – provider) in the context of the eHealth platform (see also the Health- MetaHub, Hub project).

Measure

- Numerator: number of electronically registered obtained consents
- Denominator: number of treatments that require an informed, according to the policy of the hospital.

9. Therapy limitation code or advance directives

The patient's autonomy is respected. The patient has the right to refuse or choose his treatment. Patient guidelines (advance directives) and provider therapy limiting instructions or DNR (Do Not Resuscitate) orders are registered with necessary corresponding data such as date and time, HC actor who registered this directive and possibly references to paper written documents.

Measure

- Numerator: Number of registered therapy limitation codes
- Denominator: Number of therapy limitations codes that should be registered, according to the policy in the hospital

10. Automated communication with HUB's and interaction with eHealth

The following eHealth-services must used by hospitals:

- eHealthBox
- consultation of health records (other institutions, SUMEHR, medication scheme) through hubs by healthcare providers in the institution
- sharing of the electronic health records of patients to other hcp
- use of healthdata.be for participation in registries
- status of the informed consent in the patient administration software at registration desks of hospital and of consultation departments (if patient does not need to perform central registration); this status must be retrieved on-line from either a hub or the national database
- integration of services of NIHII, NIC/CIN, National Register in processes of the institution (Chapter IV, Insurability, eBirth, Mediprima, …)

Measure

- Numerator: The number of unique patients in the denominator that have the listed registered items/information available on the eHealthservices in the EHR reporting period of the denominator.
- Denominator: the number of unique patients in inpatient, one day care or emergency setting in a given EHR reporting period (to be defined).

- Important remark: The target date to reach this goal is relative to the availability of the release of the technical description of a new item or register. We take into account one year for development and getting into production.

- A task force will decide on how to proceed further for the measurement of each item.

11. Multidisciplinary registration and exchange of information.

% Of patients for whom all care providers (intramuros) record care data in the EHR and share relevant information with other providers within and outside their discipline. It includes at least the nursing record.

Measure

Numerator: Number of patients with at least 2 disciplinary registrations.

Denominator: Total Number of hospitalized patients

Measurement on one specific date

12. Control of the interdisciplinary treatment plan and of the tasks of each discipline via the EHR

In the EHR is an interdisciplinary treatment plan available and it includes the tasks of each discipline. Incl. equipped syntheses by the various disciplines in preparation for the interdisciplinary patient consultation and , determining and assigning of actions.

Measure

Numerator: Total Number of hospitalized patients with an interdisciplinary treatment plan
Denomiator: Total Number of hospitalized patients
Measurement on one specific date

13. Segregations

Registration of segregations (cfr legal register) in EHR.

Measure

Numerator:Number of segregations recorded in the EHR.

Denomiator: Total Number of segregations recorded (in the EHR + in physical register)

14. Registration observations

Ability to record daily observations. These can serve as a basis for further processing of synthesis, treatment plans , and can be used for transfers between health care providers.

Measure

Numerator:Number of hospitalized patients with registered observations.

Denomiator: Total Number of hospitalized patients

15. Support for integrating results (protocols) of internal requested but external executed studies.

The availability of information regarding the internal requested but external executed studies in the EHR as part of the EHR.

Measure

Numerator: Integrated results for internal requested but external executed studies.

Denominator: Total Patients with an internal requested but external executed studies.