The Faecal Quandary
"Bedpan Management in a Modern Age"

“I DON’T Like to clean Bedpans”

“It’s what I can DO Best”

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Consultant Infection Prevention

Disclaimer/Disclosure
Consultant current & past for: Diversey the Netherlands, Hakerman Turkey, Medwaste Control the Netherlands
Meiko Germany, SCA Hygiene Products Sweden, Sigex Brazil, MEIKO the Netherlands

XXVe Congrès National de la Société Française d’Hygiène Hospitalière, 4 June 2014
Gertie van Knippenberg-Gordebeke
Bedpan Management & the Chain of Infection

Lots of Opportunities

- Full Bedpans **Contaminate** Hands & Environment
- Hands can **Contaminate** Environment & Patients
- **Contaminate** Environment can **Contaminate** Hands
- Bedpans & Hands can **Transmit** Microorganisms
- Bedpans can be a **Reservoir**
“The objective in the handling of bedpans & urinals is to dispose of the excreta under the most sanitary and least offensive conditions and at the same time to disinfect the utensils.”

Not a new insight 1956 1st Book

John J. Perkins Director of Research American Sterilizer Company
<table>
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<tr>
<th>PUBMED*</th>
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<td>C. diff and bedpans</td>
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* = same search with endoscopes

**Flexible Endoscopes**
- Interesting topic
- International accepted Risk
- And Preventive Precautions

**Bedpans an Urinals**
- No sexy topic
- (Not yet) International accepted Risk
- No Preventive Precautions
Bedpan Management in the Netherlands

1967 Ministry of Health: “Urine-bottles and bedpans have to be automatically cleaned, rinsed and sanitized with steam or hot water at least 1 minute for 80° C.”

1980 Development of fully automatic bedpan Washer Disinfector (WD)

1990 1st Dutch survey: ”Bedpan washer disinfecter - a forgotten problem?”

1995 Working Group Infection Prevention (WIP)* developed guidelines for WD

1997 Innovation Washer Disinfectors

2005 WIP guidelines: Validation

2006 International Standard BS- EN- ISO 15883 Part 1-6 WD

2010 - 2nd Dutch survey Bedpan management
    - 1st International survey Bedpan management

* Working Party Infection Prevention
Professional Standard for Dutch Inspectorate of Healthcare

http://www.rivm.nl/Onderwerpen/W/Werkgroep_Infectiepreventie_WIP

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Audit & Feedback WD 1990

Cleaning  Maintenance

Who is Responsible?

From 1st Dutch survey 1990: "Bedpan washer-disinfector - a forgotten problem?"
Gertie van Knippenberg-Gordebeke
Dutch Studies

1. Semi-automatic WD
2. Fully automatic WD
3. Validated WD
4. Emptying bedpans only in the WD
5. Manual cleaning & disinfection
6. Are the bedpans and urine bottles clean?
7. Is the WD clean in- and outside?
8. Monitoring program?
9. Use of stainless steel bedpans

Survey 1990 & 2010 Bedpan management
KNIP Consultancy Infection Prevention
www.info@knip-consult.eu
International Survey 2010
Sent to: 1176 Hospitals in 116 Countries

Questions included:

• *Identify empty and decontamination methods for bedpans*
• *Audit sluice rooms*
• *Identify if bedpans or WD has played a role in HAIs*
• *Awareness of ISO15883 for WD*
• *National guidelines Specific for handling bedpans*
Responding Countries: 55

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- These figures do not represent the world, but gives an impression
- Netherlands 69% reply is the country where I know my colleagues
Use of WD (%)

- Netherlands and Belgium: 100%
- USA, Canada: 32%
- West Europe: 97%
- South- and East-Europe: 34%
- Asia, Africa, Latin-America, Middle east: 24%
- Australia, New Zealand: 83%

Survey 2010  Bedpan management
KNIP Consultancy Infection Prevention
www.info@knip-consult.eu
4-21 % reported HAI
WD and Bedpans as the Source
4-21 % reported HAI
WD and Bedpans as the Source

Reported Microorganisms:
- **MDR Pseudomonas aeruginosa**
- **MRSA**
- **Clostridium difficile**
- **Norovirus**
- **Salmonella species**

Nobody wanted (or was allowed) to make these findings public
Enteric Precautions

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Basic Precautions

*Every patient must be treated as colonised or infectious*

1. Handhygiene & Personal hygiene
2. Cleaning & Disinfection procedure
3. Aseptic technique
4. Laundry & Waste handling
5. *Careful human waste handling*
Faeces $10^{14}$ Micro-organisms

Including Multi Drug Resistant Organisms (MDRO)

- 10-20% of patients may be colonized with *Clostridium difficile*
- 10% estimated Carrier of multidrug-resistance (MDR) among Gram-negative bacilli (GNB) & ESBL-producing GNB
- **Transmission** of nosocomial MDR GNB pathogens between patients involves a complex interaction of Contaminated surfaces, clothing and hands of healthcare personal

Facing the rising tide of multidrug resistant Gram-negative pathogens, *Healthcare Infection* 16(1) 1-5  Luke F. Chen*, Matthew E. Falagas and Anton Y. Peleg
Scotland 2009
Guidance on Prevention and Control of Clostridium difficile Infection in Healthcare Settings
All care equipment **should be carefully cleaned** and disinfected using a sporocidal agent (with 1000 ppm hypochlorite) immediately after use on a CDI patient.

Canada, Ontario 2010
Best Practice Manual Cleaning, Disinfection and Sterilization in All Health Care Settings
Disinfection or sterilization **may be** reprocessed in a washer-disinfector (e.g., bedpans).

Sweden 2009
Local guidelines in **Quality assurance of Flusher and Washer Disinfectors**
Basic hygiene routines are the most important preventive measures regarding healthcare infections. They must be unconditionally applied in all healthcare situations and by all personnel, regardless of patients’ diagnoses and healthcare settings.
Always disinfect your hands before taking out the clean goods from disinfector!

the Netherlands 2006
WIP Guidelines (revision 2011)
In that case a bedpan must be used, which the nurse **must** then immediately empty, clean and disinfect in a bedpan washer.
Critical Items: Sterilization

Affect normally sterile tissues or the blood system and represent the highest level of infection risk.

Surgical instruments, catheters, probes, etc.

Semi-critical Items: High level disinfection

Second in importance and affect mucous membranes and small areas of non-intact skin and represent a high level of infection risk.

Anaesthesia equipment, endoscopes, etc.

Non-critical Items: Low Level disinfection

Items and practices that involve intact skin and represent the lowest level of risk: Bedpans, Blood-pressure cuffs, etc.

Spaulding’s Scheme is in 2014 NOT SUFFICIENT for bedpans and urine-bottles.
Efficiency of Decontamination depends on:

• Organic and inorganic load
• Level of microbial contamination
• Material and design of the items
• Cleaning episode prior for disinfection
• Reliability of the chosen method
• Exposure time (heat or disinfectant)
• Frequency

To Err is Human…

Also in Decontamination Bedpans
IFIC SURVEY 2012-2013
on global practices related to disposal of faeces and urine

1440 answers / 93 countries

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<th>Country</th>
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Counties with >10 answers
From presentation IFIC 2014 conference Malta
Prof Dr. Walter Pop, Germany
Bedpan Management

1. Patient care
2. Transport to Empty
3. Emptying
4. Flushing
5. Cleaning
6. Loading in WD
7. Disinfection
8. Drying
9. Storage
Bedpan Management

Patient Care
IFIC SURVEY 2012-2013
on global practices related to disposal of faeces and urine

Who is caring if defecation is done in bed

- Patient himself 6%
- Relatives or friends or caregivers 24%
- Nurses 76%
- Other hospital staff 41%

From presentation IFIC 2014 conference Malta
Prof Dr. Walter Pop, Germany
Transport to empty

Not as simple as we might think
Transport to empty

- **Specimens** of blood or other potentially infectious materials shall be placed in a container which prevents leakage during collection, handling, processing, storage, transport, or shipping.

**Why no Precautions for Transport of FULL Bedpans?**
Emptying

Environment often not cleaned afterwards

- Some M.O. survive months on dry surfaces
- Some M.O. survive months moist environment
IFIC SURVEY 2012-2013
on global practices related to disposal of faeces and urine

Typical ground toilet and water supply in a small hospital (left)
and toilet in a big hospital (right)
(Damaskus, Syria, 2010)

From presentation IFIC 2014 conference Malta
Prof Dr. Walter Pop, Germany
Contamination Risks Practice Manual Handling

Healthcare Worker
- Hands
- Eyes

Environment
- Floors
- Walls
- Surfaces
- Clean items

Something hardly noticed
Risks Sink & Slop-hoppers

- Flush
- Rinse
- Water spray
- No Disinfection
- Manual Handling

Splash, Splatter, Aerosols

Slob-hopper After cleaning
Risk of Bedpan sprayers
Aerosols with and Contamination from fecal material
major concern when bedpan sprayers are being used

From Webber Teleclass 2011: Dr. Michelle Alfa, Canada
If bedpans are cleaned manually, it is done
- in dirty utility room 61 %
- in patient’s bathroom 44 %
- other rooms 10 %

From presentation IFIC 2014 conference Malta
Prof Dr. Walter Pop, Germany
Percentage of Surfaces touched by Manual Cleaning

Dr. Philip C. Carling: ± 30%
Dr. William A. Rutala: ± 50%

Will Bedpans 100% touched?

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Manual Chemical Cleaning / Disinfection

- Different guidelines
- Frequency ?
- Product-choice & Product-use
- Exposure risk
- Time consuming
- Expensive
- False sense of security
- Unpopular task
- Microbial contamination of used disinfectants?
- Never a standard operated procedure (SOP)

\textbf{NOT a SAFE procedure!}
Drying

Potential Reservoirs!
Storage in Dirt Utility Rooms

- No separation clean & contaminated
- Not much attention & Not everywhere recognized
“Chain of infection prevention in hospitals fragile: Several weak links lead to unsafe care”

1. General Cleaning & Disinfection

2. Washer Disinfectors for bedpans

From IGZ Report:
“Keten van infectiepreventie in ziekenhuizen breekbaar: meerdere zwakke schakels leiden tot onveilige zorg”

Audit Dirty Utility / Sluice Room

Minimal once a year    Safety Inspection

• Focus on **what people DO**
• Separation between clean & not clean
• Take photographs
• Use nose and eyes
• Microbial check ?
• ATP?
Washer Disinfectors

Invisible Process is Only Reliable if regular Validation and Maintenance is proceeded

- Steam / hot water
- Water supply
- Monitor temperature
- Monitor duration time
- Correct loading
- Written records must be kept
Loading WD

Mal-practice

Best Practice
Since 2006: Washer Disinfector (WD)

*BS-EN-ISO 15883-Standard Part 1-6*

- **Part 1** General requirements, terms and definitions and tests
- **Part 2** Requirements and tests for WD employing thermal disinfection for surgical instruments, anaesthetic equipment
- **Part 3** Requirements and tests for WD employing thermal disinfection for human waste containers
- **Part 4** Requirements and tests for WD employing chemical disinfection for thermo-labile endoscopes
- **Part 5** Test soils and methods for demonstrating cleaning efficacy
- **Part 6** Requirements and tests for WD employing thermal disinfection for non-invasive, non-critical medical devices and healthcare equipment
ISO/FDIS 15883 - Part 3
WD for Human waste containers

1. Emptying behind closed door direct in Sanitary sewer system
2. Flushing with cold water
3. Cleaning with water pressure and (sometimes) detergent
4. Thermal disinfection (minimal 1 minute 80° C.)
5. Rinsing / Cooling down
6. Drying

Intended for reusables such as:
- Bed pans,
- Urine bottles,
- Suction bottles
- Wash bowls
- etc.
Awareness of ISO 15883-3 WD

Survey 2010 Bedpan Management
KNIP Consultancy Infection Prevention
www.info@knip-consult.eu
Optimize Bedpan Management

Safe Handling Human Waste at Any Patient at Any time by Any HCW

- **Education **WD
- **System change **WD
- **Motivation **WD
Education  *for handling bedpans*

- Teach Chain of infection & Preventive Measures to understand the Risk of Contamination & Transmission
- To all Nurses, Housekeeping and Cleaning staff

- Regular Practical Training Bedpan Management
- Hand hygiene (minimize handling)
System-change for handling bedpans

• Cover used bedpans during transport
• Restriction disinfectants
• Separate Clean from not Clean
• WD installed in dirty utility rooms

Say YES to system-change
• Work together with patient safety department
• Cooperation between healthcare & manufacturers
Motivation for handling bedpans

- Prevention of transmission & contamination
- WDs are Safe for Patients & Healthcare Workers
- Non-toxic
- Saves time
- Less Odour
- Nurses must realize their specific role
- Common in North-West European Healthcare
- Nurses can play an important roll in DEMANDING for good WD

Nurses hands are made for Care

Not for Manual Emptying Bedpans & Urinals
Not for Cleaning Bedpans & Urinals
Bedpans and Urine bottles are Medical devices

Shape and Material of bedpans and urine bottles effects the decontamination process
IFIC SURVEY 2012-2013
on global practices related to disposal of faeces and urine

Conclusions

First description of situation worldwide.

Most answers from urban hospitals - situation might be worse in countryside.

Big influences of religion and culture.

Big difference re bedpan use in similarly developed countries. (eg single use bedpans and maceration in UK and steel bedpans and washer disinfectors in Germany)

It would make sense to develop recommendations – also with respect to multiresistant bacteria.

Feces, gut microbiota and infection control: How to solve the equation?

From presentation IFIC 2014 conference Malta
Prof Dr. Walter Pop, Germany
Do No Harm

Merci pour votre attention

Bedpan Management
Must be part of Patient Safety