



Mongolian Emergency Service Hospital Hygiene Project

MeshHp.mn

Indicators of hygiene

Mongolia 2012

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Structure quality

Process quality

Outcome quality

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Structure quality

Audits – visits

Visual impression

Write a report:

- Description

- Photos

- Recommendations

Staff:

- How many (in relation to patients' numbers)?

- Qualification?

- How many hygiene staff?

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Structure quality

How many hygiene staff

- e.g. Germany:

- Full time hygiene doctor over 400 beds

- Full time hygiene nurse for every 150-200 beds

- Link doctors for each department

- Link nurses for each ward

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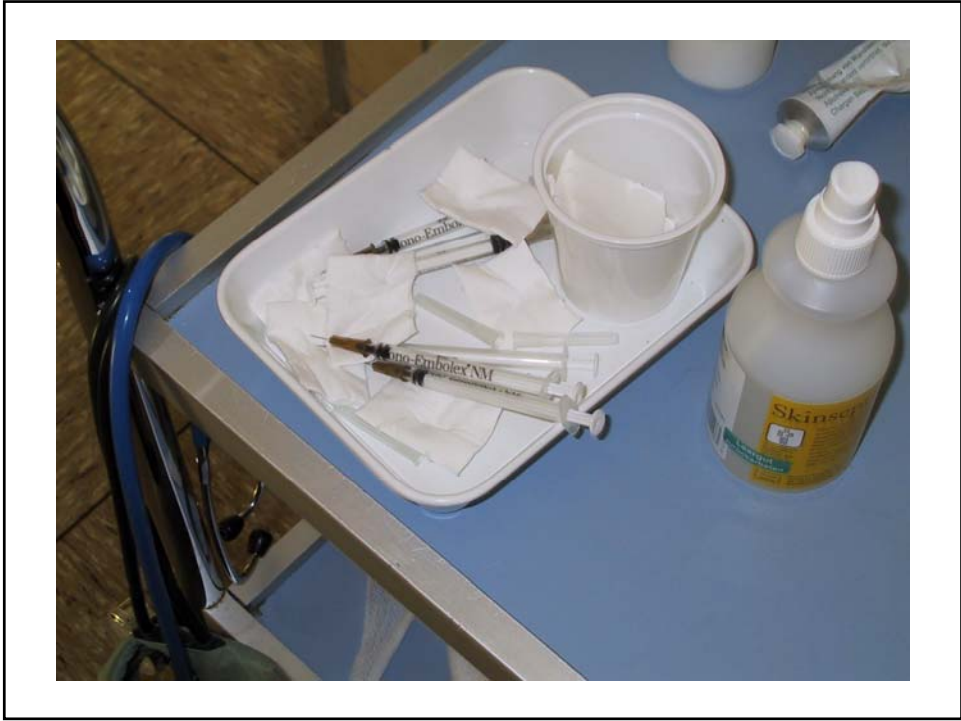


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HACCP concept: Hazard Analysis and Critical Control Points (according to Codex Alimentarius)

Principles:

1. Identify potential hazards in food production.
2. Estimate the likelihood of identified hazards.
3. Define preventive measures to eliminate risks.
4. Define CCPs (critical control points) to monitor identified hazards.
5. Define critical limits which may not be exceeded to exclude biological, chemical and physical health hazards.
6. Define methods to monitor and measure critical limits.
7. Define corrective actions in case limits are exceeded in order to exclude acute or chronic hazards.
8. Have your HACCP plan written.
9. Test your system to proof that it works (verification).

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HACCP concept: Hazard Analysis and Critical Control Points (according to Codex Alimentarius)

Principles in short:

Identify hazards.

Define measures.

Make a written plan.

Do it!

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Examples of CCPs:

Goods receipt:

- Control labels, e.g. expire date
- Control appearance and smell
- Measure temperature (e.g. meat which has to be cooled)
- If necessary deny receipt
- Documentation



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Examples of CCPs:

Warm cooking:

- Measure core temperature
- Documentation



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Process quality

Infection manual - written standards how to work
Evidence based
Available in intraweb - otherwise on paper

Training of standards



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Process quality

Training

Public symposiums, congresses, workshops
Essen: 185 training dates in 2011 (one hour until one day)
Documentation of training

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Process surveillance

Air quality:

Particles in air

In operating theatres

Only if you have air supply with filter

3 filters (Germany)	Particles (≥ 0.5 $\mu\text{m}/\text{m}^3$)		bacteria (cfu/m ³)	
	ideal	limit	ideal	limit
Filter 3: H 13	4.000	10.000	4	10



Process surveillance

Air quality:

Particles in air

In work benches

Particles > 5 μm : 0

Particles > 0.5 μm : < 3,500 / m³



Process surveillance

Water:

Colonies/ml: < 100 cfu/ml
Escherichia coli: 0
Legionella: < 100 cfu / 100 ml
Pseudomonas: 0
Chemicals like lead, nickel, copper

Drinking fountain:

Drinking water quality



Process surveillance

Endoscopes:

Rinse sterile water:
No pathogenic bacteria
Swabs outside:
No pathogenic bacteria



Process surveillance

Washing disinfectors:
Bioindicator or
thermlogger



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Process surveillance

Kitchen

Swabs

freeze all meals for some days

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Process surveillance

Swabs

Eg in outbreak situations



Process surveillance

Autoclavs:

Validation

Chemical indicator

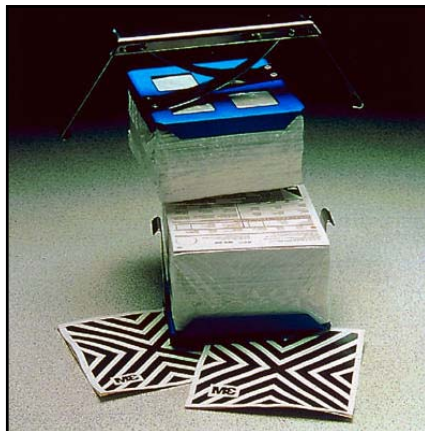
Daily inspection:
visual (e.g. clean?)

Empty charge (warming up) in the morning

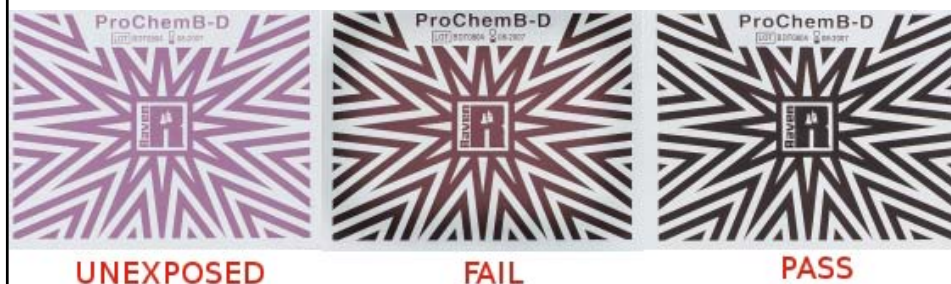
Bowie Dick test

Vacuum test according to producer

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Bowie Dick test



Testing and control of autoclaves

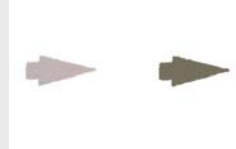
Physical:

Control of parameters (online registration of temperature and pressure).

Thermologger.

Chemical:

Chemical indicator on charge.



Biological:

Biological indicator (spores): e.g. spores of *Geobacillus stearothermophilus*

Every half year or 400 charges

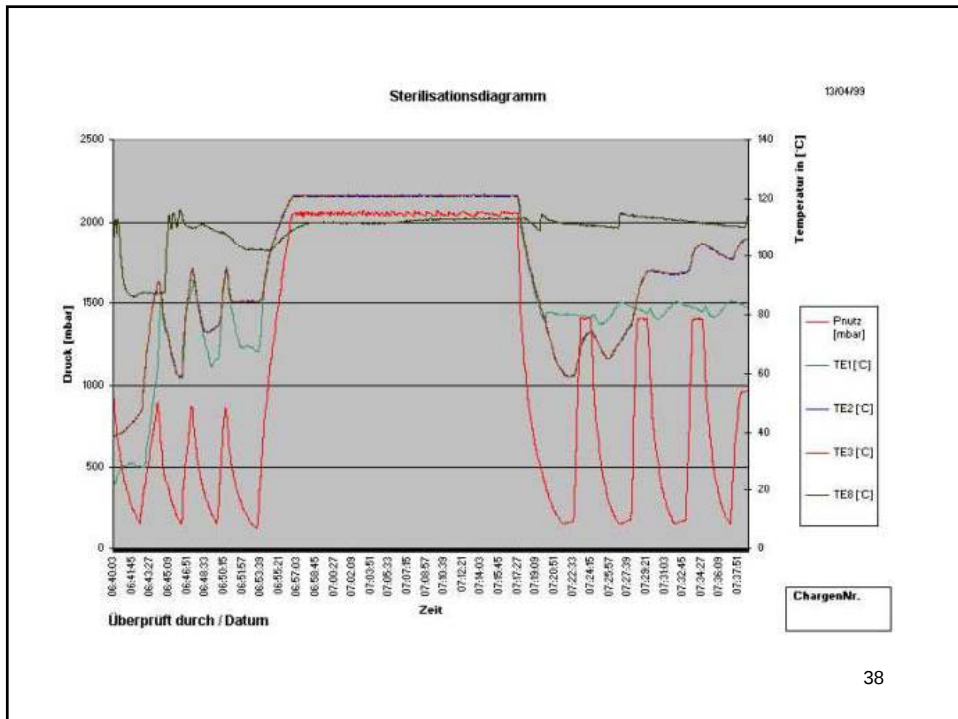
Use 5: 4 in autoclave, 1 as positive control

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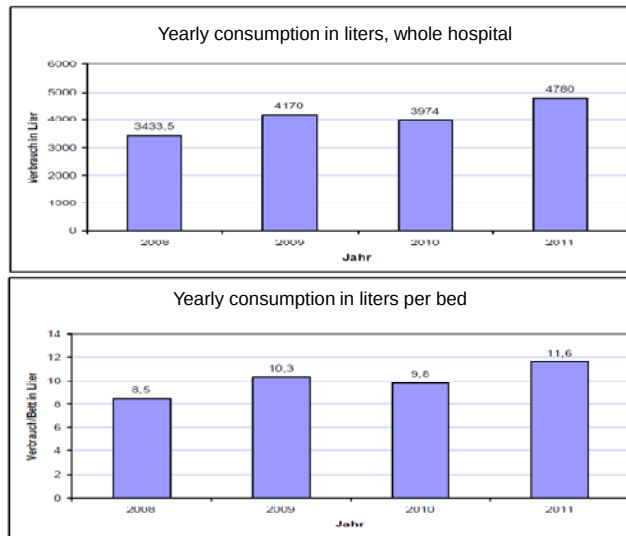


Some other chemical control system

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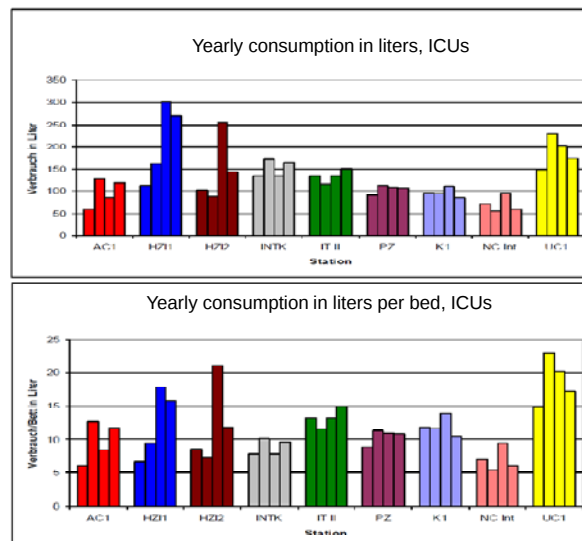


Hand disinfection



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Hand disinfection



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Production of alcoholic handrub solutions in 2 hospitals.

e.g. National Central Hospital: 1.052 l in 2011.

University Clinics of Essen: 1,300 beds -> 21 liters / bed and year.
National Central Hospital: 544 beds -> 11,500 liters a year.



Outcome surveillance = nosocomial infections

Definition:

Within first 2 days: brought from outside

After 2 days stay: nosocomial (NI = healthcare associated infections = HAI)

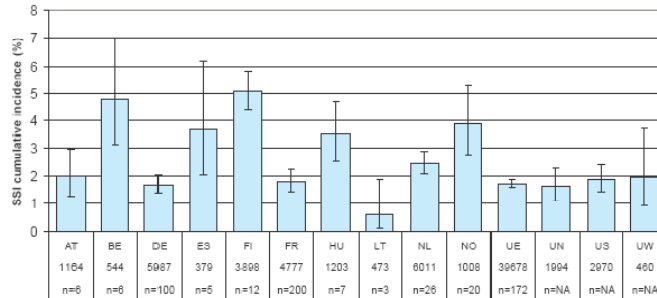
If there is no other good reason

Surgical site infections

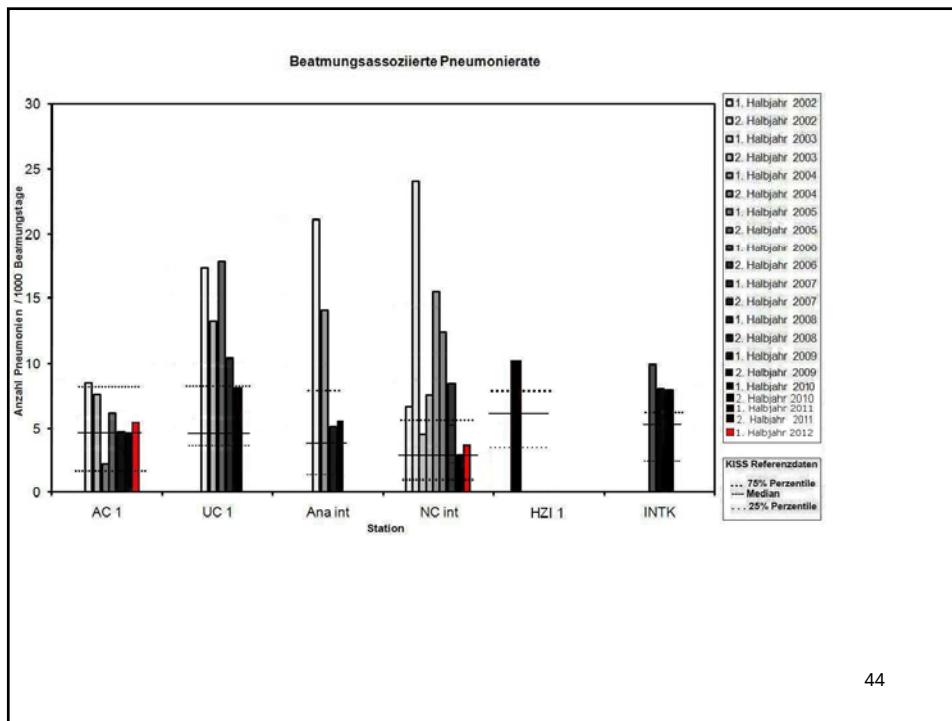
Device-associated infections like
sepsis,
pneumonia,
urinary tract infections



Figure 3 Comparison between cumulative incidence and incidence density of SSI for hip prosthesis by country. Bars represent 95% confidence limits. Numbers represent the number of interventions and the number of hospitals



The IPSE Annual Report 2006



Problems

Influence of the persons doing surveillance (standing/reputation in the hospital staff?)

Problem of small numbers in short periods (e.g. 3 months)

Problems of diagnosis:

Sepsis: the more cases the more blood cultures

Pneumonia: who makes the x-ray diagnosis?

Politics of antibiotics

Numbers of indicator operations big enough?

e.g. infection rate about 2 % in Germany

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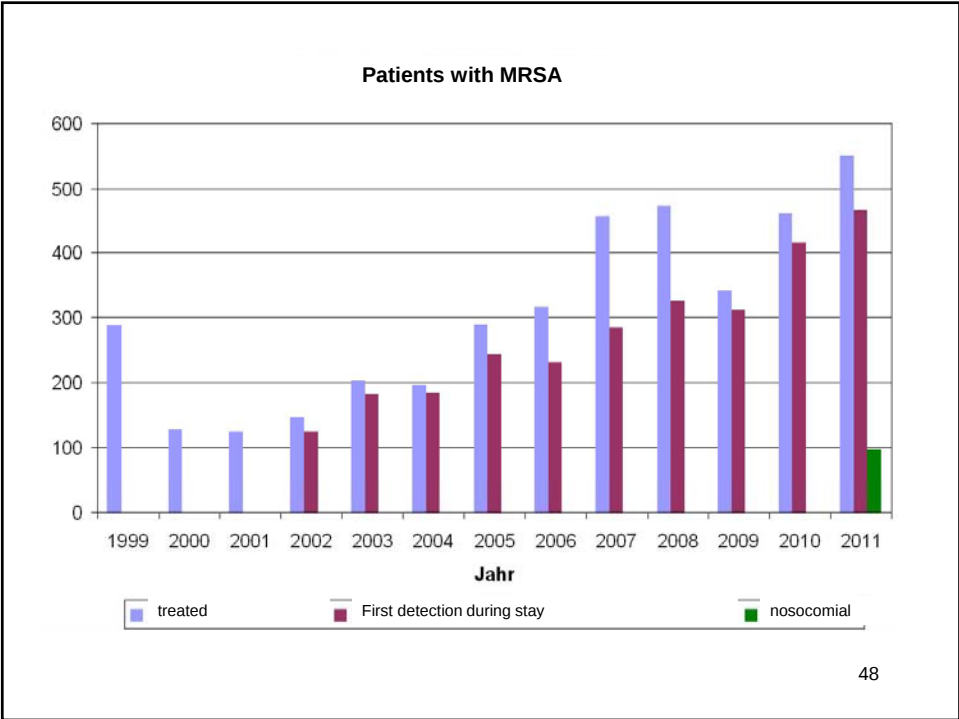
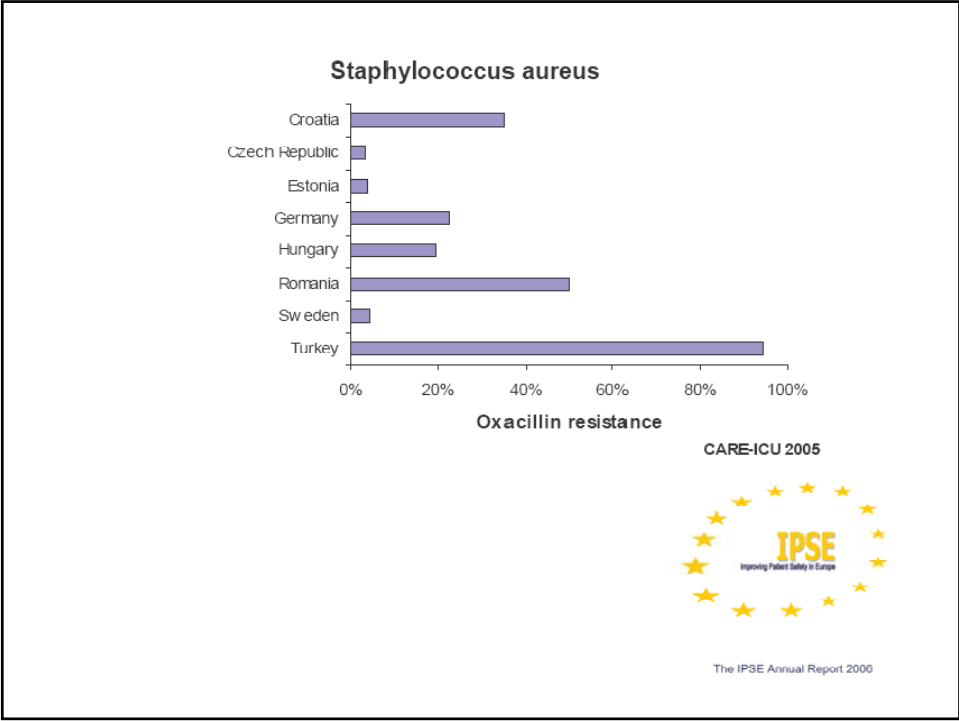
Outcome surveillance

Statistics of most common bacteria

Resistance statistics

Multiresistant bacteria

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Improvements we aim for:

50 % control of catheter only if it seems necessary:
→ daily!.

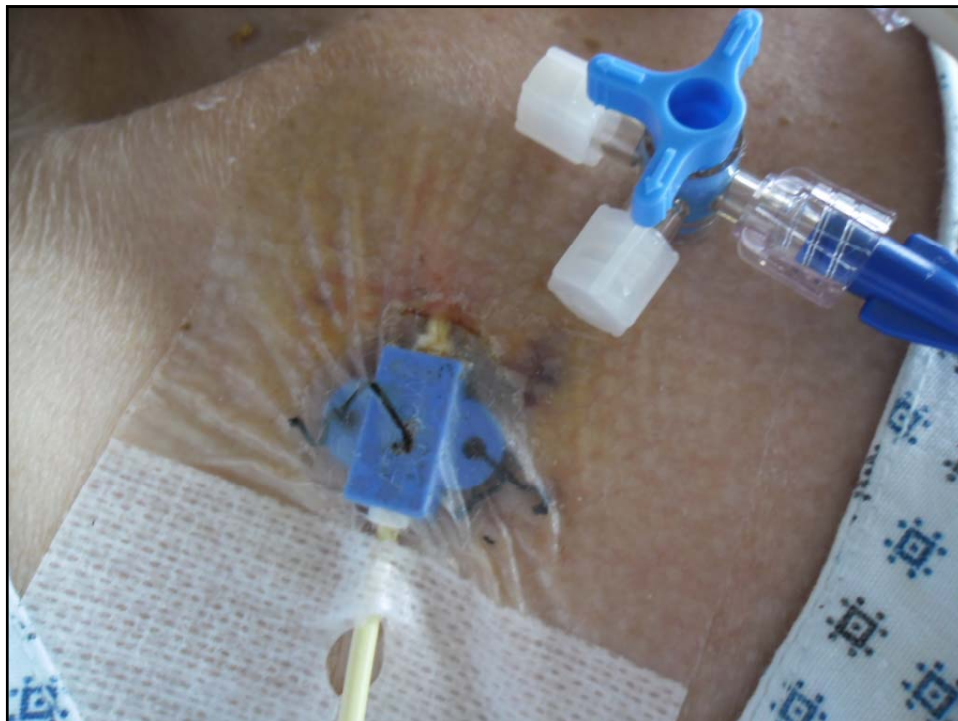
30 % change of film dressings every 72 hours:
→ can stay one week if inspected daily.

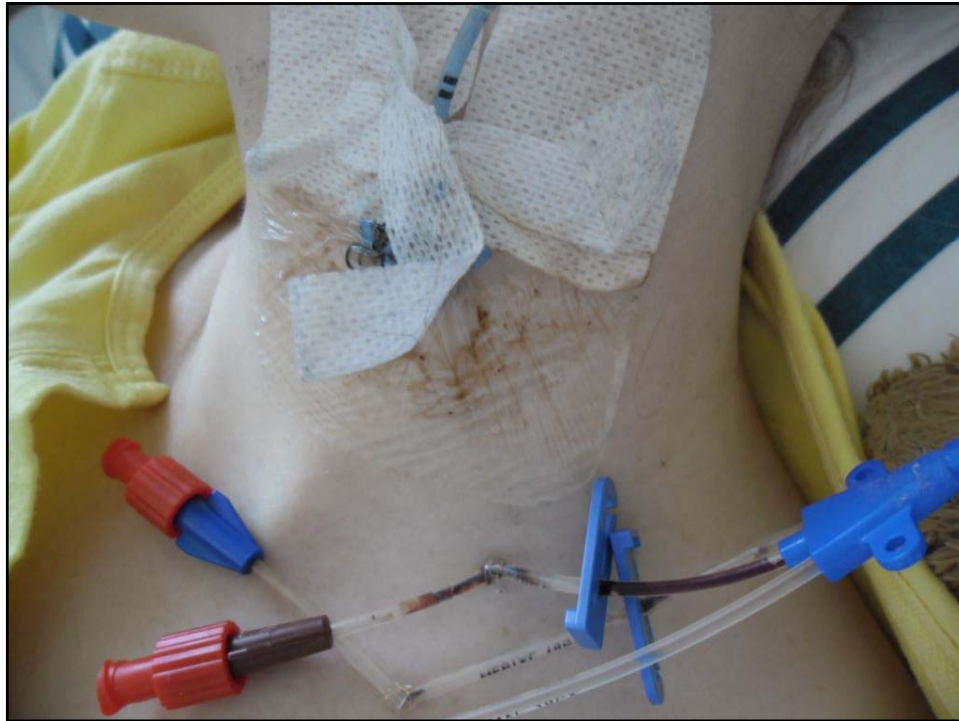
Some wards cleaning of injection site with non sterile gauz pad:
→ only sterile gauz pads.

50 % of ICUs: hand disinfection not at every manipulation of catheter:
→ Hand disinfection before every manipulation of catheter.

20 % no documentation of change of dressings:
→ always dokumentation, best of all also on dressing.

In case of suspected sepsis, blood culture only in 50 % of wards and 80 % of ICUs:
→ Always blood cultures, remove catheter and also examine tip of catheter.





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Thank you for your attention!