How biobanks could deal with SARS-CoV-2

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The presented approach does not represent an official recommendation by the presenter or his employer!
The Problem

• Who should care about Covid-19?

• What should be taken into account when performing biobanking during the Covid-19 pandemic?

• How could a risk analysis be performed?
Who should care?

- Confirmed SARS-CoV-2 cases in Austria per 100,000 inhabitants
- In certain areas >1.5%
- Does – of course – not include the „dark figure“
- Do you know for sure that none of them donated to your biobank?
- Therefore → everyone that is actively collecting should care!
What to take into account when preparing for SARS-CoV-2?

- SARS-CoV-2 is considered as a risk group 3 pathogen
- Intended work with SARS-CoV-2 → at least BSL-3 facility
  - Virus propagation, virus cultures, etc.
- Non-intended work with SARS-CoV-2 → BSL-2, if certain prerequisites are met
  - Diagnostic material (no virus propagation)
  - Risk assessment → which risks can be identified? Look at your process!
  - Different materials might bear different risks (serum, respiratory material, stool, …)
  - Personal protection, protection of environment, protection of devices, …

- THIS HAS TO BE DISCUSSED WITH YOUR LOCAL HYGIENE OFFICERS, LAB MANAGER, OCCUPATIONAL PHYSICIAN, …
- COMPLY WITH NATIONAL LEGISLATION!

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What to take into account when preparing for SARS-CoV-2?

- Know your processes!
- What is the scope of your biobank?
- Where does it start, where does it end?

- Risk identification: which risks could occur? Look at each step of your process!
  - Experience from defect management
How could risk analysis be performed?

<table>
<thead>
<tr>
<th>Risk event</th>
<th>Category</th>
<th>Possible reasons</th>
<th>Remarks</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Hazard at sample reception</td>
<td>Preanalytics</td>
<td>Poor hygiene, inadequate handling of contaminated material</td>
<td></td>
<td>&lt;5%</td>
</tr>
<tr>
<td>2 Endangerment by contaminated material</td>
<td>Preanalytics</td>
<td>Surface of tubes contaminated; tubes damaged</td>
<td></td>
<td>&lt;10%</td>
</tr>
<tr>
<td>3 Aerosol generation during sample opening</td>
<td>Preanalytics</td>
<td>Unavoidable</td>
<td>Risk might depend on sample type (blood &lt; stool &lt; respiratory material)</td>
<td>100%</td>
</tr>
<tr>
<td>…</td>
<td>…</td>
<td>…</td>
<td>…</td>
<td>…</td>
</tr>
<tr>
<td>10 Accidental use of sample with high infection probability</td>
<td>Preanalytics</td>
<td>f.e. sample collected at Covid-19 ward</td>
<td>Possible solution: visual marking of samples</td>
<td>&lt;1%</td>
</tr>
</tbody>
</table>
How could risk analysis be performed?

- Next steps:
  - Rating of risks (likelihood of occurrence, severity of damage, costs, etc.)
  - Strategies how to deal with risks
    - Measures, based on the risk reasons
      - Personal protection
      - Environmental protection
      - Protection of devices
      - Avoidance of accidental use
      - Protection of biobank users...
    - Risk monitoring!

- Risk management approaches in ISO 9001, ISO 31000
- Risk management tools/matrices
Thank you for your attendance