(New-) GUIDE

University of Pavia, Italy

Silvana Quaglini, Anand Kumar, Paolo Ciccarese
Flowchart-like formalism

Aims:

Guidelines representation
   Educational tool
   Explanatory tool

Guidelines enactment (in connection with the EPR)
   As a stand-alone tool (e.g. guidelines for medical practitioners)
   As a basis for a Workflow Management tool (e.g. guidelines For Healthcare Organisations)
Guideline representation

1- General information about the guideline

2- Guideline medical knowledge
Guideline general description (mainly drawn from the GEM proposal)

```xml
<GUIDELINE>
  <PROPERTIES>
    <GLPROJECT>
      <GLTITLE>
        HYPERTENSION MANAGEMENT
      </GLTITLE>
      <NAME>
        FORMALISMS COMPARISON
      </NAME>
    </GLPROJECT>
  </PROPERTIES>
</GUIDELINE>
```
Sources, Documents, Related Guidelines
Releases (dates and developers)
Purposes

From National Guideline Clearinghouse
Implementation Site
Users
General settings

Guideline Properties

Care Settings

Add | none | Clear | New

Users

Specific Users

Add | none | Clear | New

General Setting

Add | none | Clear | New

- Allied Health Care Practitioners
- Health Care Providers
- Health Plans
- Hospitals
- Managed Care Organizations
- Public Health Departments
- Utilization Management
Eligibility criteria

Addressed sub-population

Further sub-population specification
Outcomes
Evaluation studies

![Guideline Properties window](image)

<table>
<thead>
<tr>
<th>External Review</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Role</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Buttons: Remove row, New row, Clear all
These properties are useful for

- Documentation
- Guideline quality checking
- Guideline evaluation

Some of them (e.g. outcomes) must have a correspondence with EPR or HIS information
Guideline components

- start
- task
- deterministic One-of/Or
- non determ. One-of/Or
- wait
- monitor
- stop

Synchronisation tags
Start
... Start is not only at the GL top entry point
Topology and appearance
Tasks

Calling procedures (e.g. acting on the patient database)
**Scientific evidence level**

**Topic for discussion:**
Task1: Recommended (if not done, *rush* may occur)
Task2: Recommended (if not done, *death* may occur)

Of course, Task2 requires more attention than Task1, even if the scientific evidence level used for producing the recommendations is the same
Subnets
Creating the subnet *child* of “task”

No conditions on the arcs
... subnets
Deterministic one-of
Deterministic one-of end
Deterministic one-of end
Monitor
The Hypertension Guideline
“Determine patient state” subnet
... Hypertension guideline
Guideline enactment

The environment is the data entry forms
Database management

- Structuring a database for generic use including the maintainence of the semantic hierarchy.
- For example
- Symptom
  - Symptom parameter
  - Symptom patient parameter

Diagnosis
  - Diagnosis parameter

Abstraction tables with abstraction levels depending on the patient data entry
Database structure example

- Pain (Symptom)
- Symptom parameters
  - Site
  - Type
  - Referral
  - Aggravating factor
- Patient Parameter
  - Chest
  - Heaving
  - Back
  - Exercise
SQL repositories

- Difficulties of single line task use as SQL
- Generic SQL structuring for common conditions on the database structure (taking into account the fact that the patient-specific tables might be owned by another administrator)
- Storage of those SQL into a repository inside the Guideline engine
- Calling the SQL as procedures from the task
Web-page development

• Essential variable determination from Guideline tasks (XML)
• Generic webpage development system eg. Cocoon
• Essential variables added by default to the webpage and further variables and decision support tables added according to the situation
Advantages of the structure

- Platform for change from one guideline to another
- Semantics for such changes
- Reusability of the data and the data processing codes
- Data referral platform