Implementation and Experimentation of TEDIS: an Information System Dedicated To Patients With Pervasive Developmental Disorder

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Introduction (1):

Pervasive Developmental Disorder (PDD) an extension of the concept of AUTISM.

Association of disorders:
- difficulties to communicate
- impaired social interactions
- restricted, repetitive and stereotypes of behavioral patterns
- presence or not of mental delay
Dept of child psychiatry at Necker hospital

50 patients / year benefit from expert’ assessment : to qualify the handicap,
  • its long term character,
  • to recommend therapies and to
  • support patients seeking benefit from specialized care and consequent medical coverage

Follow-up assessment / 18 months.

Need for a DBMS raised
Dept of Medical Informatics: proposition

- Organize PDD patients sets into longitudinal, multi-centric study population (cohort).
- Direct involvement of medial experts in specifying the electronic patient record contents, in feeding the system and guaranteeing data quality.
- Request support of professionals in clinical data management.
TEDIS: Troubles Envahissants Développement Information System

**Lightweight Client**

- TEDIS - Neurologie - Psychiatrie - Bilan initial
- ID database
- Production database
- Data warehouse

**Middleware**

- Dynamic web server
- Business logic
- SSL
- ID database
- MySQL

**Information System**

- Consolidation
- Response
- Request
- Transactions

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## Preliminary results (1)

<table>
<thead>
<tr>
<th><strong>40 patients</strong>: 37 boys, 3 Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>[29 yrs avg:5 yrs]</td>
</tr>
</tbody>
</table>

- 26 had PDD’ main diagnosis associated with mental delay,
- 14 had only PDD’ diagnosis
- 17 had no prior diagnosis
- 14 had inadequate diagnosis
- 9 had diagnosis confirmed after assessment
## Preliminary results (2)

### Table 1: Therapy measures Prior / after expert assessment

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Prior</td>
<td>29</td>
<td>8</td>
<td>12</td>
<td>3</td>
</tr>
<tr>
<td>After</td>
<td>28</td>
<td><strong>21</strong></td>
<td><strong>25</strong></td>
<td>21</td>
</tr>
</tbody>
</table>
Preliminary results (2)

Table 2: Schooling Prior / after expert assessment

<table>
<thead>
<tr>
<th>Expert assess.</th>
<th>Total</th>
<th>Normal</th>
<th>Adapted</th>
<th>Special</th>
<th>Outpat clinic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prior</td>
<td>28</td>
<td>6</td>
<td>18</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>After</td>
<td>28</td>
<td>0</td>
<td>19</td>
<td>6</td>
<td>3</td>
</tr>
</tbody>
</table>
Dept of child psychiatry at Necker hospital

• Professionals' adherence to the process of feeding TEDIS and enthusiasm to system feedback results,

• Recommendations within the child psychiatry dept to systematically document the patient paper record,

• Essential role of a clinical research assistant in data quality control
Dept of Medical Informatics: challenges

- Keeping up with software technology evolution, versioning, compatibility, portability, etc.

- Decisions: only use open source software or keep using still free software (Java, MySql) with uncertainty when they will be charged,

- Light weighted client / rich client (deployment issue)
Conclusion

Modelling medical domains remains a challenging and rewarding task. It has to fit with the professionals’ needs in daily use in clinical settings and to support collaborative team work.

Standards, usability, modularity, scalability and interoperability are keywords to keep in mind during the life cycle processes of an information system.
TEDIS : Thanks to the professionals at Necker Hospital – Paris - France

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