



# How to Bridge the Gap Between Knowledge and Practice

Gertie Van Knippenberg-Gordebeke, APIC International Section Chair  
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How to bridge the gap  
between knowledge and practice




Gertie van Knippenberg-Gordebeke, RN, CCIP  
[info@knip-consult.eu](mailto:info@knip-consult.eu)

Teleclass sponsored by  
  
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Hosted by  
Dr. Maryanne McGuckin  
McGuckin Methods International

 [www.webbertraining.com](http://www.webbertraining.com) April 3, 2014

**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,

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APIC 2013, Shanghai 2

And..

Learn about a success story in the Netherlands

And...





Take notice of  
quotes from  
international  
highly recognized  
professionals.

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Objectives

- Describe the gaps between process & practice
- Identify different pillars to bridge these gaps
- Describe factors for behavioral change
- Identify the tools to break through in old systems




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Healthcare Associated Infections



**1985**  
*Most Nosocomial Infections are preventable,  
caused by inappropriate patient-care.*  
Robert Haley, SENIC study

**2000**  
*We have met the enemy.  
He is us.*  
B. Farr, ICHC 2000; 21:41

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*We know  
what works  
but we fail  
to make it  
work.*

Chandrakant S. Ruparelia (Rupe) MD, MPH  
Jhpiego-Innovating to Save Lives  
February 2014

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## Why

did they (we) not yet succeed in reducing Healthcare Associated Infections (HAI)

- Time pressure
- Frequent interruption
- Tiredness
- Lack of skills
- Staff shortage
- No mentorship
- Lack of knowledge
- Insufficient budget
- Resistance to change
- Lack of support
- No accountability

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## 2014

50 Years  
Infection Prevention Programmes in Healthcare


Preventive measures not imbedded in daily care

- > Low compliance hand hygiene
- > Healthcare settings are not clean
- > Misuse of antibiotics

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## 2014

50 Years  
Infection Prevention Programmes in Healthcare



- Gap between Evidence & Practice
- Gap between Process & Practice

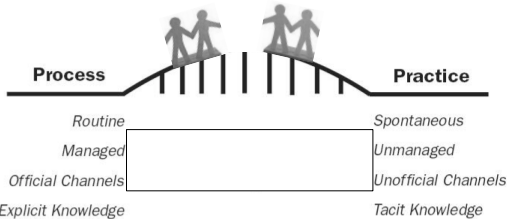
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## Gap between Evidence & Practice

- Healthcare institutes are full of 'knowledge' experts
- Few who (can) implement knowledge
- Much talking activity for action, but no little change
- Measurements that lead nowhere
- Internal competition

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## Gap between Process & Practice



Vance Caesar Group book summary [www.vancecaesar.com](http://www.vancecaesar.com)

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The gap is directly linked to the reality that unlike industry we do not produce things: we help others manage their unique health reality toward wellness.


Patti Grant, RN, BSN, MS, CIC, 2013 APIC President, USA  
February 2014  
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**Prevention Blood Borne Disease**

- Effective vaccination program?
- Safety engineered devices?
- Surveillance for sharp injuries?
- Post exposure procedure?
- Protocols up to date?


**Gap between evidence and practice**



Unclosed containers




Recapping



Exposure prone procedure

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**Healthcare workers do not realize what they don't know.**

Jim Gauthier, Canada, Infection Control Practitioner Past president CHICA  
 February 2014  
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**Prevention Blood Borne Disease**


**One protocol...  
Same ward... Same day...**

**Gap between evidence and practice  
Different People**

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**Protocols are Excellent...**



**Gap between evidence and practice**

- Often too complicated
- Sometimes not made by bedside practitioners
- Worthless if no one reads or follows them
- Not a guarantee for compliance
- Do not automatically change behavior


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**Factors for Behavioral Change**


- Values & standards
- Culture
- Education & training
- Age related
- Live & work environment
- Technology
- Economy
- Legislation
- Personality & attitude

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**Personality & Attitude**



*the Mind wants change*



*the Head wants progression*




*the Heart wants to keep what it got*  
Prof.dr. Andreas Voss, the Netherlands

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### Personality & Attitude




- I do not know → **Education**
- I do not have the facility → **System change**
- I do not (like) want it → **Motivation**

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The experts  
(IC professionals & managers)  
are too much involved  
into policy thinking  
& business  
organization,  
without looking at the  
problems and practices  
at the work floor.

Patrick van de Poel, RN, CCIP, the Netherlands  
February 2014  
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### Pillars for Bridging the Gap




Education + System Change + Motivation

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### Education

- When
- Where
- How
- By whom
- For whom
- Frequency
- Methods




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### New teaching methods?


<http://www.wsp.org/content/2014-cartoon-calendar>

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### Different Learning Methods Needed



**Baby Boomers 1945-1964**  
*Tell me WHAT to do*



**X Generation 1965-1980**  
*Show me HOW to do it*



**Y Generation (Millennials) 1981-now**  
*WHY do I need to know?*

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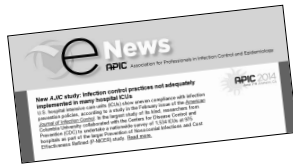
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### Education Infection Prevention HOW?

- Classes
- E-learning
- Apps
- Professional journals
- Conferences
- Regular media
- Social Media
- Campaigns
- Ludic actions
- Flyers
- Posters



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**State of infection prevention in US hospitals enrolled in the National Health and Safety Network**  
 Patricia W. Stone, PhD, FAAN, Meika Pogorzelska-Maziarz, PhD, MPH, Carolyn T.A. Heitz, MS, Lindsay M. Weiner, MPH, E. Yoko Furuya, MD, MS, Andrew Dick, PhD, Elaine Larson, PhD, FAAN  
 AJIC: American Journal of Infection Control, Volume 42, Issue 2, Pages 94-99, February 2014

- Considerable variation in the organization and structure of infection prevention and control programs across the nation.
- One-third of the hospitals have no certified Ips (1000 hospitals)
- Establishing policies does not ensure clinician adherence at the bedside.
- Little time spent on prevention process education
- Evidence-based practices related to CAUTI prevention have not been well implemented.

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There is no surveillance about bad practices & bad events, to show the bad doctors or nurses when they do bad practice.

Dr. Ahmed Ebraheem  
Youness, Egypt  
February 2014

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### Education by Posters is Not Enough



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### Education (and Lobby) To whom and how often ?

- Physicians
- Nurses
- Para-medical staff
- Technical staff
- Cleaning staff
- Management (policy-makers)
- Medical schools and - universities
- Politics
- Patient groups
- Public

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Emphasizing the importance of educating medical students during their training - as well as in the right behavior of medical doctors to prevent iatrogenic HAI.

Prof. Manfred Rotter,  
Austria  
February 2014

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## Power of the Media



- Repetition
- Everybody knows
- Politics awareness




- Recognition problem
- (Inter)national actions
- Generates budget
- National guidelines




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## System change



- Computerization
- Adequate facilities
- Workable protocols
- Clear guidelines

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We accept the limitations of time, infrastructure and limited training of the people around us.

Prof. Dr. Paul Tambyah, Singapore

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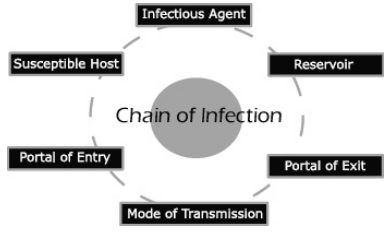
## Motivation



- Role models
- Train the trainer
- Link nurses
- Imbedding in routine care
- Management support is necessary
- Cooperation with industry (project-based)

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**TEACH EVERYBODY TO:**  
 break the chain of infection  
 &  
 notify their own responsibility



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## Cleaning & Disinfection

Gap between evidence and practice



- Everybody is an “EXPERT”
- Correct methods?
- Correct materials?
- Protocols?
- No popular job
- Difficult to monitor
- Responsibilities not clear

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**Once upon a time...**

One day a special task has to be performed.

**Everybody** was asked to cooperate.  
**Everybody** thought **Everybody** would do it.

And although **Everybody** could have done it **Nobody** did it.

**Somebody** became angry because **nobody** did the task  
 what **Everybody** should and could have done

Unfortunately, **Everybody** thought that **Somebody** would do it  
 But **Nobody** realized that **Everybody** would not do it.

**Everybody** blamed **Somebody**  
 and **Nobody** did what **Everybody** could have done.

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**Bedpan Management**

**Gap between evidence and practice**

Unnoticed Risks

➤ **Contamination**

- Environment
- Hands

➤ **Transmission**

- Hands
- No clean bedpan/urinal

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**Cleaning & Disinfection**

**Gap between evidence and practice**

*Acceptance*  
 and practice

• **Who is the user?**  
 Who is the user?  
 • **Who is responsible?**  
 Who is responsible?

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**Cleaning & Disinfection**

**Best Cleaned Ward of the Month (?)**

- Is essential part of infection prevention
- Make the task important
- Education and training including the cleaners
- Budget

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**Cleaning & Disinfection**

**Hazard**

**Analysis**

**Critical Control Points**

Proved to be successful in food processes

Why not used in other processes?

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If the basic knowledge of nurses, doctors and cleaners lacks basic I.P. principles you cannot expect them following complex guidelines.

See Paul Caesar, the Netherlands February 2014

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### Gap between evidence and practice

#### Transmission via hands

**Rate of Compliance**

A total of 120 occurrences of patient contact necessitated handwashing. The gross rate of compliance was 40%.

Professional Category	Rate of Compliance
Nurses	44%
Doctors	34%
Workers	22%

Carried out procedures in professional categories

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### Hand Hygiene

#### Gap between evidence and practice

- Too busy 4.9
- No equipment 4.3
- Continue old habits 3.8
- Management says nothing 3.7
- Too cumbersome 3.7
- Instructions not clear 3.4
- Against normal routine 3.5
- Disagree 3.0
- Patients do not like it 2.9

7 points score  
Results Enquête Nurses  
Prof. WH Seto, Hong Kong 2006

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### Hand Hygiene

#### Gap between rich and poor hospitals

**Rich Hospital**  
*No Hand-disinfection within 2 meters of care (easier for staff)*

**Poor Hospital**  
*Hand-disinfection within 2 meters of care (easier for staff)*

Implement the possibilities what really counts

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### WHO Patient Safety Challenge

#### Do YOUR healthcare workers know this?

- **Collaborate to focus on hand hygiene monitoring and feedback**  
Use the WHO Hand Hygiene Self-Assessment Framework (HHSAF) to check whether your facility has improved compared to last year. If you have never used it, please do so and join the thousands of facilities that have used this powerful tool to track their situation and progress with hand hygiene improvement.
- **Patients have a voice too!**  
Identify the best ways to gather patient participation in hand hygiene promotion and improvement, according to the local culture and your facility's current hand hygiene strategy.

Read more on 5 May 2013

<http://www.who.int/gpsc/5may/en>

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### 5 May 2014 International Hand Hygiene Day

It takes just 5 Moments to change the world

Clean your hands, stop the spread of drug-resistant germs!

No action today; no cure tomorrow.  
Make the WHO 5 Moments for Hand Hygiene part of protecting your patients from resistant germs

16 376 hospitals and health-care facilities in 170 countries (Netherlands 12 / 96) registered their commitment to hand hygiene

26 February 2014

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### Hand Hygiene

#### Gap between evidence and practice

## Acceptable ?

Less dangerous than "dirty" hands!

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Knowledge will sit  
on a shelf  
or lay buried in  
guidelines  
unless the  
community  
has the resources  
to bring them to life  
in practice.

Jeanne Pfeiffer, USA  
February 2014

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## Improvement

- Bridge the gap
- Audit
- Feedback
- Publication findings & results
- Share success stories



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## 2014 Infection Prevention

- Prevalence HAI is too high
- Weak approach for neglecting guidelines
- Responsibilities not clear
- Acceptance of current situation

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## 2014 Infection Prevention



**Waiting and hoping for change is not enough**

# Time for Action!

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## Behavior change



<http://www.wsp.org/content/2014-cartoon-calendar>


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## People can and will change only if they:

- Accept the change as a challenge
- Get involved
- Think it is useful
- Believe it works
- **Must** change

Future HAIs ?



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## 5 Steps to Change

1. Audit your own activities as IC&P professional
2. Involve CEO and management
3. Multidisciplinary approaches
4. Awareness through personnel
5. High 5s project: Action on Patient Safety  
*launched by the World Health Organization (2006)*

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## High 5s Project

Reduce the frequency of 5 challenging patient safety problems over 5 years

*Facilitate implementation & evaluation of standardized patient safety solutions within a global learning community to achieve measurable, significant and sustainable reductions in challenging patient safety problems*

<http://www.who.int/patientsafety/implementation/solutions/high5s/en/index.html>

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## Gap between evidence and practice

### High 5s Projects

1. Concentrated injectable medicines
2. Medication accuracy at transitions in care
3. Correct procedure at the correct body site
4. Communication failures during patient handovers
5. **Addressing Health Care-Associated Infections**

<http://www.who.int/patientsafety/implementation/solutions/high5s/en/index.html>




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## Dutch Action on Patient Safety 2006

### Break-through Projects

- Throughout the Netherlands
- Voluntary participation by hospitals
- Quality aspect
- Recognition by management
- Multiple projects
- Multidisciplinary



Snowball-effect intramural and extramural

Dutch Institute for Healthcare Improvement CBO: <http://www.cbo.nl/en>

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## Dutch Break-through Projects

- Initiative
- Start
- Analytical phase
- What products needed
- Action plan
- Assessment phase
- Plan development phase
- Realization phase
- Sustainability



**So you can work Faster & Better**

<http://www.cbo.nl/en>

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## Dutch Break-through Projects

Participating Hospitals

	2005	2006	2007
Decubitus	81	16	33
Medication safety	95	18	45
<b>Prevention SSI</b>	<b>26</b>	<b>9</b>	<b>11</b>
Safety reports incidents	38	18	22
Patient waiting list	68	18	50
Surgical Procedures: Okay	8	7	8
Processes re-design	77	17	49

**Efforts:**  
Surgical Site Infections ± 50% reduction


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## Reduction SSI




- Reduce number of opening door in operation room
- Reduce number of employees in the operation room
- Increase discipline operation room
- Improvement wound care on the ward

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## Best Practices Major Changes



- Minimize visitors
- Door-counters
- Pass-through hatch
- Reduction opening operating room-doors
- Reduction number of (needed) employees
- Telephone and intercom in the operating room
- Red light 'work in progress'
- Change *as little as possible during surgery*


<http://www.snellerbeter.nl>

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## Introducing Evidence Based Measures

Venlo, VieCuri hospital



- Pre-operative hair removal
  - Stop shaving
- Temperature management
  - In operating room
  - Keep patient warm
- Pre-operative antibiotic prophylaxis
  - Single dose
  - Right time
  - Right antibiotic

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## Sustainability

Stop Pre-operative Shaving:

- Hospital wide
- Patient brochure
- Removal razors

Pre operative Antibiotic prophylaxes:

- Hospital wide
- Record keeping
- Feedback

Temperature management:

- Buying heating aids
- Optimizing technical control

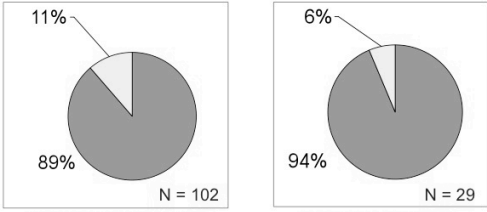
Venlo, VieCuri hospital

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## Surgical Site Infections 2006

Venlo, VieCuri hospital




Time Point	SSI Percentage	Sample Size (N)
Before intervention	11%	102
After intervention	6%	29

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## Success Break-through Achieved by:

1. Multidisciplinary collaboration (per hospital)
  - Delegate of hospital direction
  - Head nurse operating room
  - Head nurse surgical ward
  - Infection control nurse
  - Surgeon
  - Anesthetist
  - Med. microbiologist



Group Venlo, VieCuri hospital

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I identified organisational culture and social culture as two crucial factors that influence practices.

Dr. Brahm Marjadi, Indonesia  
February 2014

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### Success Break-through Achieved by:

- Education
- Bundle approach
- Feedback
- System changes
- Motivation
- **Opinion leaders**



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### Implementation of a Bundle of Care to Reduce Surgical Site Infections 2009

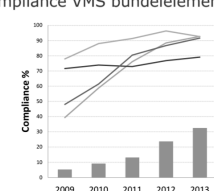
#### 4 Bundelelementen

- Hygiëne discipline op de OK**  
Het meten van het aantal deurbewegingen tijdens een operatie. Maximaal X maal de deuren geopend bij operatietype A.
- Antibioticaprofylaxe**  
Het juiste middel op het juiste tijdstip: 15-60 min voor incisie en bij lange operaties herhaling na 4 uur.
- Niet pre-operatief ontharen**  
Alleen ontharen met een tondeuse mits er operatietechnische redenen voor zijn.
- Peri-operatieve normothermie**  
De temperatuur van de patiënt moet tussen de 36 en 38 graden zijn aan het einde van de ingreep.

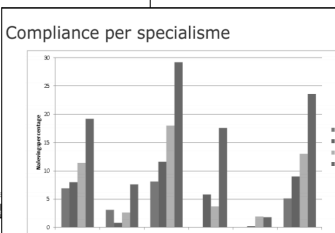
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### Results

#### Compliance VMS bundelelementen



#### Compliance per specialisme



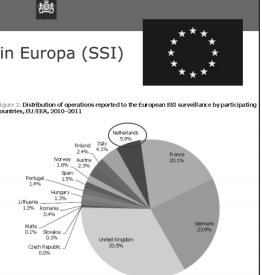
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### Surgical Site Infections 2010-2011

#### POWI surveillance in Europa (SSI)

Incidentiemeting van:

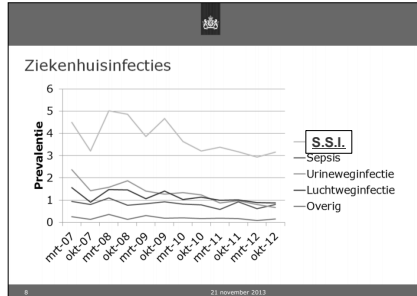
- CABG - hart bypass
- CHOL - cholecystectomie
- COLO - colonresectie
- CSEC - keizersnede
- HPRO - heupprothese
- KPRO - knieprothese
- LAM - laminectomie



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### Prevalence Surgical Site Infections (S.S.I.) the Netherlands 2007-2012

#### Ziekenhuisinfecties



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**How to Bridge the Gap Between Knowledge and Practice**  
**Gertie Van Knippenberg-Gordebeke, APIC International Section Chair**  
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We must Share, Learn and Use  
Different Methods to Bridge the Gap

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What happens  
if you do not do  
what you are  
supposed to?

Nothing!  
You still have your  
job.

Prof. Shaheen Methar,  
Infection Control Africa Network

Gertie van Knippenberg-Gordebeke, RN, CCP  
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**Thank you for listening**  
Holland

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**Coming Soon**

- April 8 (Free British Teleclass ... Denver Russell Memorial Teleclass Lecture)  
**ANTIBACTERIAL EFFICACY OF ATMOSPHERIC PRESSURE NON-THERMAL PLASMA**  
*Dr. Brendan Gilmore, Queen's University, Belfast, Ireland*
- April 9 (Free ... WHO Teleclass – North America)  
**HIGHLIGHTS ON SURGICAL SITE PREVENTION: THE NEW CDC GUIDELINES (AND MORE)**  
*Dr. Joseph Solomkin, University of Cincinnati College of Medicine*
- April 16 (South Pacific Teleclass)  
**PREVENTION OF MRSA BACTERAEMIA IN EUROPEAN HOSPITALS: SECRETS OF SUCCESS**  
*Dr. Michael Borg, St. Luke's Hospital, Malta*
- April 17  
**CHLORHEXIDINE PATIENT BATHING AS A MEANS TO PREVENT HEALTHCARE ASSOCIATED INFECTION**

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