State of the art of infection control and antimicrobial resistance (AMR) in Europe - Germany -

ANMDO meeting, Turin, 3 June 2019

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Germany
80 mio people
1,900 hospitals (-> 1,500)
19-20 mio inpatients
500,000 beds
Bed occupancy 77%
Mean stay 7.4 days
30 % private hospitals
16 federal states.
States have many duties in healthcare, e.g. legislation.
Nosocomial infections

From own hospital
All

3.5 – 5%

2004: New remuneration system for hospitals:
The G-DRG System

One case – one price

Calculation of the case-value on the basis of 4 million in-patient cases a year by InEK institute.

„Learning system“ which is reviewed every year.
Regulations

National law
  Infection prevention law
  Mandatory

State law, eg North Rhine-Westfalia
  Hospital hygiene ordinance of North-Rhine Westfalia
  Mandatory

Recommendations of the Robert Koch-Institute (RKI) - KRINKO
  Based on evidence
  Mandatory since 2011

History

Since decades:
  Doctor specialisation: Hygiene doctor (5 years education)
70ies:
  First hygiene nurses, first courses
90ies:
  2 years education with 1,000 hour course for hygiene nurses, lot of practical visits and tasks
  Hygiene doctors only in very big hospitals
2011:
  Infection prevention law with new regulations, more mandatory

Last years also regulations by Federal Joint Committee (G-BA) and German Ministry of Health
§ 23 Nosocomial infections

Commission for hospital hygiene and infection prevention (KRINKO) at Robert Koch Institute (RKI)
Since 1976

Develops recommendations to prevent nosocomial infections
Only in German – some in English on [www.eunetips.eu](http://www.eunetips.eu) or [www.rki.de](http://www.rki.de)

Mandatory to work according to them since 2011

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**KRINKO recommendations, eg**

Cleaning
Neonatology
MRSA
Multiresistant gram negative bacteria (MRGN)
Dentistry
Number of hygiene staff needed
Immunocompromised patients
Punctions and injections
Reprocessing of medical devices
Prevention of urinary infections, wound infections, sepsis
Basic hygiene measures
VRE
Staff according to KRINKO 2009/2016

Hygiene doctors: difficult risk assessment and math operations
- Eg 300 bed – 0.3 doctor;
  university and big tertiary care hospital ≥ 1 doctor
- 5 years advanced training or
- short course (200 hours) and 2 years under supervision (soon only 1 year)

Hygiene nurses: also risk assessment and math operations
- around one per 150-200 beds
- 2 years advanced training
- Number doubled since 2011

Link doctors: each department
- One week training

Link nurses: each ward
- (one week training)

Hygiene staff numbers

<table>
<thead>
<tr>
<th>Staff</th>
<th>needed</th>
<th>available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hygiene nurse</td>
<td>1,840</td>
<td>1,365</td>
</tr>
<tr>
<td>Hygiene doctor</td>
<td>386</td>
<td>157</td>
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Financed by DRGs from 2020 on
Infection prevention law

§ 23 Nosocomial infections

Heads of hospitals are in charge of hospital hygiene working according to scientific knowledge

Recommendations of KRINKO have to be implemented

Statistics about nosocomial infections and multiresistant bacteria – eg KISS system
Also conclusions, consequences and training of staff about new regulations

Hygiene plan (SOPs) in each hospital (since 70ies)

Infection prevention law

§ 23 Nosocomial infections

Commission for antiinfectiva, resistance and therapy (ART) at Robert Koch Institute
New!

Develops recommendations for diagnostics and therapy, based on epidemiologic evaluations

Each hospital has to have antibiotic stewardship (ABS) experts (courses!)
Antibiotic stewardship (ABS)

ART commission: no results until now.

Recommendation of respective scientific societies:
- 1 fulltime doctor per 500 beds.
- ABS team.

Around 1,000 ABS experts (only from DGKH, 200 hours course) from 500 hospitals until now – how many are working in ABS?

Federal Joint Committee (G-BA)

Established in 2004.

Main decision making body in German healthcare system.

Makes legally binding directives.

 Represents organisations of physicians, hospitals, sickness funds, patients and ministry.

Evidence-based decisions regarding innovations for outpatient and hospital care (which therapy, drugs… sickness funds have to pay for)
Some directives of the Federal Joint Committee (G-BA)

Quality reports of all hospitals every year (some data about hospital hygiene structure).

Minimum numbers of procedures, eg
  Liver transplantation: 20
  Knee TEP: 50
  Neonates < 1,250 g: 14

Neonatology regulations:
  Eg nurse-baby ratio 1:1 or 1:2; not fullfilled until now.
  Website with all neonate departments in Germany.
Over 50 % of German hospital do TEP (hip, knee) surgery, often low numbers. Only because of money.

**More minimum numbers will come!**

Eg proposal of German Surgical Society:
- 25 esophagus cancer.
- 15 pancreas cancer.
- 100 colon and rectum surgery.
- 120 thyroid surgery.
- 100 inguinal hernia.
- 50 stomach bypass.

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**German Ministry of Health in 2019: Minimum nurse staff numbers**

- **ICU**: 1:2,5 (day) or 1:3,5 (night)
  - From 2021 on: 1:2 (day) or 1:3 (night)
- **Geriatry**: 1:10 (day) or 1:20 (night)
- **Traumatology**: 1:10 (day) or 1:20 (night)
- **Cardiology**: 1:12 (day) or 1:24 (night)
Main problems

- Multiresistant Bacteria (and outbreaks)
- Staff shortage – especially nurses
- Bad cleaning
- Problems in reprocessing of medical devices
- Hospital renovation and building
- No discipline/compliance
Conclusion

- Many positive developments in last 10 years.
- At the moment, often mostly regulations – not always fulfilled in reality.
- Importance of hospital hygiene has grown in last years and is still growing.