

# The Faecal Quandary

## "Bedpan Management in a Modern Age"

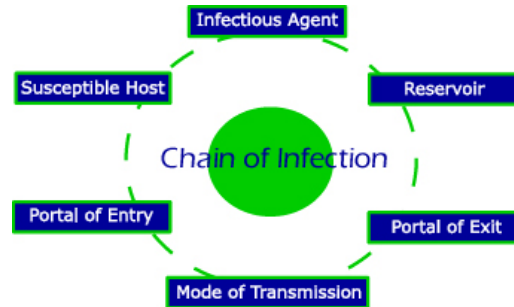


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Disclaimer/Disclosure

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

# Bedpan Management & the Chain of Infection



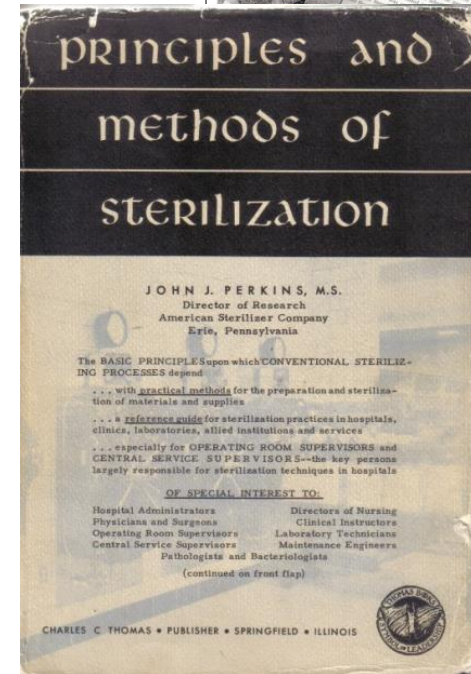
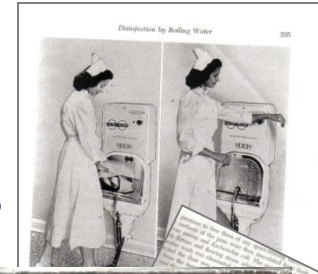
## Lots of Opportunities

- 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**

# Not a new insight 1956 1<sup>st</sup> Book

*John J. Perkins Director of Research American Sterilizer Company*

“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”



# Publications Bedpans & Endoscopes May 2014

| PUBMED*   | Topic *                                 | AJIC*   |
|-----------|---|---------|
| 24 / 1725 | Bedpan and infections                   | 18 / 73 |
| 16 / 404  | Bedpan and nosocomial infections        | 5 / 21  |
| 4 / 112   | Bedpan and hospital assoc. infections   | 8 / 44  |
| 1 / 12    | Bedpan and healthcare assoc. infections | 9 / 45  |
| 5 / 11    | C. diff and bedpans                     | 8 / 29  |

\* = 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** 1<sup>st</sup> Dutch survey: "Bedpan washer disinfector - 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** - 2<sup>nd</sup> Dutch survey Bedpan management  
- 1<sup>st</sup> International survey Bedpan management

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

[http://www.rivm.nl/Onderwerpen/W/Werkgroep\\_Infectiepreventie\\_WIP](http://www.rivm.nl/Onderwerpen/W/Werkgroep_Infectiepreventie_WIP)

# Audit & Feedback WD 1990



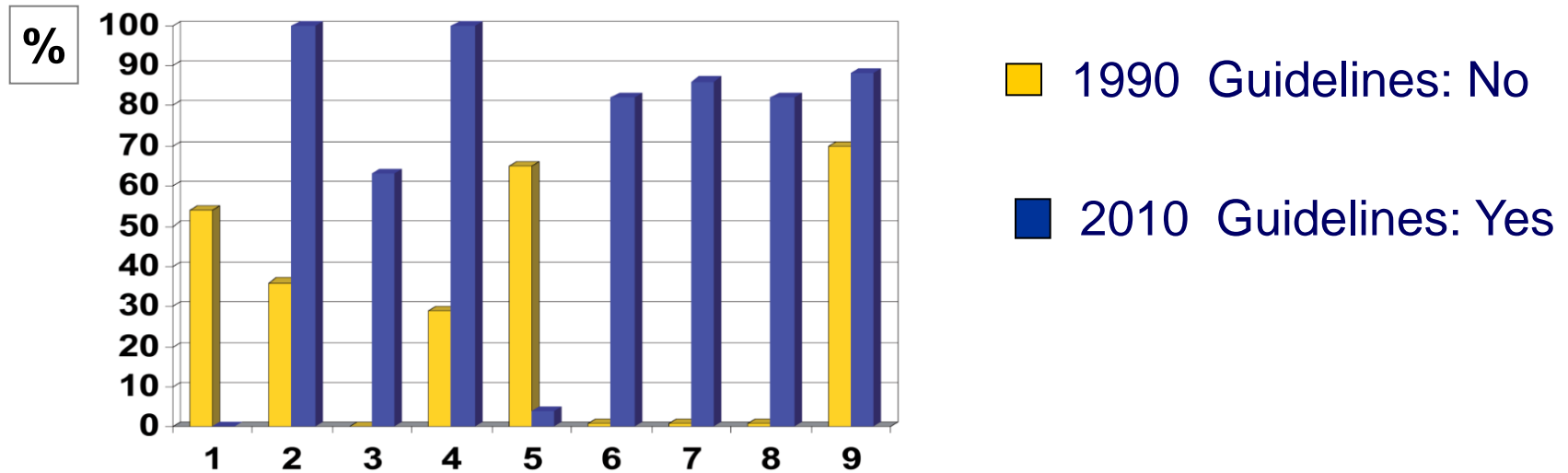
Cleaning

Maintenance

Who is Responsible?

From 1<sup>st</sup> 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](http://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*

*Survey 2010 Bedpan management  
KNIP Consultancy Infection Prevention  
[www.info@knip-consult.eu](mailto:www.info@knip-consult.eu)*

# Responding Countries: 55

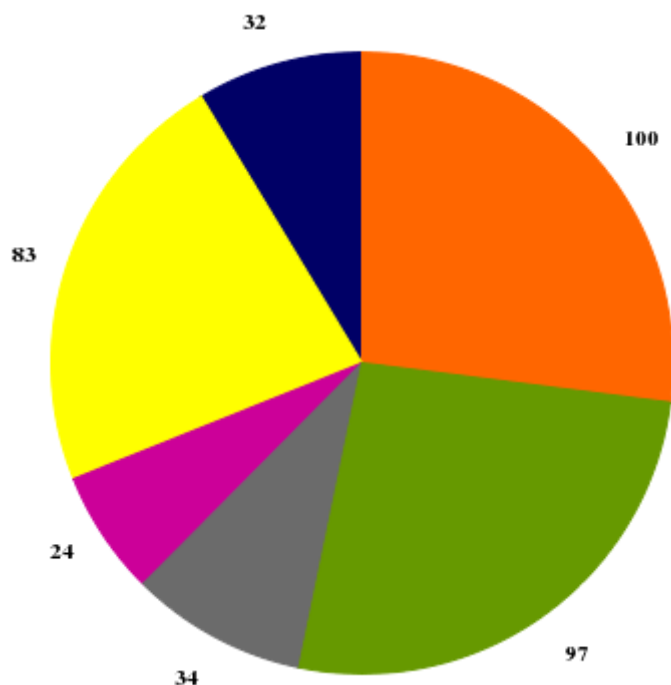
*Beds in hospitals 25-2500*







|           |    |                |    |             |    |              |   |             |    |
|-----------|----|----------------|----|-------------|----|--------------|---|-------------|----|
| Aruba     | 1  | Czech Republic | 1  | Israel      | 3  | Norway       | 5 | Sweden      | 8  |
| Australia | 2  | Denmark        | 1  | Italy       | 11 | Oman         | 1 | Switzerland | 3  |
| Austria   | 1  | Egypt          | 12 | Jordan      | 4  | Pakistan     | 3 | Thailand    | 2  |
| Belgium   | 6  | Equador        | 2  | Kosovo      | 1  | Puerto Rico  | 1 | Turkey      | 1  |
| Botswana  | 1  | Estonia        | 1  | Lebanon     | 1  | Qatar        | 1 | UK          | 1  |
| Brazil    | 1  | Germany        | 6  | Lithuania   | 2  | Vietnam      | 1 | USA         | 16 |
| Bulgaria  | 13 | Ghana          | 1  | Macedonia   | 1  | Saudi Arabia | 1 | Vietnam     | 1  |
| Canada    | 9  | Hungary        | 3  | Malaysia    | 1  | Singapore    | 1 |             |    |
| Cameroon  | 1  | Ireland        | 2  | Malta       | 1  | Slovakia     | 8 |             |    |
| China     | 1  | India          | 5  | Netherlands | 77 | Spain        | 4 |             |    |
| Colombia  | 3  | Indonesia      | 2  | New Zealand | 4  | South Africa | 1 |             |    |
| Croatia   | 1  | Iraq           | 1  | Nigeria     | 5  | Sudan        | 1 |             |    |

- *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](http://www.info@knip-consult.eu)*

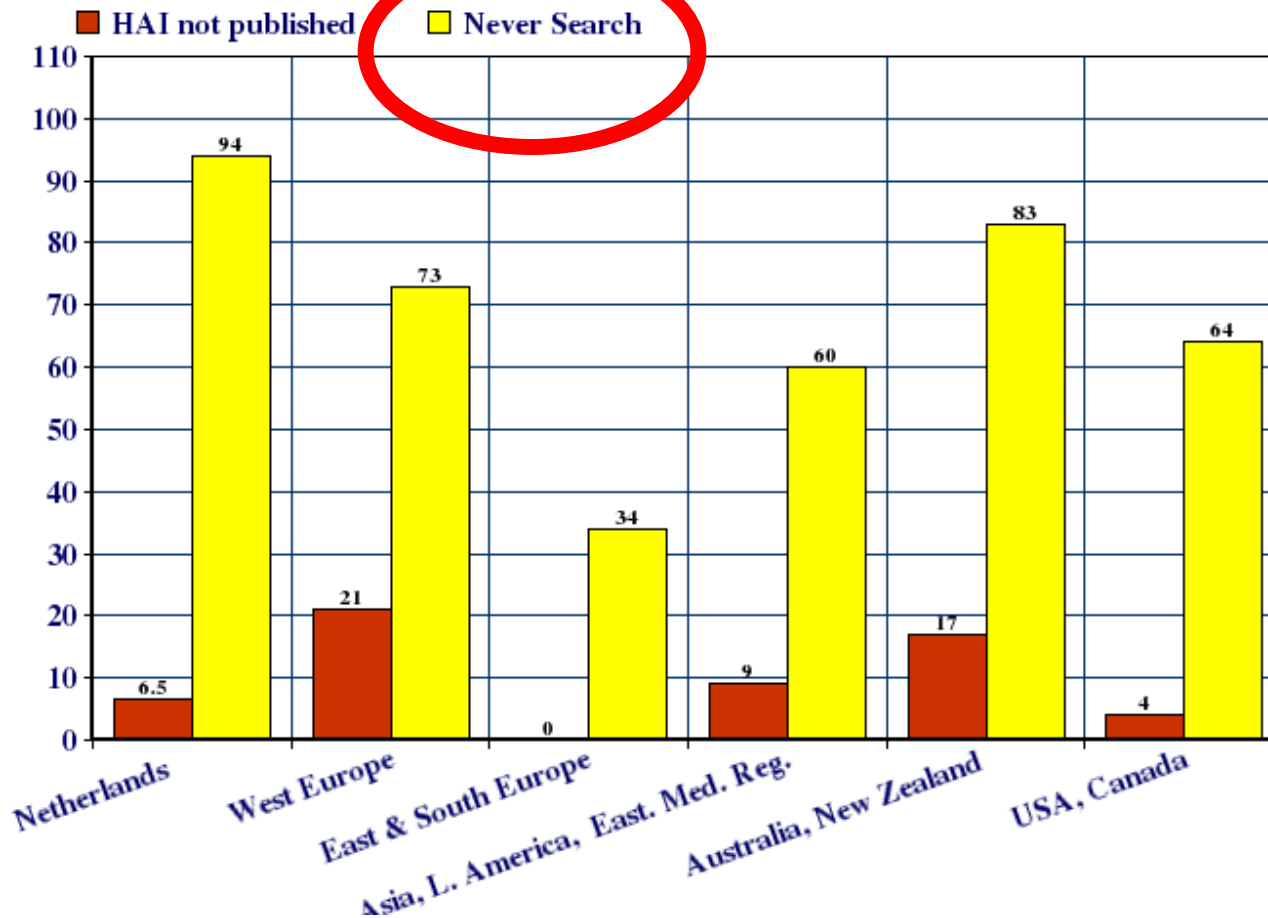
# Use of WD (%)



-  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  
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# 4-21 % reported HAI WD and Bedpans as the Source



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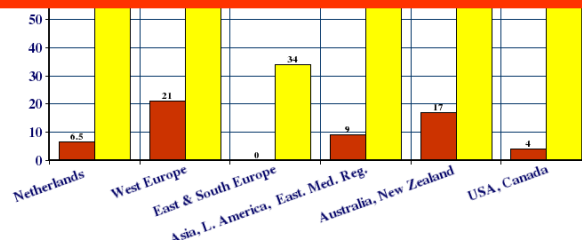
# 4-21 % reported HAI WD and Bedpans as the Source

## Reported Microorganisms:

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



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



Survey 2010 Bedpan Management  
KNIP Consultancy Infection Prevention  
[www.info@knip-consult.eu](http://www.info@knip-consult.eu)

# Enteric Precautions



# Basic Precautions

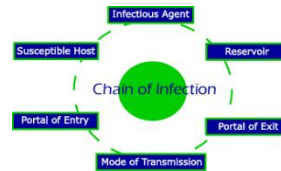
*Every patient must be treated as colonised or infectious*

1. Handhygiene & Personal hygiene
2. Cleaning & Disinfection procedure
3. Aseptic technique
4. Laundry & Waste handling
- 5. *Careful human waste handling***

# 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

# 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 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**

# Cleaning, Disinfection, Sterilization

## Classification scheme: Spaulding, USA, 1968

### Critical Items: Sterilization

Affect normally sterile sites  
**Surgical instruments**

at the highest level of infection risk.

### Semi-critical

Second in importance  
a high level of infection control

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



### 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.**



# 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

| Country        | Total answers |
|----------------|---------------|
| Germany        | 178           |
| Canada         | 161           |
| United States  | 141           |
| France         | 76            |
| Australia      | 66            |
| Thailand       | 55            |
| Mongolia       | 41            |
| India          | 40            |
| United Kingdom | 34            |
| China          | 32            |
| South Africa   | 23            |
| Egypt          | 22            |
| Netherlands    | 19            |
| Hong Kong      | 17            |
| Pakistan       | 17            |
| Uruguay        | 17            |
| Indonesia      | 16            |
| Denmark        | 16            |
| Saudi Arabia   | 11            |
| Tunisia        | 11            |
| Belguim        | 10            |
| Norway         | 10            |
| <b>Total</b>   | <b>1013</b>   |

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

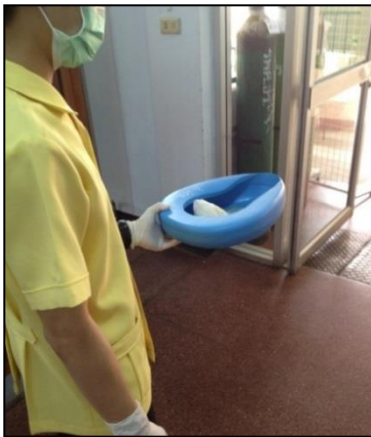


### Who is caring if defecation is done in bed

- 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***



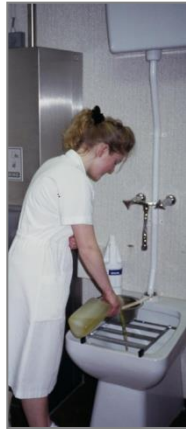
# Transport to empty

- ***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



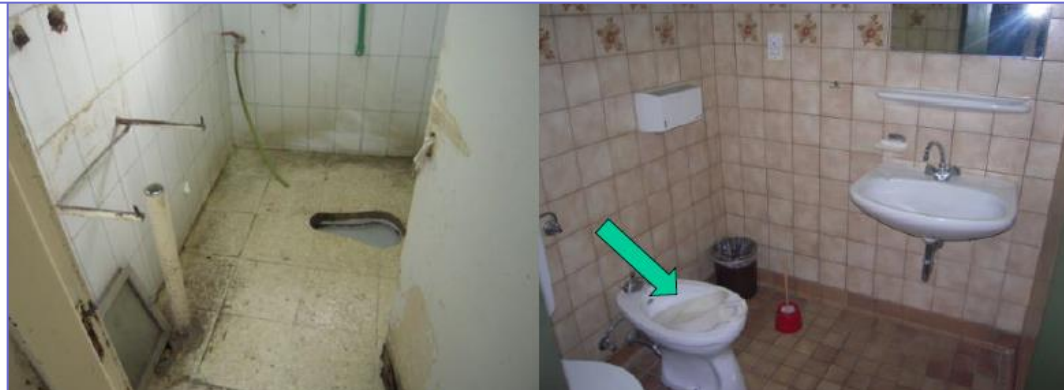
## Environment often not cleaned afterwards

- *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

Something hardly noticed

## Environment

- Floors
- Walls
- Surfaces
- Clean items



# Risks Sink & Slop-hoppers

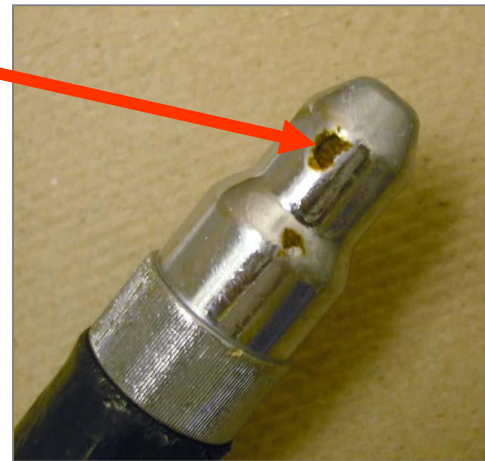


- Flush
  - Rinse
  - Water spray
  - No Disinfection
  - Manual Handling
- Splash, Splatter, Aerosols



# 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:  $\pm 30\%$*

*Dr. William A. Rutala:  $\pm 50\%$*



**Will Bedpans 100% touched?**

*after final cleaning MRSA, Venlo 2008*

# 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)**



**NOT a SAFE procedure!**

# Drying

## Potential Reservoirs!



# Storage in Dirt Utility Rooms



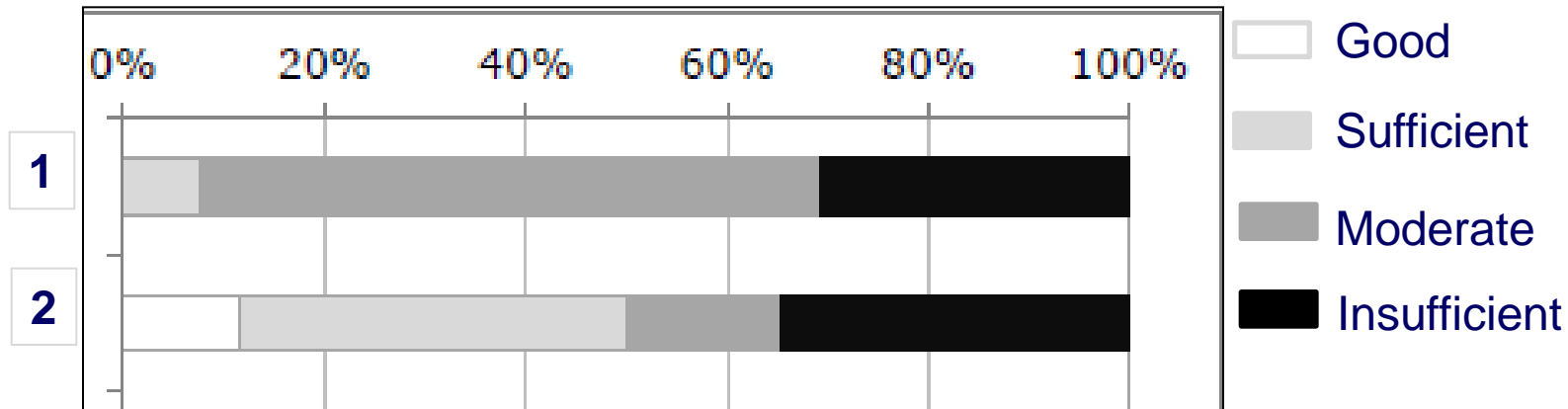
- No separation clean & contaminated
- Not much attention & Not everywhere recognized



# Report Dutch Healthcare Inspection December 2013

## Infection Prevention in Hospitals

“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”*

[www.igz.nl/zoeken/document.aspx?doc=Keten+van+infectiepreventie+in+ziekenhuizen+breekbaar%3A+meerdere+zwakke+schakels+leiden+tot+onveilige+zorg&docid=6677](http://www.igz.nl/zoeken/document.aspx?doc=Keten+van+infectiepreventie+in+ziekenhuizen+breekbaar%3A+meerdere+zwakke+schakels+leiden+tot+onveilige+zorg&docid=6677)

# 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

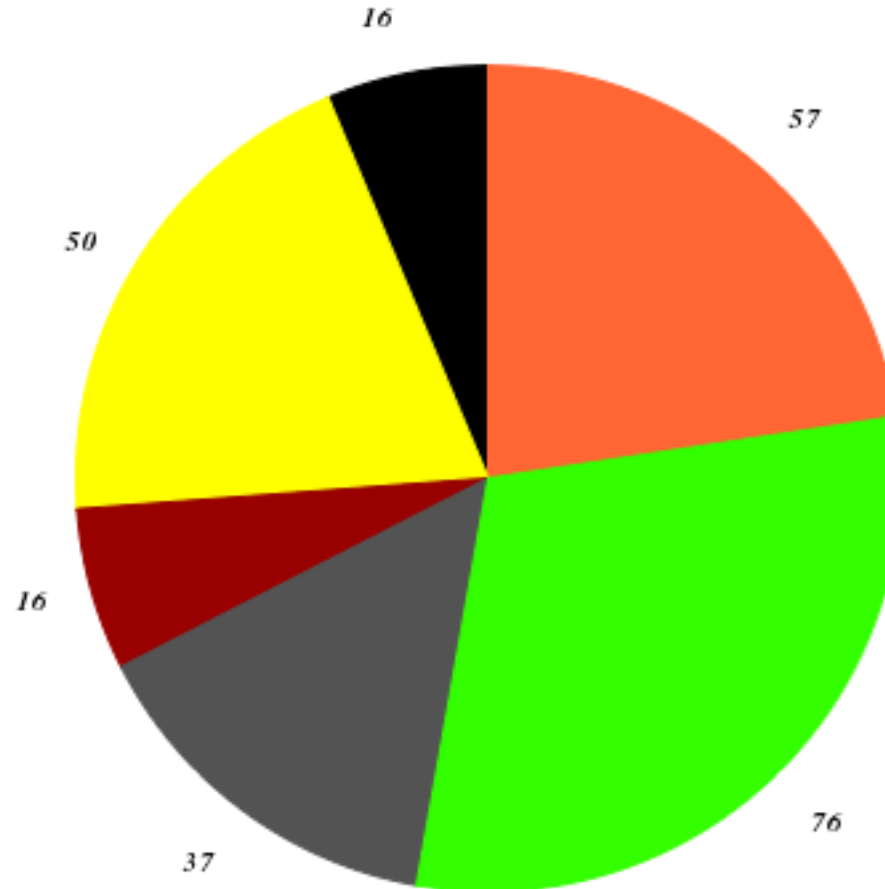
1. Emptying behind closed door direct in Sanitary sewer system
2. Flushing with cold water
3. Cleaning with water pressure and (sometimes) detergent
4. Thermal disinfection (minimal 1 minute 80° C.)
5. Rinsing / Cooling down
6. Drying

### Intended for reusables such as:

- Bed pans,
- Urine bottles,
- Suction bottles
- Wash bowls
- etc.

# Awareness of ISO 15883-3 WD

- *Netherlands*
- *West Europe*
- *East & South Europe*
- *Afr, As, L America, East Med Reg*
- *Australia, New Zealand*
- *USA, Canada*



Survey 2010 *Bedpan Management*  
KNIP Consultancy Infection Prevention  
[www.info@knip-consult.eu](http://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 disinfectant 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

A photograph of a female nurse in a white uniform, smiling and holding a bedpan. The photo is semi-transparent and serves as a background for the central text.

**Merci pour votre attention**

**Bedpan Management  
Must be part of Patient Safety**