Materials, Methods and Data Analysis of Diabetes Registers

The Diabetes Register of Primary Health Care of Skaraborg, Sweden

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Special BIRO Academy Meeting
“Coordinated Information Delivery from Diabetes Registers to improve quality and outcomes in Europe”
Rome 4-5th June 2010
Primary Health Care of Skaraborg, Sweden

Reference Population

Country: Sweden
Region: Västra Götaland
Study area: District of Skaraborg with 15 municipalities
Total Population: 252407
Diabetes Prevalence: 4.1%
Type of Data Sources: Computerized medical records in Skaraborg Primary Health Care.

N. Participating Centres: Data from 24 Health Care Centres
Continuation...

- About 250,000 HCC visits each year.
- 75% of all drug prescriptions were issued by the Primary Health Care of Skaraborg.
- Diabetes Mellitus registered in 80-90% of cases (ICD 10)
- Hypertension, registered in 80-90% of cases (ICD 10)

Number of inhabitants in Skaraborg, having Diabetes Mellitus per 1000 inhabitants. Year 2007. Men and women.

<table>
<thead>
<tr>
<th>Agegroup</th>
<th>No. of diabetics per 1000 inhabitants</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-14</td>
<td>0,3</td>
</tr>
<tr>
<td>15-24</td>
<td>0,2</td>
</tr>
<tr>
<td>25-34</td>
<td>0,5</td>
</tr>
<tr>
<td>35-44</td>
<td>1,5</td>
</tr>
<tr>
<td>45-54</td>
<td>4,0</td>
</tr>
<tr>
<td>55-64</td>
<td>9,0</td>
</tr>
<tr>
<td>65-74</td>
<td>10,7</td>
</tr>
<tr>
<td>75-84</td>
<td>10,6</td>
</tr>
<tr>
<td>85+</td>
<td>4,3</td>
</tr>
<tr>
<td>Total</td>
<td>41,1</td>
</tr>
</tbody>
</table>

The structure of data retrieval from HHC.

24 Health Care Centres (HCC)

Medical journals

SPCD updates (1-2 times per year)

ARBFIL

EMA

NDR

ID2PAT

Xtractor

Xtractor Files

SPCD

BIRO

National registers

Directorate-General for Health & Consumers
SPCD-database:

- Data since 1998. Last update: 2009-12-31
- 9 databases for one health care centre: laboratory data, drug prescriptions, ICD Codes, contact information, documents (referral letters), part of journal free text, therapeutic procedures, information on sick leave and postal codes X 24 HHC
Primary Health Care of Skaraborg
Local Database Structure: IT

The structure of data retrieval from HHC.
The retrieval of data to SPCD is done automatically at the clinical visit. Patient and staff identities are blinded. HCC are named by numbers.

The data from the SPCD can be linked to external databases, such as registers from Statistics Sweden and the Swedish Prescribed Drug Register, after permission from the Central Ethical Review Board.
Improvement, suggestion ("wish-list"):  
• export-function for reports to Excel-sheet format  
• export-function to save a report/graph as a pictures

About the user interface:  
• "Guides", dialog boxes when entering the configuration

About the software working together  
• What version of the different software's works with BIRO?
Skaraborg Primary Health Care, Sweden
Running BIRO: Data Quality Results

Type of Diabetes

<table>
<thead>
<tr>
<th>Type of Diabetes</th>
<th>0 - 34</th>
<th>35 - 54</th>
<th>55 - 74</th>
<th>75 +</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1</td>
<td>79 (35.11%)</td>
<td>158 (11.99%)</td>
<td>294 (5.36%)</td>
<td>189 (4.82%)</td>
</tr>
<tr>
<td>Type 2</td>
<td>13 (5.78%)</td>
<td>362 (27.47%)</td>
<td>1949 (35.50%)</td>
<td>1509 (38.45%)</td>
</tr>
<tr>
<td>Other Type</td>
<td>133 (59.11%)</td>
<td>798 (60.55%)</td>
<td>3247 (59.14%)</td>
<td>2227 (56.74%)</td>
</tr>
<tr>
<td></td>
<td>225 (2.05%)</td>
<td>1318 (12.03%)</td>
<td>5490 (50.1%)</td>
<td>3925 (35.82%)</td>
</tr>
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Proportion of HbA1c-levels

Skaraborg Primary Health Care, Sweden
Statistical Report: General Characteristics (Figures)
Skaraborg Primary Health Care, Sweden
Statistical Report: General Characteristics

- Known hypertension 60%
- Hypertension control <140/90 mmHg 22%
- All hypertension 75%
- BMI ≥30 kg/m² 35%
- BP (76%), BMI (90%), HbA1c (95%)
• Data quality: Data overall fairly complete
• Validity should be confirmed/improved (e.g. type of diabetes)
• Define study populations for comparisons between countries.
• Outcome may be better utilized for quality assurance at the HCC
• Surveillance of outcome and costs may be improved
Conclusions (3): BIRO usage

- More work on the user interface is needed.
- More facilities to integrate reports in different type of documents.
- More build-in-help when set up the configuration.
- Definition on what program version cooperate together with BIRO.
• Identify a cohort (2008) to follow prospectively in National Mortality Register and in hospital databases
• National prescription database for total drug utilization
• Health economics
• Biobanking
Thanks for the attention!