The revised recommendations for empirical antibiotic treatment covered significantly more clinical situations (84%).

- Antibiotic dosage was compliant with the recommendations in > 90%, its choice in about 80%. The antimicrobial spectrum of the chosen antibiotic was too broad in up to 18%.
- Re-evaluation of treatment after 48–72 h occurred only in every other patient. Re-evaluation was efficient i.e. it resulted in 71% in either better targeted antibiotic therapy or its termination.
- Recorded predefined duration of antibiotic therapy at PICU discharge was persistently missing in every third patient and correctly predefined in one of three. Improvement is needed through better communication and precise definitions in the recommendation.

Results

1. Compliance with the recommendations (2006 vs 2008)

In 2006, 54 prescriptions of empirical antibiotic treatment were evaluated.

- Empirical treatment N = 54
- Not contained in the recommendations N = 16 (30%)
- Contained in the recommendations N = 38 (70%)

- Antibiotic choice
  - Compliant N = 32 (84%)
  - Too broad N = 3 (8%)
  - Too narrow N = 3 (8%)

- Antibiotic dosage
  - Compliant N = 35 (92%)
  - Dose too high N = 3 (8%)
  - Dose too low N = 0 (0%)

In 2008, 94 prescriptions of empirical antibiotic treatment were evaluated.

- Empirical treatment N = 94
- Not contained in the recommendations N = 15 (16%)
- Contained in the recommendations N = 79 (84%)

- Antibiotic choice
  - Compliant N = 62 (79%)
  - Too broad N = 14 (18%)
  - Too narrow N = 3 (4%)

- Antibiotic dosage
  - Compliant N = 75 (95%)
  - Dose too high N = 2 (2.5%)
  - Dose too low N = 2 (2.5%)

\[ P = 0.049 \]

2. Re-evaluation (2008)

Re-evaluation of empirical antibiotic treatment after 48-72 h, as indicated in the recommendations, was analysed 2008 in 84 patients hospitalised longer than 72 h in the PICU. The empirical treatment was re-evaluated in 45 (54%) of them.

The re-evaluation led to modification of treatment in 32 of 45 (71%) of these patients, i.e. either termination (N=21) of treatment or change of the antibiotic prescribed (N=11).

Treatment was not re-evaluated in 39 cases (46%), in 24 of them because antibiotic treatment was deemed to be clearly defined by the initial prescription.

Re-evaluation of empirical treatment was performed in half (54%) of patients and led to more targeted antibiotic treatment or its termination.

3. PICU discharge (2006 vs 2008)

<table>
<thead>
<tr>
<th>Year</th>
<th>Antibiotic treatment at discharge</th>
<th>Duration of treatment predefined</th>
<th>Predefined duration compliant with recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>32/54 (59%)</td>
<td>20/32 (63%)</td>
<td>11/32 (34%)</td>
</tr>
<tr>
<td>2008</td>
<td>49/94 (55%)</td>
<td>33/49 (67%)</td>
<td>18/49 (37%)</td>
</tr>
</tbody>
</table>

- Empiric treatment was continued at discharge from PICU in > 50% of cases.
- Duration of treatment was not predefined at discharge in every third patient.