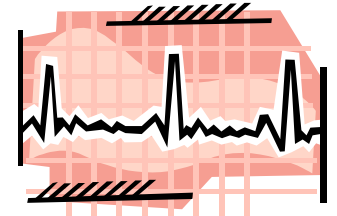
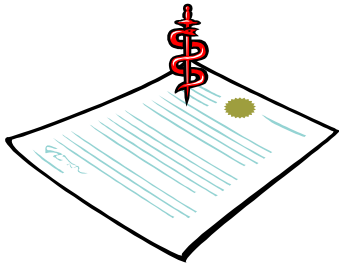


The Norwegian EHCR standard and its use



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Content

- ▶ **Scope of the Norwegian EHCR standard**
- ▶ **The EHCR architecture**
 - ▼ **EHCR Folder**
 - ▼ **EHCR Composition**
 - ▼ **EHRC Fragment**
 - ▼ **Data Item**
 - ▼ **Links and references**
- ▶ **The use of templates**
- ▶ **Access control**

The Norwegian EHCR standard

- ▶ A basic EHCR standard was published in June 2001
- ▶ The standard covers the following areas:
 - ▼ Information architecture
 - ▼ Archiving
 - ▼ Mechanisms for accessing information in EHCRs
- ▶ The intention is that the standard should be used for all kinds of electronic healthcare records
 - ▼ ...used in all parts of the Norwegian health service
 - ▼ ...containing all kinds of information
- ▶ The standard does not include specifications of clinical content

The Norwegian EHCR standard

- ▶ The standard is based upon the European pre-standard ENV13606-1, Electronic Healthcare Record communication: Extended Architecture
 - ▼ But the scope of the Norwegian standard is much wider
- ▶ Important goals with the standard is to
 - ▼ Show how the provision of law should be handled in EHCR systems
 - ▼ Ensure that the EHCRs are secured as a source of information for the present and the future
- ▶ A standard for communicating EHCRs has also been published The standard covers communication of:
 - ▼ Standardised EHCR content
 - ▼ Un-standardised EHCR content
 - ▼ Requests and answer to request concerning EHCR

Organising the EHCR content

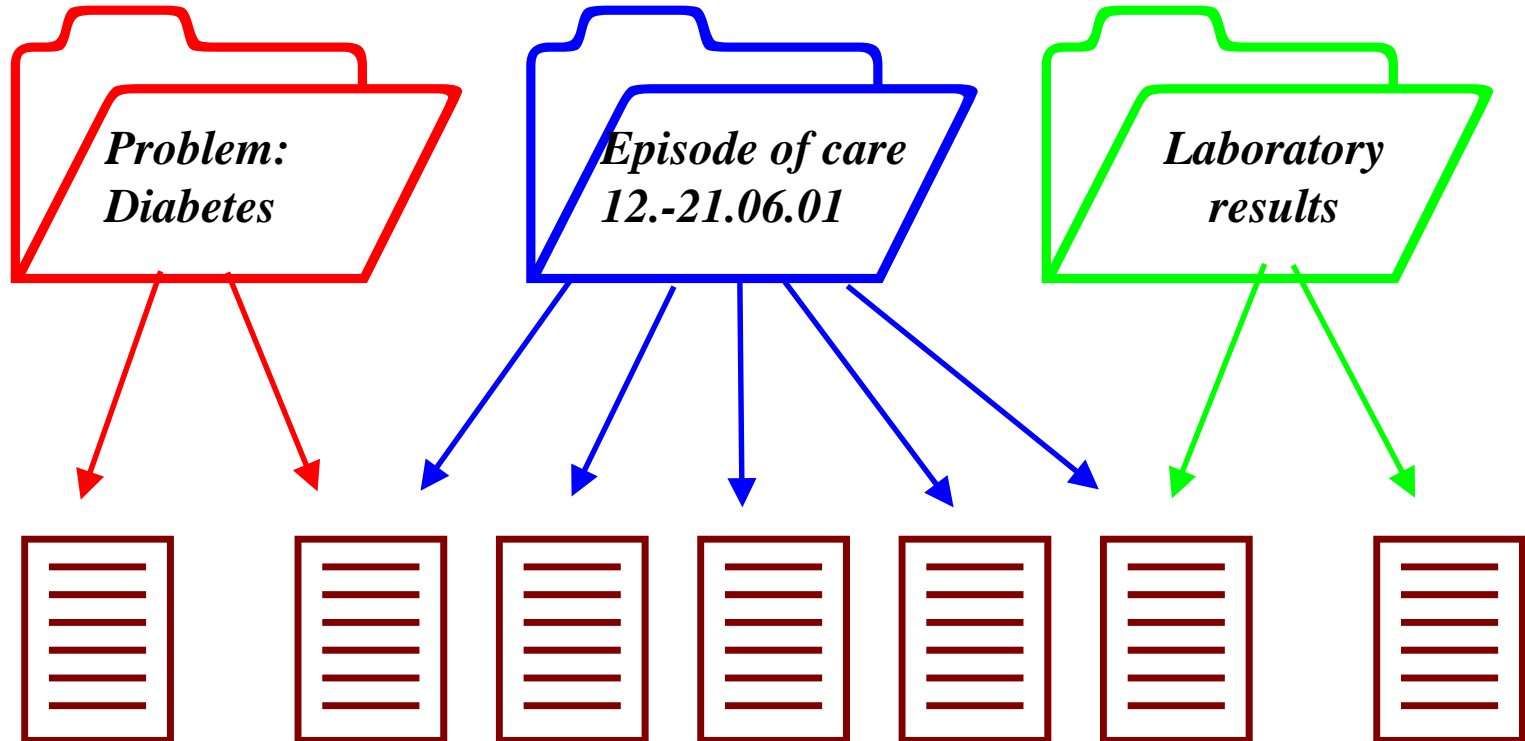
- ▶ **The EHCR consists of components in a structure**
- ▶ **The same EHCR may contain several different hierarchical structures**
 - ▼ **It should be possible to have the EHCR organised by different principles at the same time, e.g. by process, problem and topic**
- ▶ **Each record component may be a part of several structures**
 - ▼ **Each component has an original context (the EHCR component which it originally was recorded as a part of)**

The Folder

- ▶ A *Folder* is a high-level subdivision of a patient's EHCR
- ▶ A *Folder* may include information collected and recorded at different times and by different people
- ▶ A *Folder* may contain:
 - ▼ Other *Folders*
 - ▼ *Compositions*
 - ▼ *Link Items*
- ▶ *Folders* may be used to create different views of the EHCR
 - ▼ Views related to processes, episodes of care, activities etc.
 - ▼ Views related to topics like medication, laboratory results etc.
 - ▼ Views related to problems. Some may be related with a specific diagnosis, others may be more vaguely specified
- ▶ *Folder Templates* may be used for constraining the content of *Folders*

Folders and Compositions

Folders

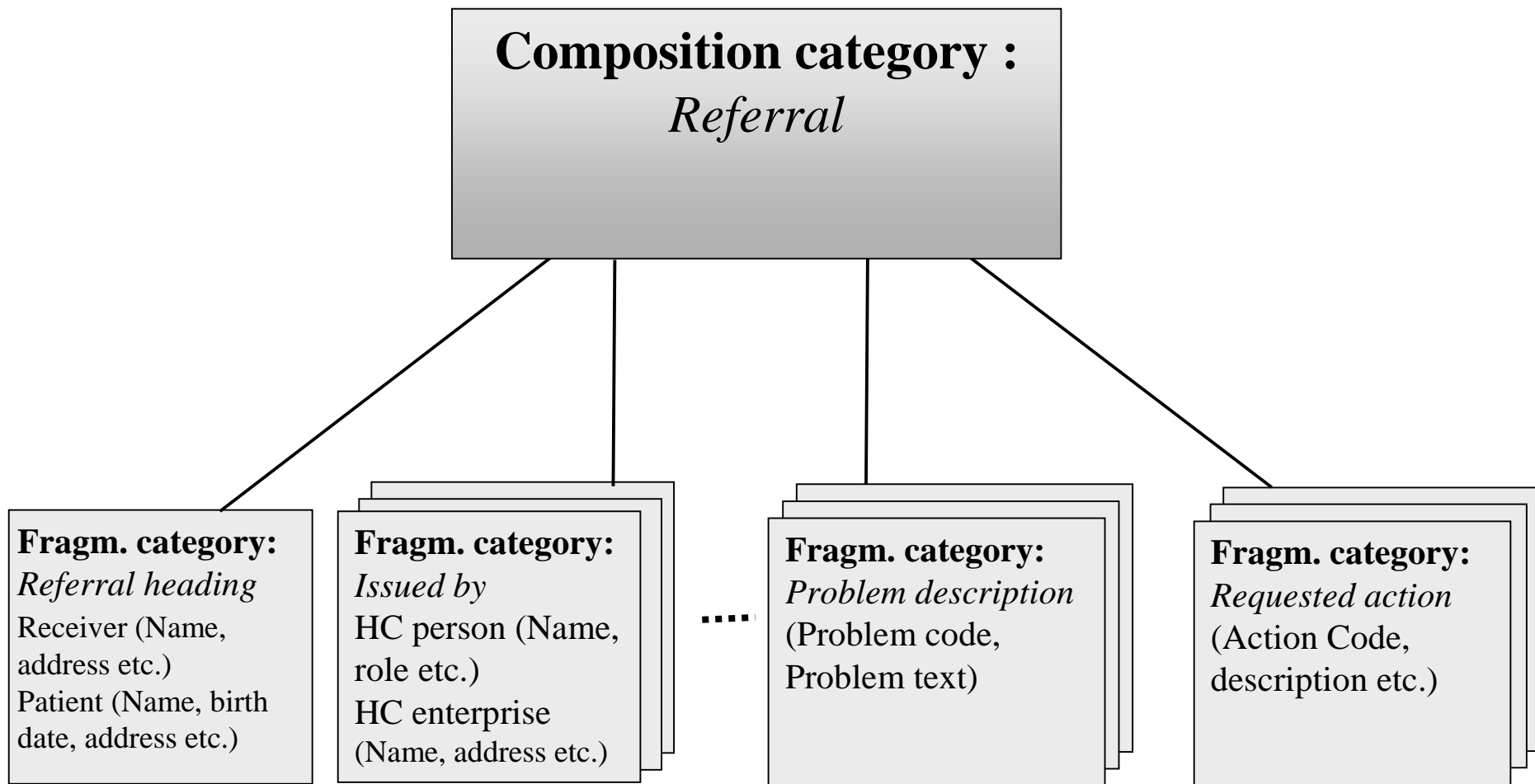


Compositions

The Composition

- ▶ **A *Composition* contains information that**
 - ▼ ...relate to one time and place of care delivery recorded in a single session or
 - ▼ ...represent a single document received from a third party and included in the EHCR
- ▶ **A *Composition* may contain**
 - ▼ *Fragments*, including fragments that originally were entered as parts of other *Compositions*
 - ▼ *Link Items*
- ▶ **A *Composition* should always be approved as a whole**
 - ▼ All *Fragments* that it contains, are approved along with the *Composition*
- ▶ ***Composition Templates* may be used for constraining the content of *Compositions***

Compositions and Fragments



The Fragment

- ▶ A *Fragment* is used to represent a sub-division within a *Composition*, the contents of which have a common theme or are derived through the same healthcare process
- ▶ A *Fragment* may contain
 - ▼ Other *Fragments*
 - ▼ *Data Items*
 - ▼ *Link Items*
- ▶ A *Fragment* is approved as a part of the *Composition* it is contained within
- ▶ *Fragment Templates* may be used for constraining the content of *Fragments*
- ▶ *Fragments* covers the roles of both *Headed Sections* and *Clusters* in ENV13606-1.
 - ▼ It is the template used for constraining the content which determines whether a *Fragment* is a *Headed Section* or a

The Data Item

- ▶ The *Data Item* represents the smallest structural unit into which the content of the EHCRC can be broken down without losing its meaning
 - ▼ A *Data Item* may be an aggregate of information that cannot be safely disaggregated.
- ▶ A *Data Item* is an undividable a part of one, and only one, *Fragment*
 - ▼ It may only be reused as a part of that *Fragment*
- ▶ Several specialisations of *Data Item* is specified
 - ▼ Character String Item
 - ▼ Integer Item
 - ▼ Real Number Item
 - ▼ Coded Value Item
 - ▼ etc..
- ▶ *Data Item* templates may be used for constraining the content of *Data Item*

Links and references

- ▶ The *Link Item* is used for creating links between all kinds of components in the EHCR
 - ▼ The *Link Item* includes a "link category" attribute describing the general nature of the relationship between the linked components
 - ▼ If a new revision of a component is created, a *Link Item* is used for creating a reference between the previous and the current version of the component
- ▶ References may be created to components in other patients' EHCRs
- ▶ References may be created to components in EHCRs concerning the same patient, in other healthcare enterprises

Component properties

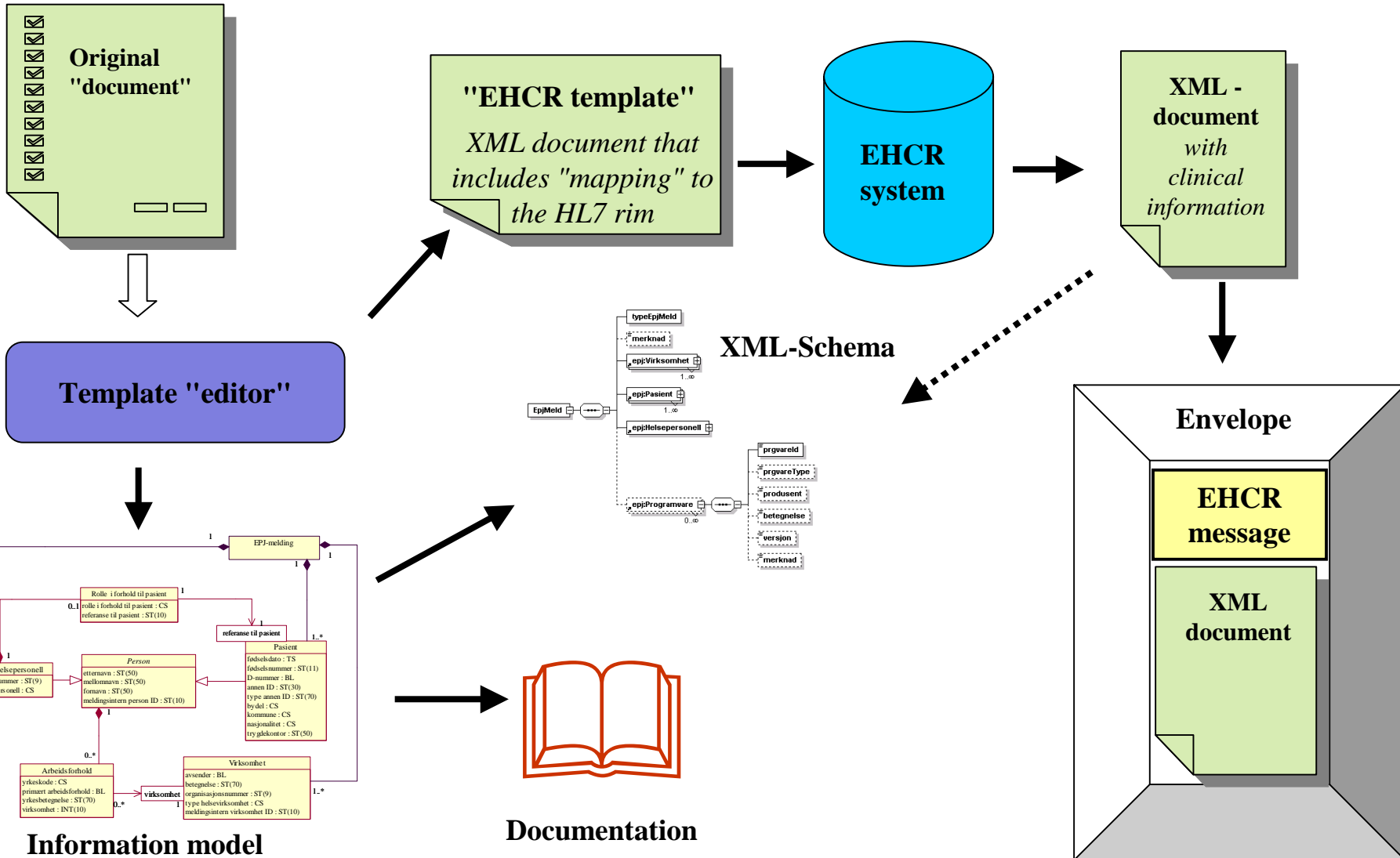
- ▶ **All changes (except deletion) refers to a revision**
 - ▼ **Revision information includes:**
 - ▾ Time of revision, revision made by (Person), responsible *Service Provider*, *Service Provision* reference
- ▶ **Other component properties**
 - ▼ **Events concerning the component as such**
 - ▾ Registration started/ended, component approved etc.
 - ▼ **Information source**
 - ▼ **Information concerning distribution**
 - ▼ **Signal information**
 - ▼ **Time limit warnings**
 - ▼ **Information category and purpose**

The use of templates

- ▶ **Templates describes how record components should be assembled in order to represent specific EHCR content.**
 - ▼ Each component of the EHCR contains a reference to a template
- ▶ **The templates created so far have been published as tables in Word documents**
- ▶ **A new revision of the template information model is ready**
 - ▼ This includes the use of the CEN/TC251 subset of HL7 data types
 - ▼ The model also includes mapping of the information to the HL7 RIM
- ▶ **A new template editor will be ready by December**

▶ **Templates will then be published as a UML diagrams and XML documents**

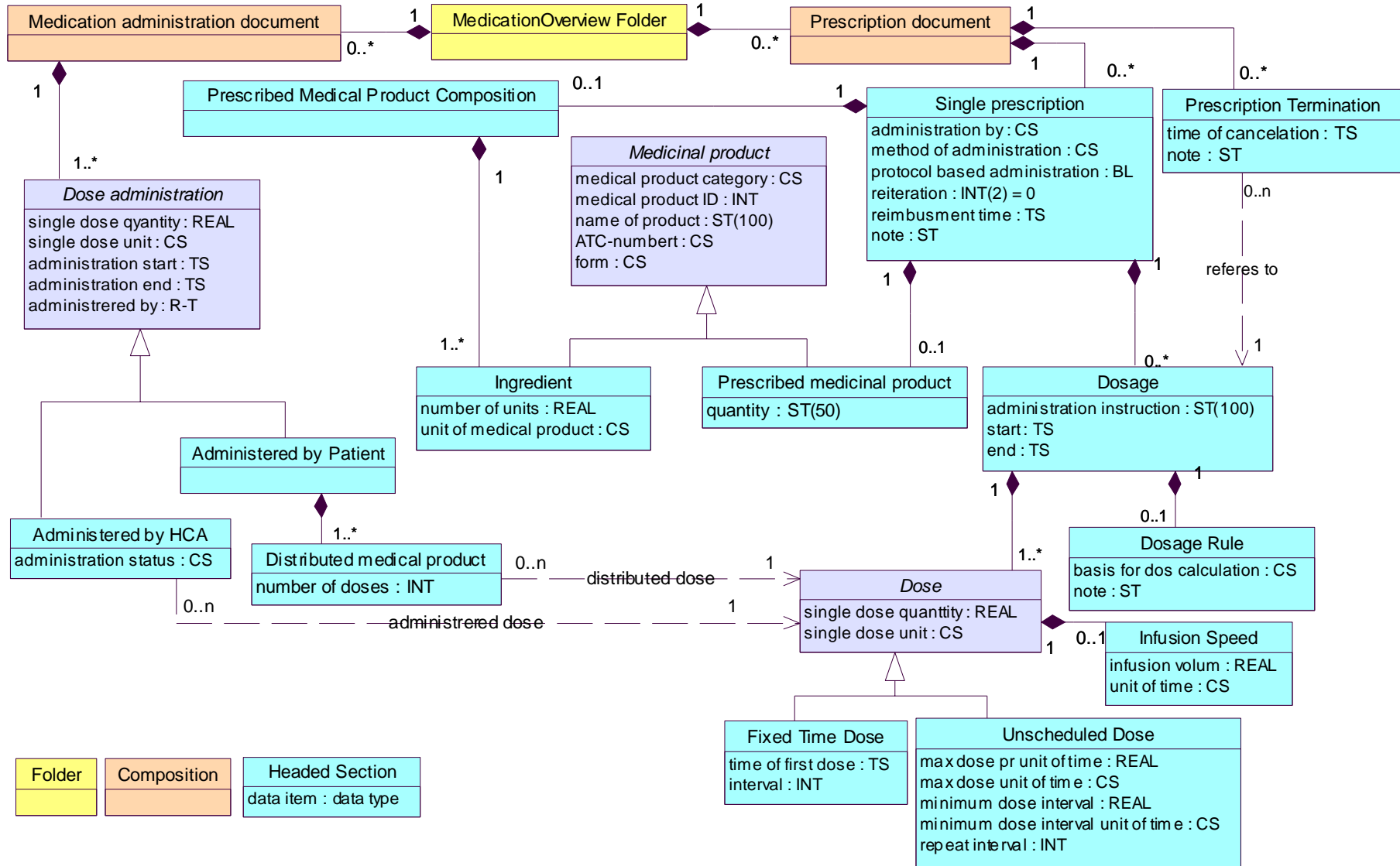
Template development



EHCR content standards

- ▶ **The basic EHCR standard includes standards for the "non-clinical" content of the EHCR**
 - ▼ **Persons, organisations, roles etc**
- ▶ **An extensive standard for the content of EHCR intended for us at mother and child health centres and school health services have been published**
- ▶ **A standard for medication handling will be published this autumn**
 - ▼ **This standard is based in part on the Danish medication standard**
- ▶ **Information standards for the content of community health services EHCRs will be published in April 2003**
- ▶ **Other standards will follow...**

Medication templates



Access Control

- ▶ Access should only be granted if an explicit decision on performing a healthcare related task has been taken by a authorised *Service Provider*
- ▶ A *Decided Task* identifies the purpose of access and which parts of the EHCR that may be accessed
- ▶ A *Service Provider* is a *Person* who acts in a *Role* providing healthcare related services
- ▶ A *Service Provision* connects a *Service Provider* with a *Decided Task* and opens access to (a part of) the patients EHCR

Roles and Tasks

- ▶ **A *Role* describes:**
 - ▼ Which tasks the person who acts in the role may decide to initiate
 - ▼ Which tasks the person who acts in the role may carry out or assist with
 - ▼ Information concerning other kind of access rights may also be connected to roles
- ▶ **A *Role* may be connected to departments or other parts of healthcare organisations**
- ▶ **Tasks may be nested**
 - ▼ Some categories of *Decided Tasks* may only be recorded if a task of some specific category have been recorded in the EHCR in advance

Patient Consent

- ▶ **The Patient may deny healthcare professionals access to their EHCR** (there are exceptions)
 - ▼ **The EHCR standard includes mechanisms for handling the Patient's wishes when it comes to accessing the EHCR**
 - ≡ Demands for explicit Patient consent may be put upon limited parts of the EHCR, e.g. a single EHCR Folder
 - ≡ Named persons may be denied access
 - ≡ Patient consent may be granted in advance for some specific tasks while other tasks may require explicit consent
 - ▼ **Consent may be given for all *Service Provisions* related *Decided Task* or be limited to a single**

Access control principles

