The Faecal Quandary
"Bedpan Management in a Modern Age"

“I DON’T Like to clean Bedpans”

“It’s what I can DO Best”

Gertie van Knippenberg-Gordebeke, RN, CCIP
Consultant Infection Prevention

Disclaimer/Disclosure
Consultant Infection Prevention current & in past for:
Diversey the Netherlands, Vernacare UK, Hakerman Turkey, Medwaste Control the Netherlands, Meiko Germany, Meiko China,
Sigex Brazil, Pilasi Y Errázuriz Limitada Chile, SCA Hygiene Products Sweden
Facts

- People do not like to talk about: stool, poop, shit, bodywaste
- Bowel: largest human microbiome \((10^{14} \text{ per gr. faeces})\)
- 150 à 300 gram faeces per person per day
- Information about your health/condition
- Bedridden patients needs a bedpan
- Infection control / prevention item

**Bristol Stool Chart**

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Separate hard lumps, like nuts (hard to pass)</td>
</tr>
<tr>
<td>2</td>
<td>Sausage-shaped but lumpy</td>
</tr>
<tr>
<td>3</td>
<td>Like a sausage but with cracks on its surface</td>
</tr>
<tr>
<td>4</td>
<td>Like a sausage or snake, smooth and soft</td>
</tr>
<tr>
<td>5</td>
<td>Soft blobs with clear-cut edges (passed easily)</td>
</tr>
<tr>
<td>6</td>
<td>Fluffy pieces with ragged edges, a mushy stool</td>
</tr>
<tr>
<td>7</td>
<td>Watery, no solid pieces. Entirely Liquid</td>
</tr>
</tbody>
</table>
• Full Bedpans are huge Reservoirs
• Full Bedpans can Contaminate Hands & Environment
• Hands can Contaminate Environment & Patients
• Contaminated Environment can Contaminate Hands
• Bedpans & Hands can Transmit Microorganisms
Not a new insight: 1956 1st Book

“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”

USA: Dr. John J. Perkins, Director of Research American Sterilizer Company
Publications in PubMed  6-10-2014

Endoscopes and hospital infections

503

Flexible Endoscopes
• Interesting topic
• International accepted Risk
• Preventive Precautions

Bedpans and hospital infections

20

Bedpans and Urine-bottles
• 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 automatic bedpan Washer Disinfector (WD)

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

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

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_Infectie_Preventie_WIP
Dutch Surveys

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

1990 1st Dutch survey Guidelines: No

2010 2nd Dutch survey Guidelines: Yes

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

<table>
<thead>
<tr>
<th>Country</th>
<th>Beds in hospitals</th>
<th>Country</th>
<th>Beds in hospitals</th>
<th>Country</th>
<th>Beds in hospitals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aruba</td>
<td>1</td>
<td>Czech Republic</td>
<td>1</td>
<td>Israel</td>
<td>3</td>
</tr>
<tr>
<td>Australia</td>
<td>2</td>
<td>Denmark</td>
<td>1</td>
<td>Italy</td>
<td>11</td>
</tr>
<tr>
<td>Austria</td>
<td>1</td>
<td>Egypt</td>
<td>12</td>
<td>Jordan</td>
<td>4</td>
</tr>
<tr>
<td>Belgium</td>
<td>6</td>
<td>Equador</td>
<td>2</td>
<td>Kosovo</td>
<td>1</td>
</tr>
<tr>
<td>Botswana</td>
<td>1</td>
<td>Estonia</td>
<td>1</td>
<td>Lebanon</td>
<td>1</td>
</tr>
<tr>
<td>Brazil</td>
<td>1</td>
<td>Germany</td>
<td>6</td>
<td>Lithuania</td>
<td>2</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>13</td>
<td>Ghana</td>
<td>1</td>
<td>Macedonia</td>
<td>1</td>
</tr>
<tr>
<td>Canada</td>
<td>9</td>
<td>Hungary</td>
<td>3</td>
<td>Malaysia</td>
<td>1</td>
</tr>
<tr>
<td>Cameroon</td>
<td>1</td>
<td>Ireland</td>
<td>2</td>
<td>Malta</td>
<td>1</td>
</tr>
<tr>
<td>China</td>
<td>1</td>
<td>India</td>
<td>5</td>
<td>Netherlands</td>
<td>77</td>
</tr>
<tr>
<td>Colombia</td>
<td>3</td>
<td>Indonesia</td>
<td>2</td>
<td>New Zealand</td>
<td>4</td>
</tr>
<tr>
<td>Croatia</td>
<td>1</td>
<td>Iraq</td>
<td>1</td>
<td>Nigeria</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sweden</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Norway</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Oman</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Pakistan</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Thailand</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Switzerland</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Turkey</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>UK</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>USA</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Saudi Arabia</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Vietnam</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Singapore</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Slovakia</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Spain</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>South Africa</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sudan</td>
<td>1</td>
</tr>
</tbody>
</table>

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

Survey 2010 Bedpan Management
KNIP Consultancy Infection Prevention
www.info@knip-consult.eu
Use of WD (%) in 2010

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

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

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

- *MDR Pseudomonas aeruginosa*
- *MRSA*
- *Clostridium difficile*
- *Norovirus*
- *Salmonella species*

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

1489

2012

2013

5th ICAN Conference 2014
Gertie van Knippenberg-Gordebeke
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 % Estimated Carriers of MDRO
- 10-20 % Patients may be colonized with *Clostridium difficile*

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
# Bedpan Management and *Clostridium difficile*

## 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 sporicidal agent (with 1000 ppm hypochlorite) immediately after use on a CDI patient.

## USA 2013

**APIC Guide to Preventing Clostridium difficile Infections**

When a bedside commode is used, the staff must use appropriate PPE and empty waste in a manner that prevents splashing. **The commode must also be cleaned and disinfected after waste is discarded.**

## 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.

Spauldings’ Scheme is in 2014 NOT SUFFICIENT for bedpans and urine-bottles
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

1440 answers / 93 countries

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

Contamination Risks

Healthcare Worker

• Hands
• Eyes
• Uniforms

Environment

• Floors
• Walls
• Surfaces
• Clean items

Environment often not cleaned afterwards

• Some M.O. survive months on dry surfaces
• Some M.O. survive months moist environment
Risks Sink & Slop-hoppers

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

Splash, Splatter, Aerosols

Aerosols with and Contamination from fecal material
major concern when bedpan sprayers are being used
IFIC SURVEY 2012-2013
on global practices related to disposal of faeces and urine

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: \( \pm 30\% \)
Dr. William A. Rutala: \( \pm 50\% \)

Will Bedpans 100% touched?

5th ICAN Conference 2014
Gertie van Knippenberg-Gordebeke
Manual Chemical Cleaning and/or Disinfection

- Exposure risk
- Contamination environment
- Time consuming
- False sense of security
- Never a standard operated procedure (SOP)

NOT a SAFE procedure!
Drying

Wet bedpans Potential Reservoirs!
Bedpans and Urine-bottles are Medical devices

Shape and Material of Bedpans and Urine-bottles effects the decontamination process

5th ICAN Conference 2014
Gertie van Knippenberg-Gordebeke
Storage in Dirt Utility Rooms

- Separation clean & contaminated?
- Not much attention
- Not everywhere recognized
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?

Don’t Hear?  Don’t See?  Don’t Speak?
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
“Chain of infection prevention in hospitals fragile: Several weak links lead to unsafe care”

From IGZ Report:

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

Since 2006: BS-EN-ISO 15883-Standard
Washer Disinfectors (WD) 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
1. Emptying behind closed door direct in sanitary sewer system
2. Flushing with cold water
3. Cleaning with water pressure and (possible) detergent
4. Thermal disinfection (minimal 1 minute 80°C.)
5. Rinsing
6. Cooling down
7. Drying

* Intended for reusables such as:
  Bedpans, 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
- System change
- Motivation
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 safe handling bedpans

- Prevention of transmission & contamination
- WDs are Safe for Patients & Healthcare Workers
- Non-toxic
- Saves time
- Less Odour
- Nurses can play an important roll in DEMANDING (good) WD

Nurses hands are made for Care

Not for Manual Emptying Bedpans & Urinals
Not for Cleaning Bedpans & Urinals
Conclusion

• Safe bedpan management contributes to minimize contamination & transmission

• Assess the risks in your hospital

• Guidelines for empty clean & disinfect bedpans

• Store clean separated from not clean

• Say Yes to Safe Bedpan Management
Thank you for listening