A cluster of Bacillus cereus infection among PWID Norway 2016

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Bacillus cereus

- Ubiquitous spore-forming bacteria commonly found in the soil
- Usually associated with food poisoning caused by enterotoxins
- Extraintestinal infections caused by *B. cereus* are rare
- Bacteremia, associated with injecting heroin, has been sporadically reported in the literature. Few clusters reported
- Reports of cellulitis, endophthalmitis and panophthalmitis, and endocarditis in PWID. First reported 1974 (endocarditis)
- The prognosis of bacteremia and endocarditis with *B. cereus* is typically good
Heroin is still the most common drug injected, but for an increasing number, amphetamine is becoming the main drug injected.

Injection culture among PWID, Norway is still among the countries that distribute most syringes in Europe.

Norway ranks very high on the European statistics for overdose deaths.

The number of injecting drug users is estimated to be between 7300 and 10300.

A relatively high number of reported infections among PWID caused by spore-forming bacteria.
Bacterial infections among PWID Norway

- First documented case of anthrax in the world 2000
- *Clostridium novyi*-infection in 2000
- Sporadic cases and outbreaks of wound botulism (2013 and 2015)

- Increasing number of cases of MRSA among PWID
- First cases and cluster of *Bacillus cereus* reported 2016
### Bacillus cereus cluster Norway 2016

<table>
<thead>
<tr>
<th>Residence</th>
<th>Gender</th>
<th>Age category</th>
<th>Date of symptoms</th>
<th>Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trondheim</td>
<td>Female</td>
<td>&lt;25</td>
<td>15.12.2015</td>
<td>High fever, septicaemia,</td>
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<tr>
<td>Trondheim</td>
<td>Male</td>
<td>&gt;=35</td>
<td>13.04.2016</td>
<td>High fever, septicaemia</td>
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<tr>
<td>Trondheim</td>
<td>Female</td>
<td>25-34</td>
<td>19.04.2016</td>
<td>High fever, septicaemia</td>
</tr>
<tr>
<td>Stavanger-area</td>
<td>Male</td>
<td>25-34</td>
<td>21.04.2016</td>
<td>Underlying diabetes Septicaemia</td>
</tr>
</tbody>
</table>

Similar strains
Different strain

All cases reported injecting mainly amphetamine
Response

- Local medical officers have informed GPs, emergency departments and PWID services about the cluster
- Written material about symptoms and the possibility of contaminated drugs distributed locally to PWID
- No confiscated drugs available for microbiological analysis
- Norwegian Institute of Public Health have posted an article on our web site to inform the rest of the country of possible contaminated drugs in circulation.
- Molecular analysis done at the Norwegian Institute of Public health