EPJ-Observatoriet 2002, Nyborg

The use of international Health IT standards

CEN EHR communications task force
- are we getting closer to an operational international EHR standard?

Dr Dipak Kalra

Clinical Senior Lecturer
Centre for Health Informatics and Multiprofessional Education (CHIME)
University College London
d.kalra@chime.ucl.ac.uk

Why standardise EHR communication?

- Patient care requires access to longitudinal health information
  - to manage complex health care safely
  - to share care between teams and enterprises
- Patients wish to play an active role in their health management
- Much of the necessary fine grained clinical information cannot be exchanged between heterogeneous systems
- EDIFACT or HL7 based message sets do not deal with the requirement to exchange parts or whole EHRs between systems

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ENV 13606: EHCR Communication

Part 1: Extended Architecture

Part 2: Domain Termlist

Part 3: Distribution Rules

Part 4: Messages for the Exchange of Information

Published in 1999 - intended for review and potential revision after three years

Hence the EHRcom Task Force!

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Timetable for the EHRcom Task Force

- May 2002: INitial Report
- Jan 2003: First Working Draft
- Jul 2003: consolidated response to ENQuiries
- Jan 2004: Final draft for Formal Voting

Inputs to the revision process

Implementation experience

- Industry: direct experience of ENV13606 implementation
- Industry fora
  - e.g. via ProRec Centres and EHTEL
- National or regional EHR demonstrator sites
- OpenEHR
  - combining UCL and Australian record server and archetype implementations
- ENV 13606 - academic systems and prototypes
- Any other comprehensive and open EHR architectures in clinical use

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Inputs to the revision process

Health information stakeholders

- Patient groups and legislation
- Healthcare professional groups
- Regional and national policies and projects, taking healthcare delivery and scientific change into account
  - e.g. trends in bioinformatics
- Other CEN standards
  - e.g. GPIC, HISA, Categorial structures, ContSys
- International health informatics standards e.g. HL7, OMG HDTF (CORBAmed)
- Requirements sources e.g. ISO 18308 (draft)
  - incorporating requirements from GEHR, Synapses, EHCR-SupA, I4C, RICHE, Nucleus, SPRI, US sources and many other projects

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Inputs to the revision process

R&D results

- EHCR SupA recommendations to CEN
- Synapses and SynEx federated health record services
- InterCare and PICNIC tele-health record systems
- I4C integrated cardiac records, based on ORCA
- HANSA and its ancestors
- HARP security and record components
- Many other projects….

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Scope of the new standard

- To produce a rigorous and durable information architecture for communicating the EHR
- in order to support the interoperability of systems and components that need to interact with EHR services
  - as discrete systems or as middleware components
  - to access, transfer, add or modify health record entries
  - via messages or distributed objects
  - preserving clinical meaning
  - protecting confidentiality

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The new standard must provide for the purposes of the original 4 parts

- A generic information model of an EHR “extract”
- A mechanism for representing and communicating the semantic content inherent in the structure of EHR instances
- Properties of the EHR necessary to represent the intended sensitivity of the entries in it and who can access those entries
- The interactions between requesting and responding processes or systems to enable EHR communication

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Requirements to be considered in revising the existing pre-standard

The work will build on the existing pre-standard ENV 13606, seeking to modify it in order to:

- ensure the model is more rigorous or complete
  - e.g. formally specifying the information contexts of each entry
  - e.g. representing the full range of data types
- include the Archetype methodology for the communication of EHR clinical domain hierarchies and constraints
- enable the EHR to interoperate with HL7

The Task Force will also publish a mapping from the existing pre-standard to support implementers of existing conformant systems.

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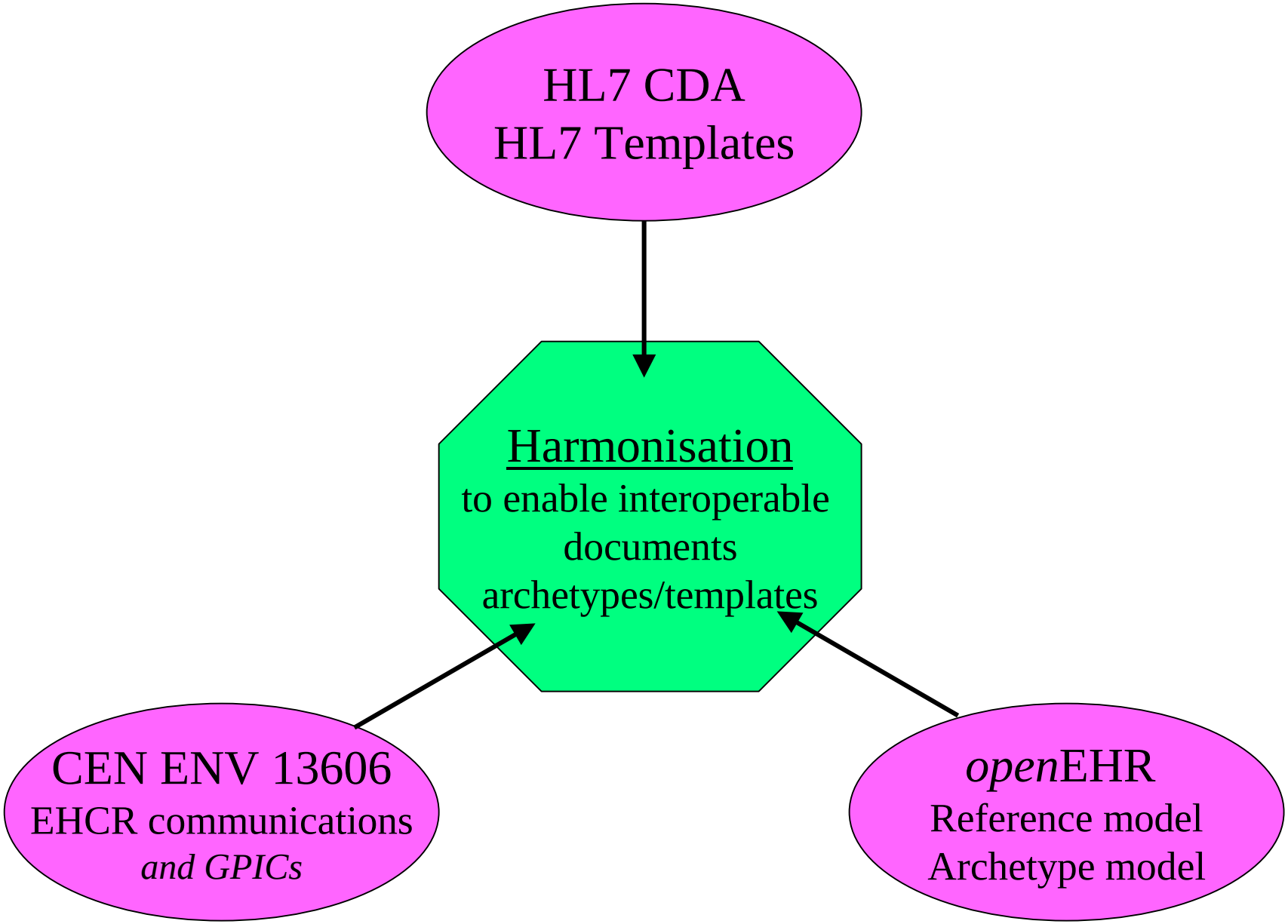
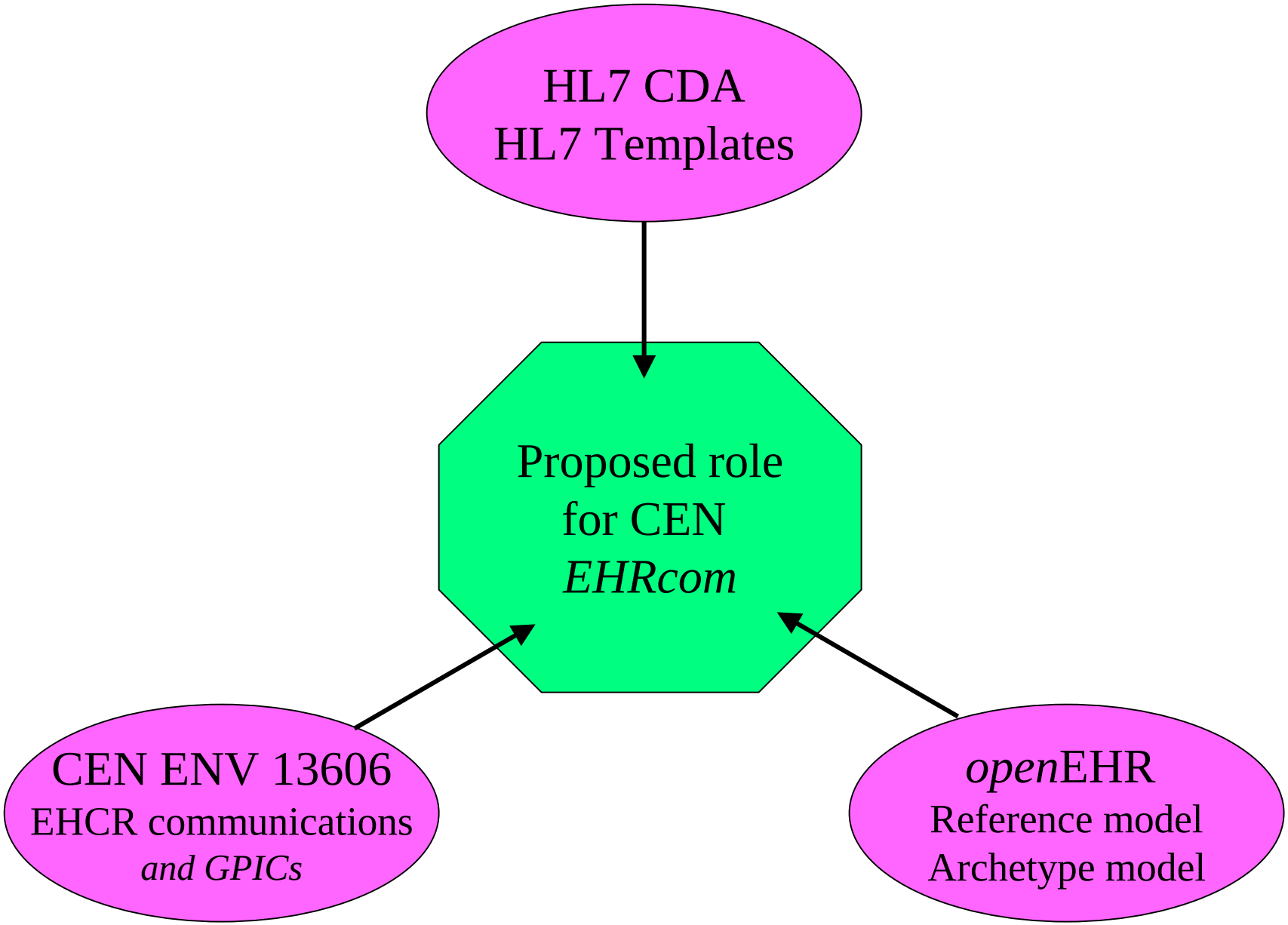

HL7 CDA
HL7 Templates
Harmonisation
to enable interoperable
documents
archetypes/templates
CEN ENV 13606
EHCR communications
and GPICs
openEHR
Reference model
Archetype model


HL7 CDA
HL7 Templates
Proposed role
for CEN
EHRcom
CEN ENV 13606
EHCR communications
and GPICs
*open*EHR
Reference model
Archetype model

Main proposed areas of change

- Agree that the focus is EHR communication or distributed access, not the internal model of an EHR system
- "Tighten" the reference model *(see next slide)*
- Incorporate archetypes
  - an archetype model
  - specific normalised archeypes
- Simplify distribution rules
  - focus on representing access control information, and re-use other (existing and new) security standards
- Avoid repetition that exists in the current Part 1 and Part 4

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"Tighten" the Reference Model

- Retain the main ENV classes
  - Folder, Composition, Headed Section, Cluster
- Provide more focused containment rules, making the role of each class more explicit
- Simplify the lower-level (Data Item) class structure, taking advantage of archetypes and of the new CEN data types
- Reduce excessive inheritance of attributes
  - put "context" attributes at the right hierarchical level
  - provide more explicit attributes, fewer "related" classes
- Aim to simplify the way revision information is communicated
  - needs further discussion

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Collaboration with other standardsisation efforts

- Adopt the new CEN data types
  - but provide input on their design
  - Provide an archetype methodology to extend these for EHR specific complex data representations
- Adopt a “simplified” GPIC and/or HISA proposal for the communication of identifiers and demographics about health care parties
- Collaborate with HISA on access control information and HISA-defined security services
- Collaborate with HL7 on the CDA and templates to optimise 2-way interoperability
  - hopefully simplifying Europe for our vendors, and opening up international markets

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Collaboration with HL7

Affirming the real possibility of harmonisation in Paris (Oct 2002)

- Presentation from Mark Shafarman
  - representing the viewpoint of HL7
  - stressing the value of 3-way co-operation:
    - HL7 (RIM, CDA, Templates)
    - openEHR (Reference model, archetypes)
    - EHRcom
  - He recommends that EHRcom needs to extend the level of detail in 13606 - to be more precise

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Collaboration with *open*EHR

- *open*EHR is providing input to the EHRcom Task Force e.g. on archetypes
- *open*EHR will track the evolution of the 13606 revision and try to produce an example reference implementation
  - to validate the proposed models
  - as a guide to commercial implementers
- Other tools will be produced later, e.g. supporting data migration from the current pre-standard

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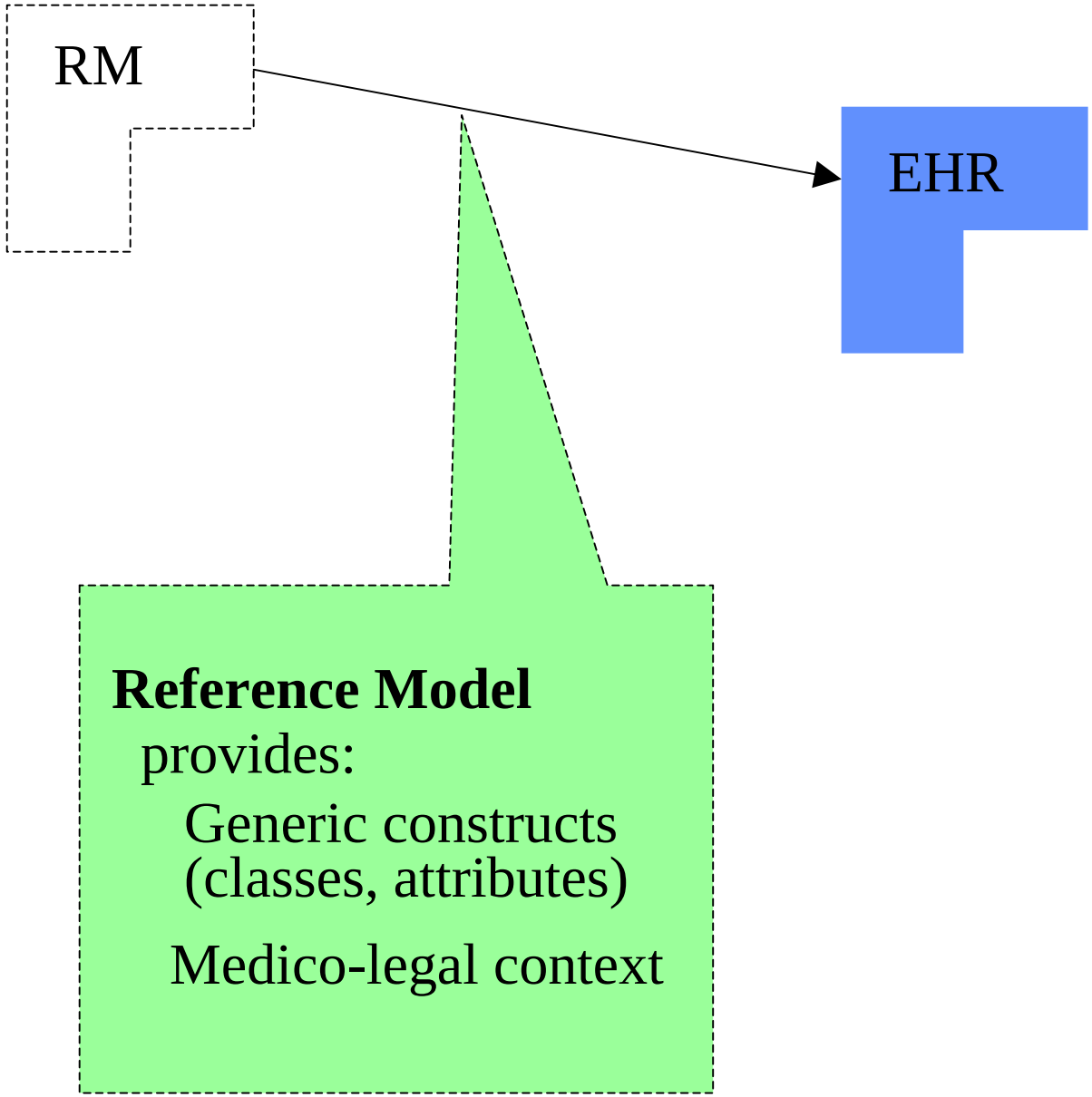
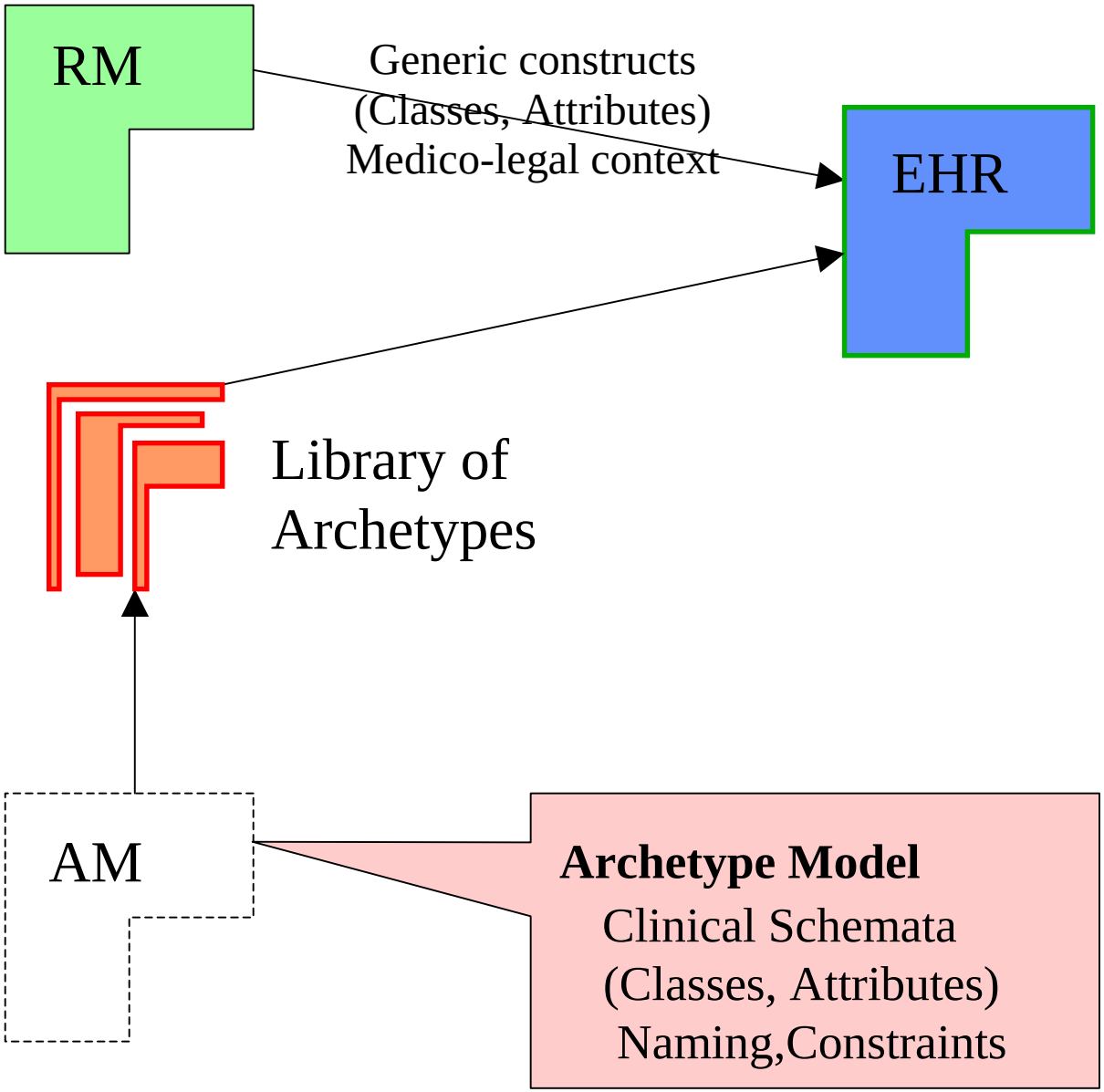
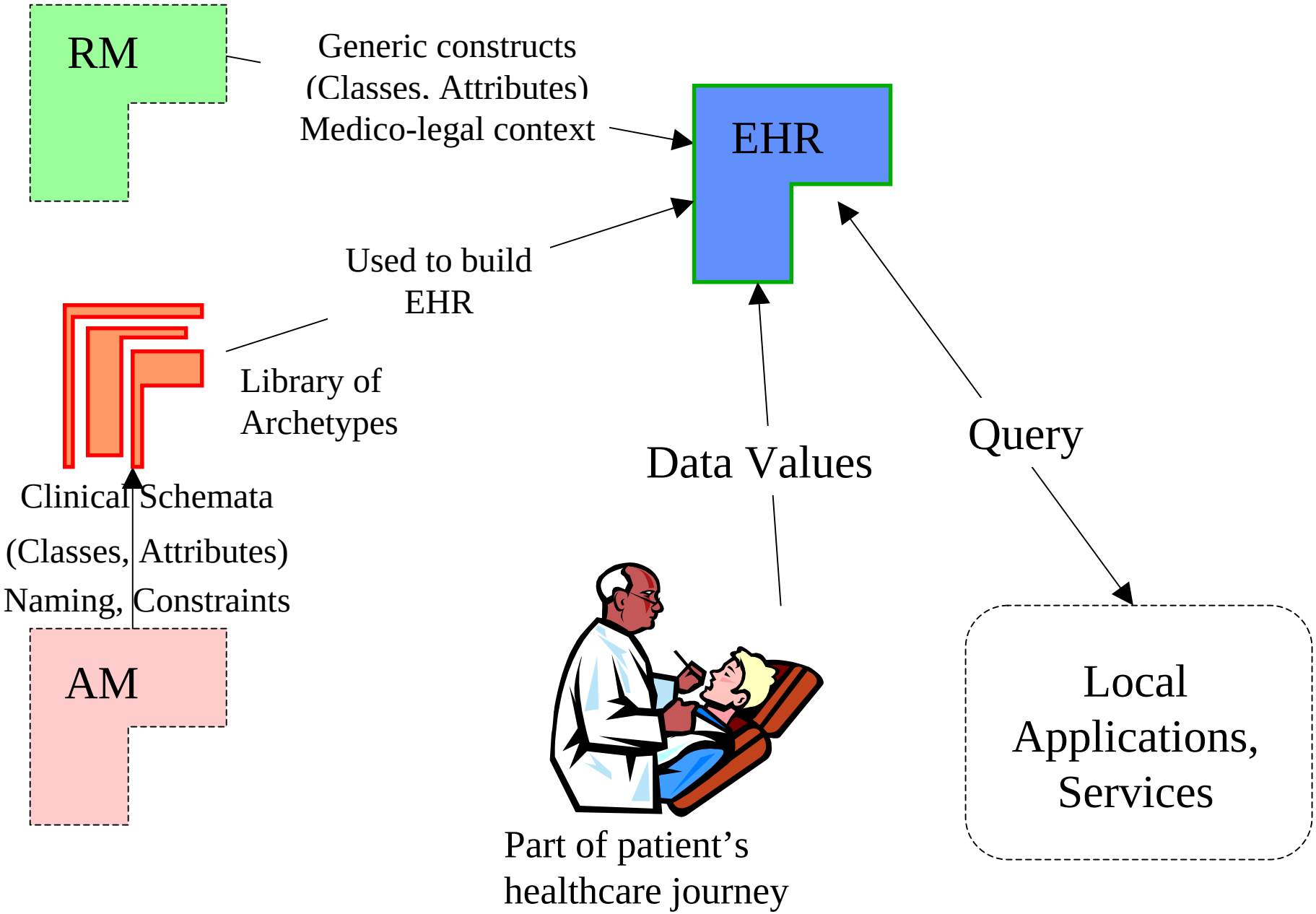
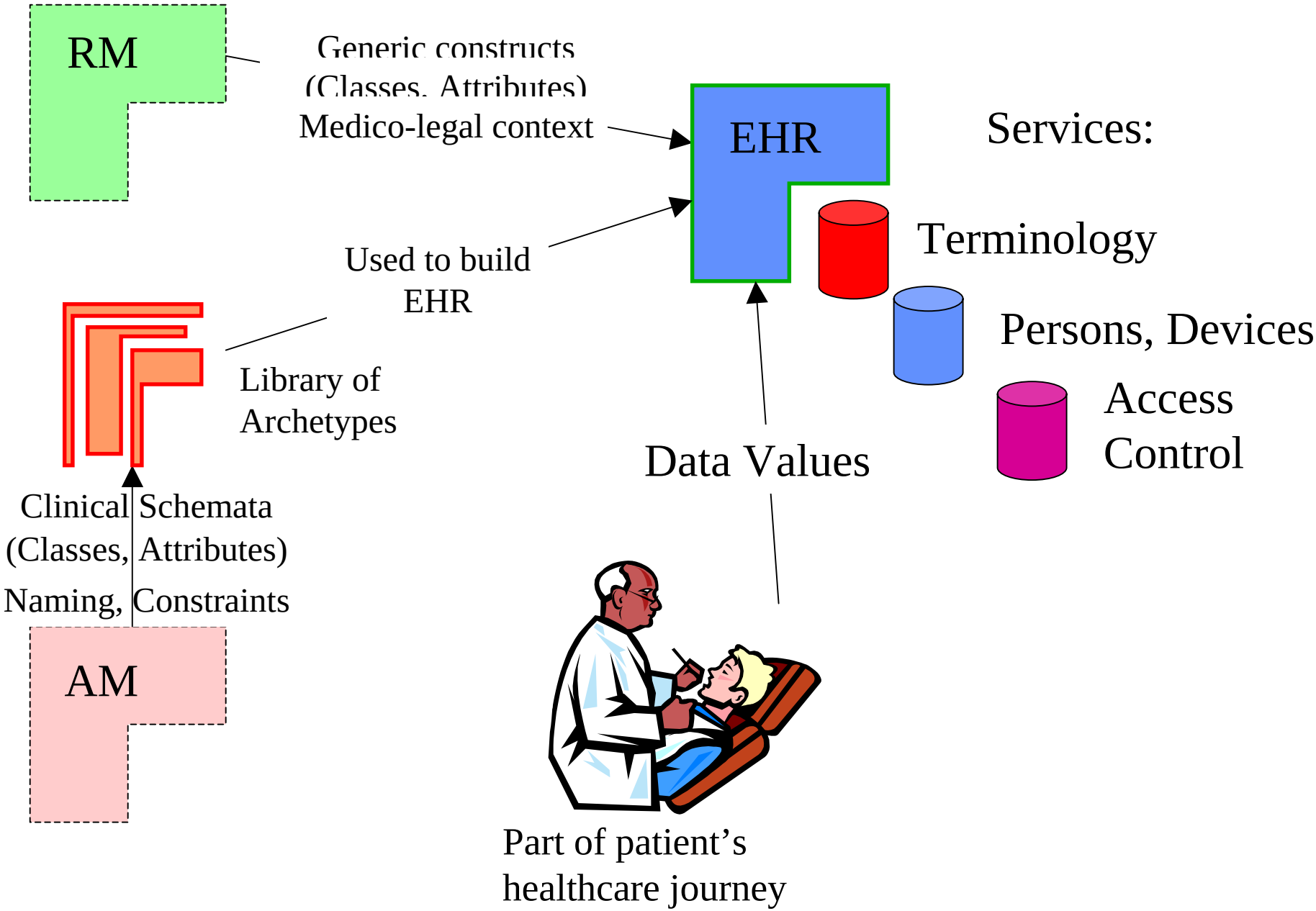
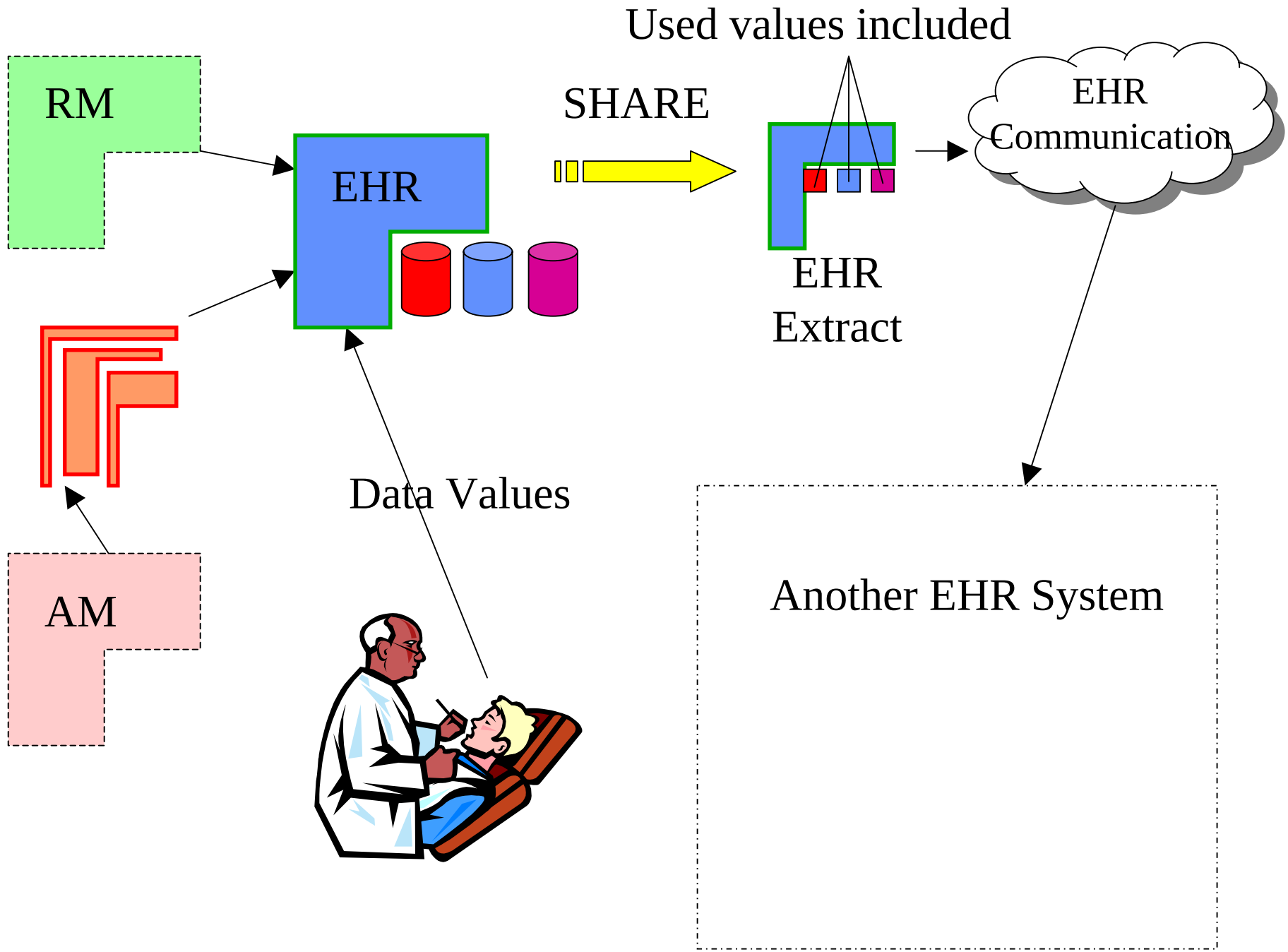
The Two-model approach

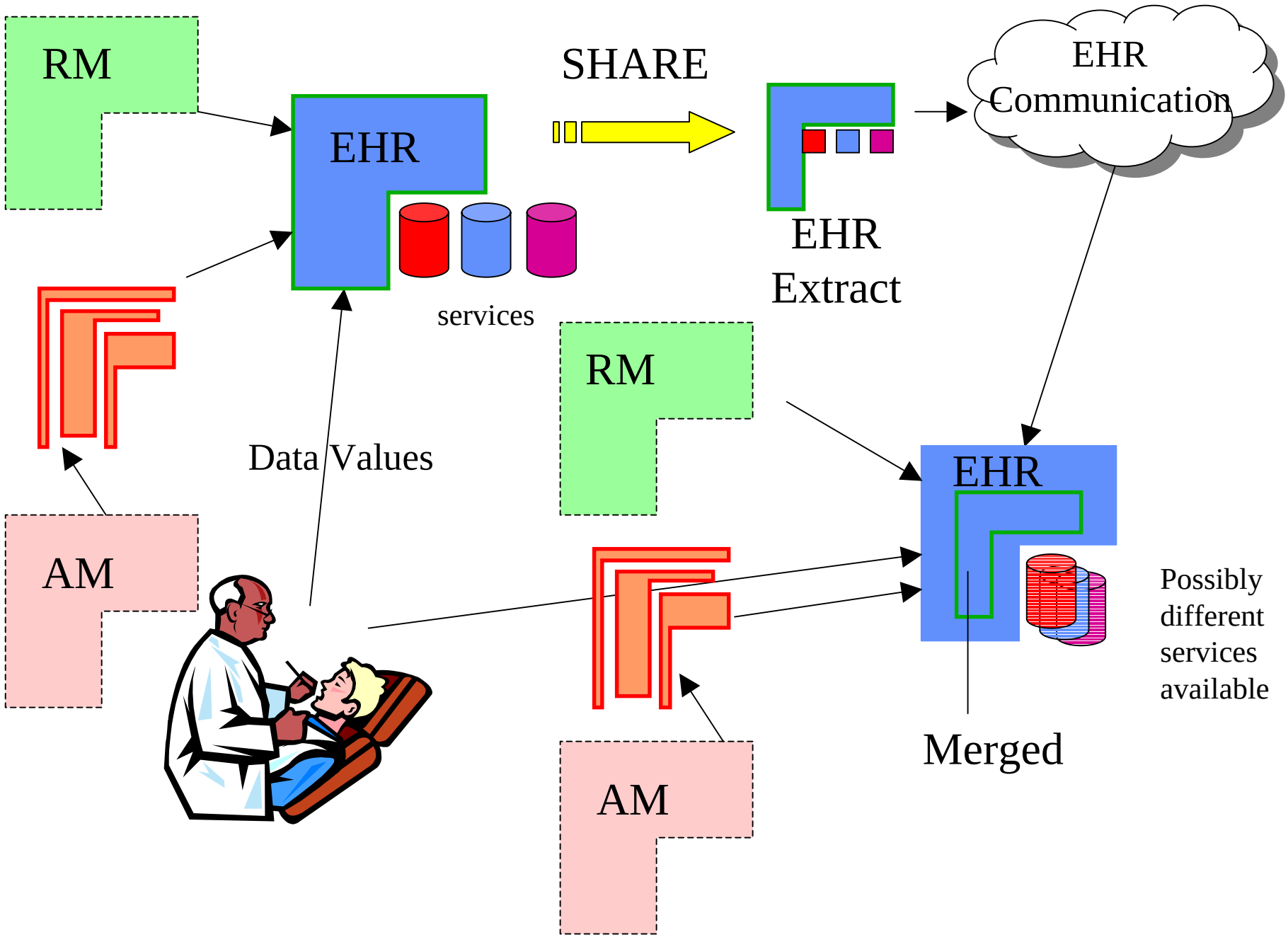



RM
Generic constructs
(Classes, Attributes)
Medico-legal context
EHR
Library of
Archetypes
AM
Archetype Model
Clinical Schemata
(Classes, Attributes)
Naming,Constraints


RM
Generic constructs
(Classes. Attributes)
Medico-legal context
EHR
Used to build
EHR
Library of
Archetypes
Clinical Schemata
(Classes, Attributes)
Naming, Constraints
AM
Data Values
Query
Local
Applications,
Services
Part of patient's
healthcare journey


RM
Generic constructs
(Classes, Attributes)
Medico-legal context
EHR
Services:
Terminology
Persons, Devices
Access
Control
Used to build
EHR
Library of
Archetypes
Data Values
Clinical Schemata
(Classes, Attributes)
Naming, Constraints
AM
Part of patient's
healthcare journey


Used values included
RM
SHARE
EHR
EHR
Communication
EHR
Extract
Data Values
AM
Another EHR System


RM
EHR
SHARE
EHR
Communication
EHR
Extract
services
RM
Data Values
EHR
AM
Possibly
different
services
available
AM
Merged