Development of a European enhanced CDI surveillance protocol at national level

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## Comparison with MRSA in Germany 2010

<table>
<thead>
<tr>
<th></th>
<th>MRSA KISS</th>
<th>CDAD KISS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospitals</td>
<td>268</td>
<td>122</td>
</tr>
<tr>
<td>Incidence density</td>
<td>13.2</td>
<td>7.2</td>
</tr>
<tr>
<td>(per 10,000 patient days)</td>
<td>MRSA cases, not infections!</td>
<td></td>
</tr>
<tr>
<td>Incidence density of</td>
<td>2.1</td>
<td>4.5</td>
</tr>
<tr>
<td>nosocomial cases</td>
<td>MRSA cases, not infections</td>
<td></td>
</tr>
<tr>
<td>(per 10,000 patient days)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
How many CDI do we have in Germany?

<table>
<thead>
<tr>
<th>Disease</th>
<th>Year</th>
<th>Annual number of infections in Germany</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nosocomial CDI *</td>
<td>2009</td>
<td>58,000</td>
</tr>
<tr>
<td>Nosocomial S.aureus infections *</td>
<td>2009</td>
<td>55,000</td>
</tr>
</tbody>
</table>

* Estimated number from surveillance data
Surveillance

... is information for action

- in the own hospital
- on a national/global level
Surveillance

... is information for action

- in the own hospital:
  - to observe the situation and to stimulate further infection control measures
  - To stop outbreaks and perform risk factor analyses
Surveillance

... is information for action

- **on a national/global level:**
  - to survey the development in the whole country (including risk factor analysis)
  - to analyse consequences of infections
Methods of CDI surveillance systems

Depend
- on the objective of surveillance
- available resources
- background
  (e.g. size of the problem in the individual country)
The most appropriate method should be selected according to these points.

However, in order to avoid too much variability a harmonized European protocol is needed.

ECDC HAI surveillance strategy in general:
- A light version
- A full version
The light version (Minimal dataset)

- Unit based surveillance method (or hospital based?)
- Only the total number of cases and denominator data are recorded for each unit (or hospital?)
- Denominator data will be derived from the hospital information system (patients, patient days)
- Distinguishing healthcare acquired healthcare onset cases and community acquired healthcare onset cases
- **Endpoints:** CDI incidence/CDI incidence density per unit (hospital)
- Integration into TESSY
Krankenhaus-Infektions-Surveillance-System (KISS)

CDAD-KISS: Surveillance-Protokoll
Clostridium difficile assoziierte Diarrhö in Krankenhäusern

www.nrz-hygiene.de

- Hospital based surveillance
- summarized annual data
- Denominators:
  patients and patient days
CDAD-KISS Bogen

KISS - Krankenhaus-Infektions-Surveillance-System

Folgende Liste ist jährlich für stationäre Patienten auszufüllen und bis zum 31. März des Folgejahres per E-Mail (s. Button oben) zu versenden.

Für das Jahr: _____ Gesamtzahl Patienten des Krankenhauses: _____ Krankenhaus-Kürzel: _____

Wann erfolgt die CDAD-Diagnostik in Ihrem Krankenhaus?

☐ Bei klinischem Verdacht
☐ Bei allen Patienten mit Durchfall, nach Aufenthalt > 3 Tagen in Krankenhaus
☐ Andere Kriterien (Bitte angeben): ______

<table>
<thead>
<tr>
<th>CDAD-Fälle insgesamt</th>
<th>Anzahl der CDAD-Patienten</th>
<th>CDAD-Fälle (sofern Unterscheidung möglich)</th>
<th>Mitgebrachte Fälle</th>
<th>Nosokomiale Fälle</th>
<th>Schwere Fälle</th>
<th>Patiententage des Krankenhauses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Krankenhaus gesamt (alle Abteilungen)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Distribution of CDI in 122 KISS hospitals in 2010

<table>
<thead>
<tr>
<th>Rate</th>
<th>Mean</th>
<th>25th percentile</th>
<th>Median</th>
<th>75th percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDI incidence density (per 10,000 patient days)</td>
<td>7.2</td>
<td>4.5</td>
<td>7.1</td>
<td>11.1</td>
</tr>
<tr>
<td>Incidence density of healthcare onset CDI</td>
<td>4.5</td>
<td>2.3</td>
<td>3.8</td>
<td>6.8</td>
</tr>
<tr>
<td>(per 10,000 patient days)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incidence density of severe CDI</td>
<td>0.3</td>
<td>0</td>
<td>0.1</td>
<td>0.3</td>
</tr>
<tr>
<td>(per 10,000 patient days)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Distribution of nosocomial CDI incidence density
## CDI incidence density in German hospitals 2007-10

<table>
<thead>
<tr>
<th>Year</th>
<th>Hospitals</th>
<th>Incidence density (per 10,000 patient days)</th>
<th>Nosocomial incidence density (per 10,000 patient days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>35</td>
<td>6.6</td>
<td>4.8</td>
</tr>
<tr>
<td>2008</td>
<td>59</td>
<td>6.8</td>
<td>4.7</td>
</tr>
<tr>
<td>2009</td>
<td>86</td>
<td>6.6</td>
<td>4.5</td>
</tr>
<tr>
<td>2010</td>
<td>122</td>
<td>7.2</td>
<td>4.5</td>
</tr>
</tbody>
</table>

400 severe cases in 2010
The full version (enhanced protocol)

- Further data for patients with CDI: (e.g. antibiotic usage, earlier contact to healthcare facilities)
- Follow-up data (recurrent infections, need for ICU admission, colostomy, death)
- Information about the strains?
- **Endpoints**: Risk factor analyses for outcomes such as death, recurrent infections (ECDIS survey)

- **OPTIONAL**: Laboratory component for ribotyping data (TESSY) (see workpackages 2 and 3)
Objective 1: Review methods and data of existing national CDI surveillance protocols
-> review paper

Objective 2: Call an expert meeting to develop a European enhanced CDI surveillance protocol with case based epidemiological and microbiological (typing) data for CDI
-> protocol

Objective 3: Perform a feasibility study by implementing the protocol in at least 6 member states (3 with high experience and 3 with no prior experience)
Expert meeting in Berlin

- Epidemiologists and typing specialists from countries with existing systems
- Considering IT aspects (webbased systems)

OPTIONAL:
- Laboratory component for ribotyping data (TESSY) (see workpackages 2 and 3)