

The Year in Infection Control

A (very) long year in infection control
Thomas Snoeij, UZ Gent

Stopping Hospital Infections With Environmental Services A Cluster-randomized Trial of Intensive Monitoring Methods for Terminal Room Cleaning on Rates of Multidrug-resistant Organisms in the Intensive Care Unit

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Stopping Hospital Infections With Environmental Services

A Cluster-randomized Trial of Intensive Monitoring Methods for Terminal Room Cleaning on Rates of Multidrug-resistant Organisms in the Intensive Care Unit

▶ RCT:

▶ Randomisatie:

- 3 ziekenhuizen – 3 X 2 ICU's (VS)

▶ Cross-over design

A	MICU	Baseline	ATP	//	UV/F
	SICU	Baseline	UV/F	//	ATP
B	MICU	Baseline	ATP	//	UV/F
	SICU	Baseline	UV/F	//	ATP
C	MICU	Baseline	UV/F	//	ATP
	SICU	Baseline	UV/F	//	ATP
		12M	6M	2M	6M

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- ▶ **Interventie** (5X per week) – geblindeerd - CDC Checklist

ATP monitoring

- ▶ Corrigerende acties + feedback



4 / SystemSURE Plus ATP (Hygiena) ®

Ultraviolet fluorescent (UV/F)

- ▶ Corrigerende acties + feedback



Glo-Germ Gel™ system (Ecolab)®

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▶ Outcome

- 48u na opname > Nosocomiaal verworven op IZ < 48 na ontslag
- Infectie -en kolonisatie status
- Staph aureus/ C. difficile/ VRE/ MDR gr- /1000 IZ-ptdagen

METHODE

Terminal Cleaning Intervention

Baseline

No intervention (visual monitoring)

ATP
or
UVIF

10 surfaces/ room
5 rooms/ week
Failed surfaces
re-cleaned

Direct real-time
feedback
Weekly feedback to
all EVS staff

Primary Outcome

MDRO infection + MDRO colonization
1000 patient days

Secondary Outcome

MDRO infection
1000 patient days

Primary Analysis

ATP

vs

UVIF

Secondary Analysis

ATP

vs

UVIF

+

Baseline

UVIF

vs

ATP

+

Baseline

Resultaten

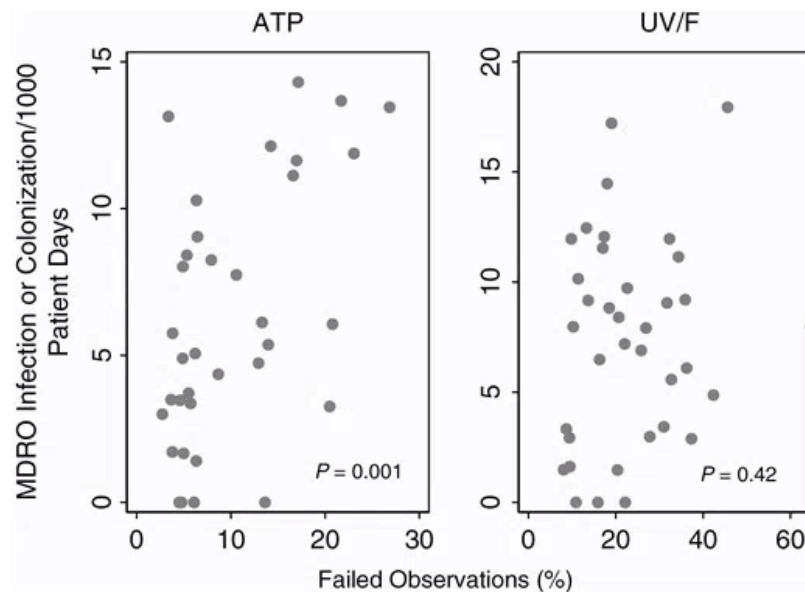
▶ ATP <-> UV/F

- ▶ ATP methode geassocieerd met een **risk reduction** MDRO: 0,876 ($P:0.002$) (*infection en colonisation*)

▶ ATP <-> UV/F + baseline

- ▶ ATP methode geassocieerd met **risk reduction** MDRO: 0,998 ($P:0.04$) (*infection*)

▶ ATP : MDRO correleert met opvolging van gemiste oppervlakken



Discussie

Sterktes

▶ Outcome

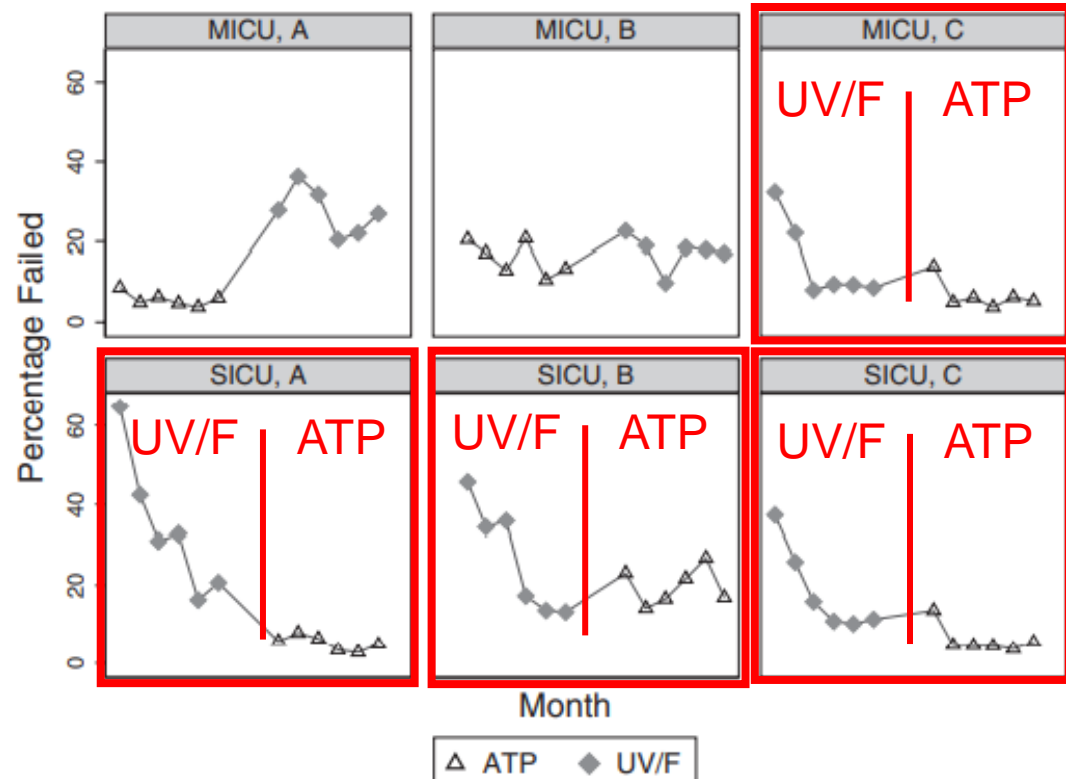
- ▶ UV/F & ATP afnames -> door study staff
- ▶ Schoonmaakpersoneel -> geblindeerd
- ▶ Covariaten in rekening genomen in multivariate analyse
 - ▶ Medical/surgical ICU
 - ▶ AB consumptie
 - ▶ Aantal schoonmaakmedewerkers
 - ▶ Gebruikte schoonmaakproducten
 - ▶ Homogeniteit bewaard (RCT)

Discussie

Beperkingen

A	MICU	Baseline	ATP	//	UV/F
	SICU	Baseline	UV/F	//	ATP
B	MICU	Baseline	ATP	//	UV/F
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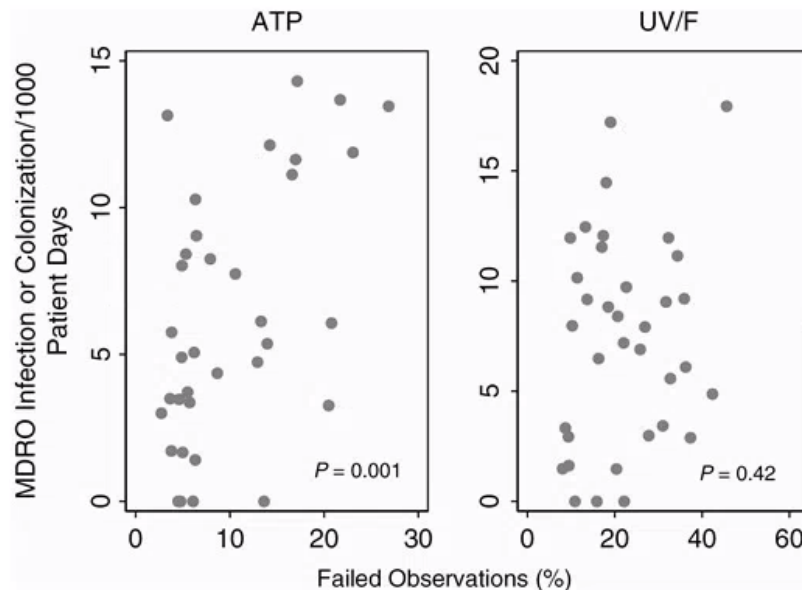
Period effect
 <-> *Carry-over effect*



Discussie

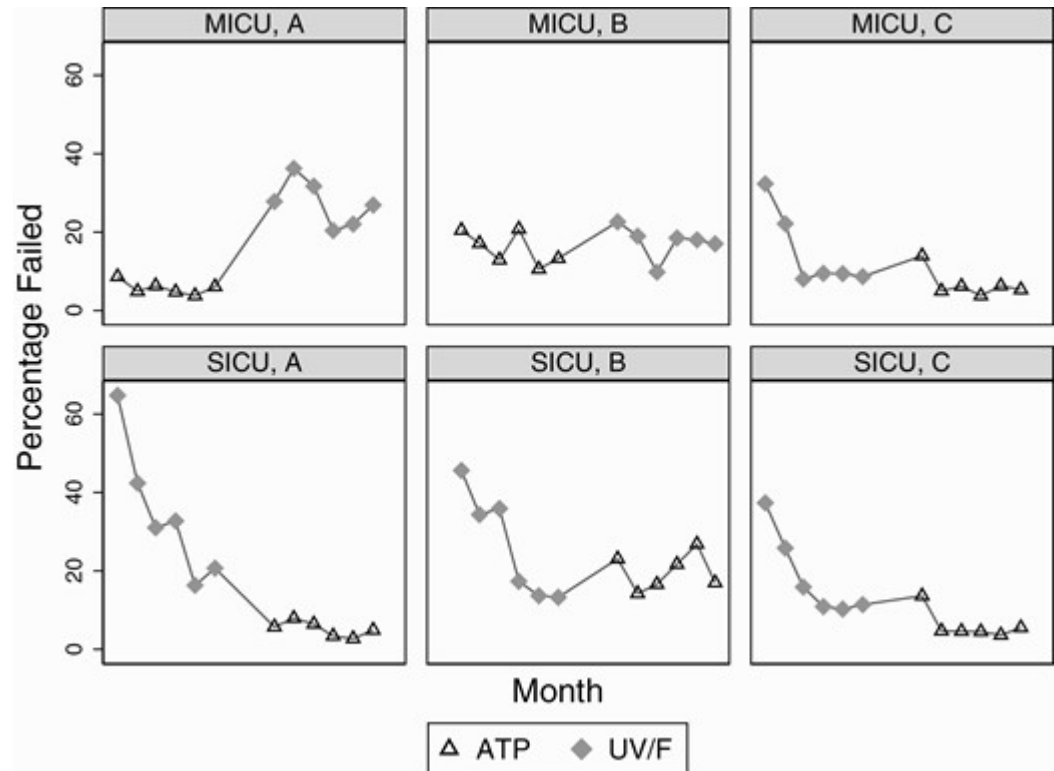
Beperkingen

- ▶ ATP (Hygiëna®):
 - ▶ 25 RLU: pass/fail
 - ▶ Benchmark (Hygiëna®): 100 RLU ¹
 - Schoonmaakinterventies **ATP > UV/F**



Conclusie

- ▶ ATP vs UV/F ?
- ▶ Onderhoudspersoneel bijsturen
-> impact op outcome



ATP
OR
UV/F

10 surfaces/ room
5 rooms/ week
Failed surfaces
re-cleaned



Direct real-time
feedback
Weekly feedback to
all EVS staff

Handhygiene

- ▶ Opinion paper - The problem with
- ▶ School of Health Sciences, London
- ▶ Editorial
- ▶ IPC Technical & Clinical hub, WHO, Geneva & CHU
- ▶ BMJ Qual & safety
 - IF 21-22: 7

THE PROBLEM WITH...

The problem with 'My Five Moments for Hand Hygiene'

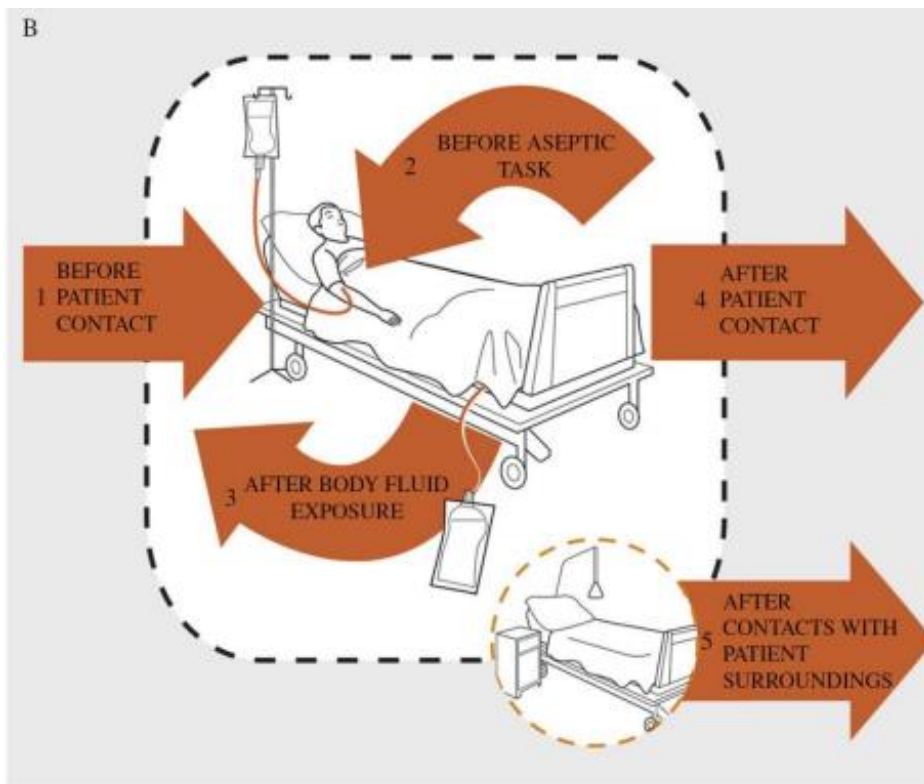
Dinah Gould,¹ Edward Purcell ,² Annette Jeanes,³ Nicolas Drey,² Jane Chudleigh,² Jacob McKnight ⁴

EDITORIAL

'My Five Moments': understanding a user-centred approach to hand hygiene improvement within a broader implementation strategy

Benedetta Allegranzi,¹ Claire Kilpatrick,¹ Hugo Sax,² Didier Pittet³

My five moments of handhygiëne



Sax et al. (2007) 'My five moments for handhygiëne: a user centered approach to understand, train, monitor and report hand hygiene

- ▶ Het ontwikkelen van de 5 momenten includeerde de perspectieven van de stakeholders niet
- ▶ De omgeving van de patiënt is niet gedefinieerd
- ▶ 100% compliantie is niet mogelijk

Het ontwikkelen van de 5 momenten includeerde de perspectieven van de stakeholders niet

- ▶ Ontworpen als een framework

**'My five moments for hand hygiene':
a user-centred design approach to understand,
train, monitor and report hand hygiene**

Sax et al. (2007)

- ▶ Perspectief van de gezondheidswerker:
 - ▶ Zhao et al. (2018): How to make hand hygiene interventions more attractive to nurses: A discrete choice experiment

Het ontwikkelen van de 5 momenten includeerde de perspectieven van de stakeholders niet

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**'My five moments for hand hygiene':
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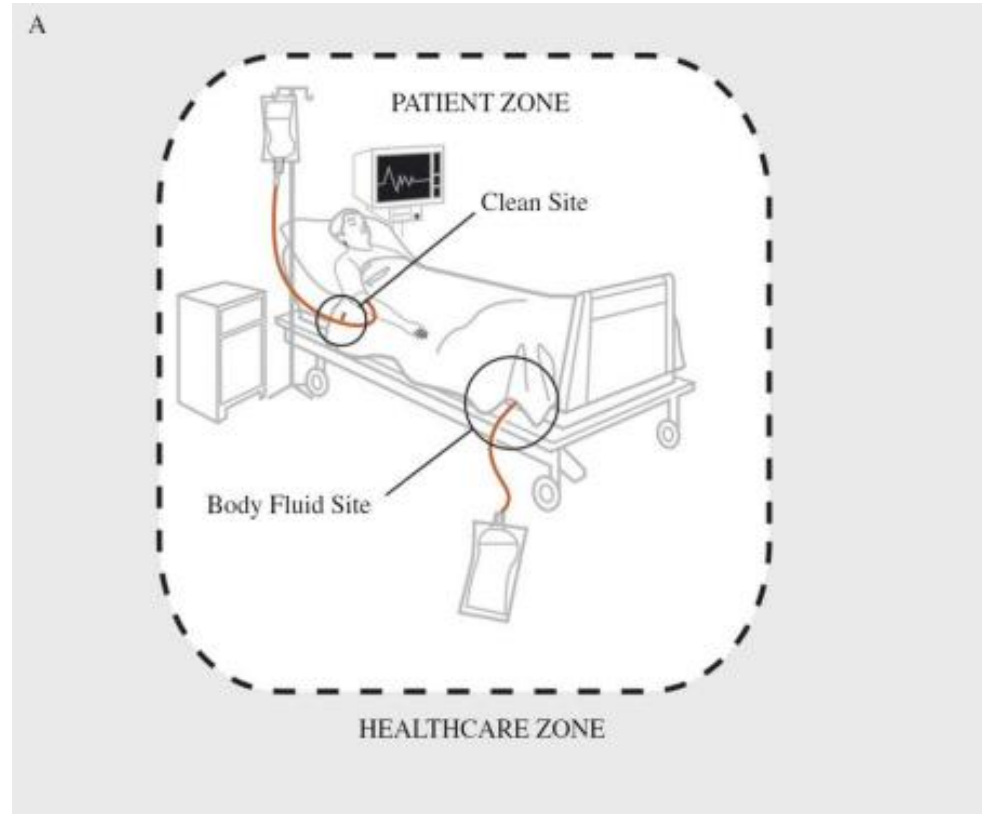
Sax et al. (2007)

- ▶ Perspectief van de gezondheidswerker:
 - ▶ Zhao et al. (2018): How to make hand hygiene interventions more attractive to nurses: A discrete choice experiment

Variables	Marginal utility values*	St. Err.	P-value
ADVANTAGE_yes [no]	0.1414***	0.0283	<0.001
COMPATIBILITY_yes [no]	0.1885***	0.0274	<0.001
SIMPLICITY_high [low]	0.1086***	0.0274	<0.001
TRIALABILITY_yes [no]	0.1987***	0.0274	<0.001
OBSERVABILITY_yes [no]	0.1803***	0.0286	<0.001

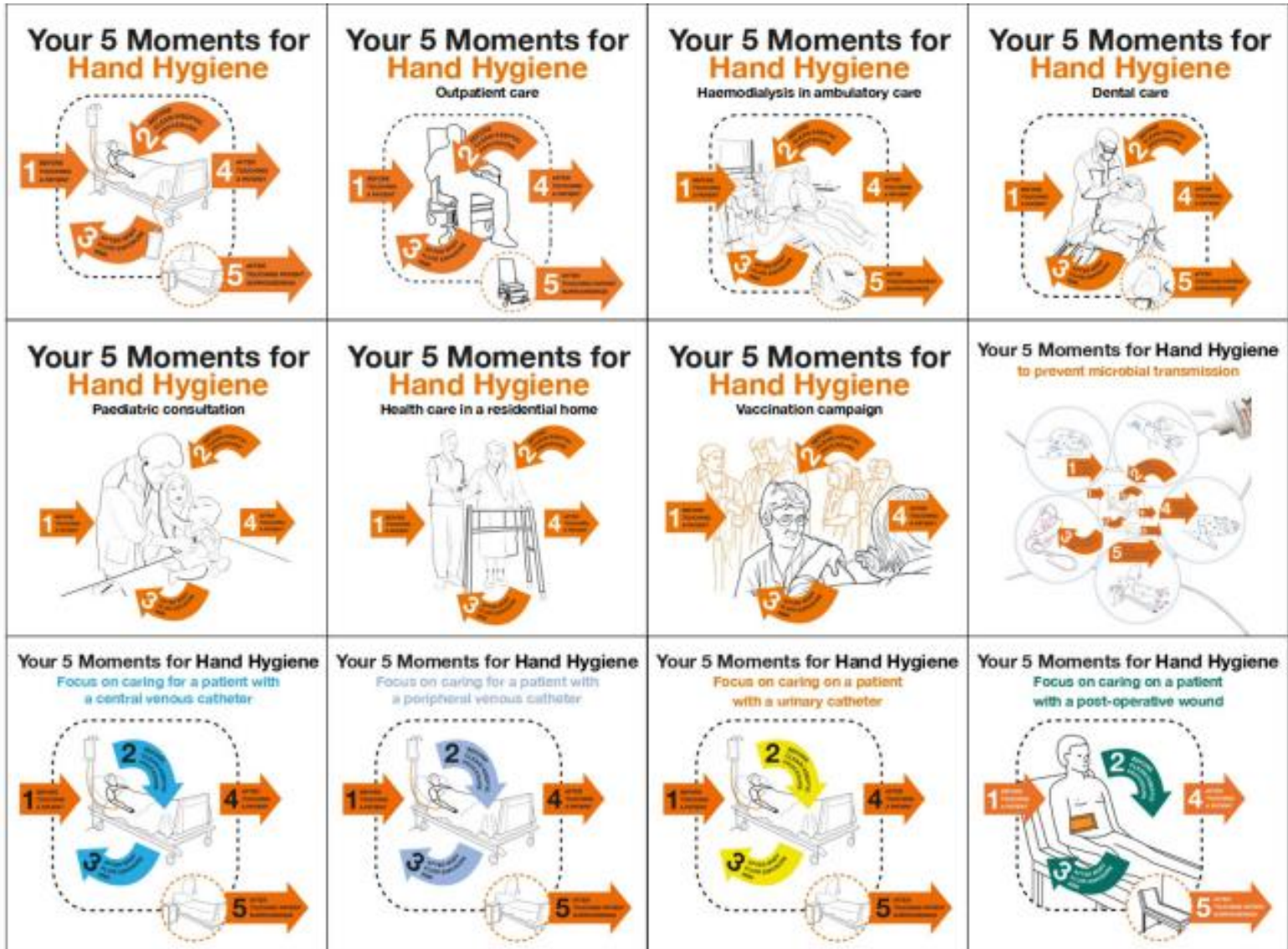
De patiëntenzone is geen vaste entiteit

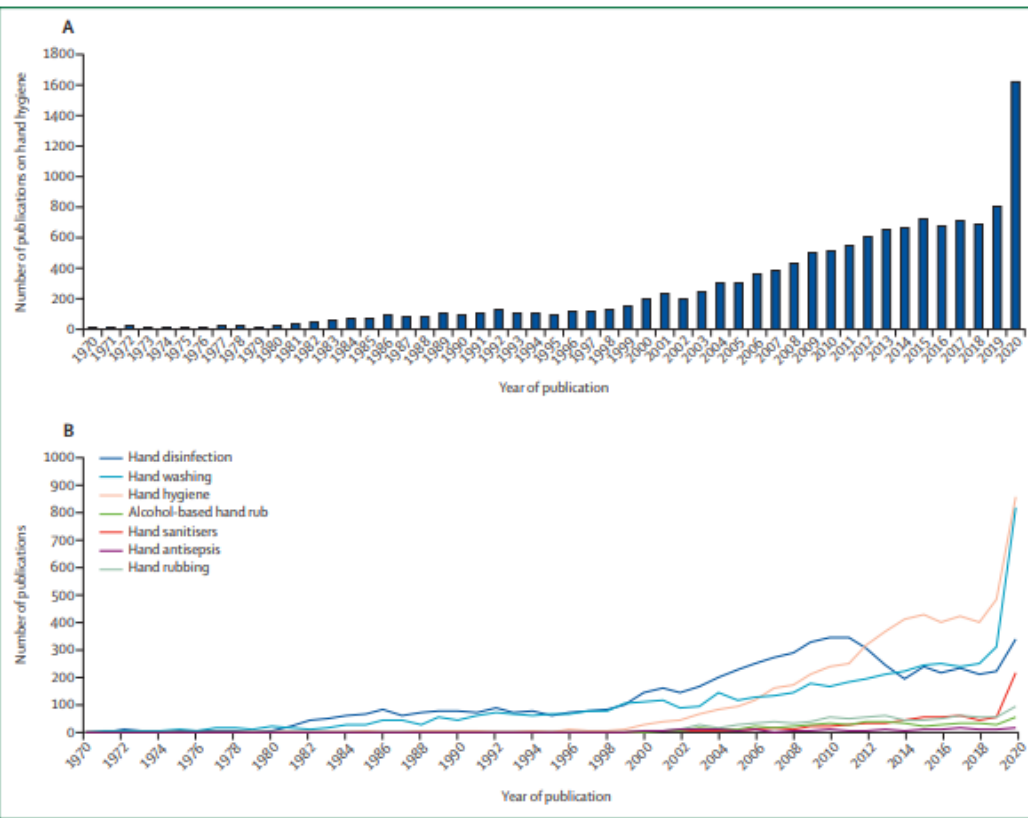
- ▶ Definitie: Sax (2007)
- ▶ Het belang van de omgeving in het risico op transmissie



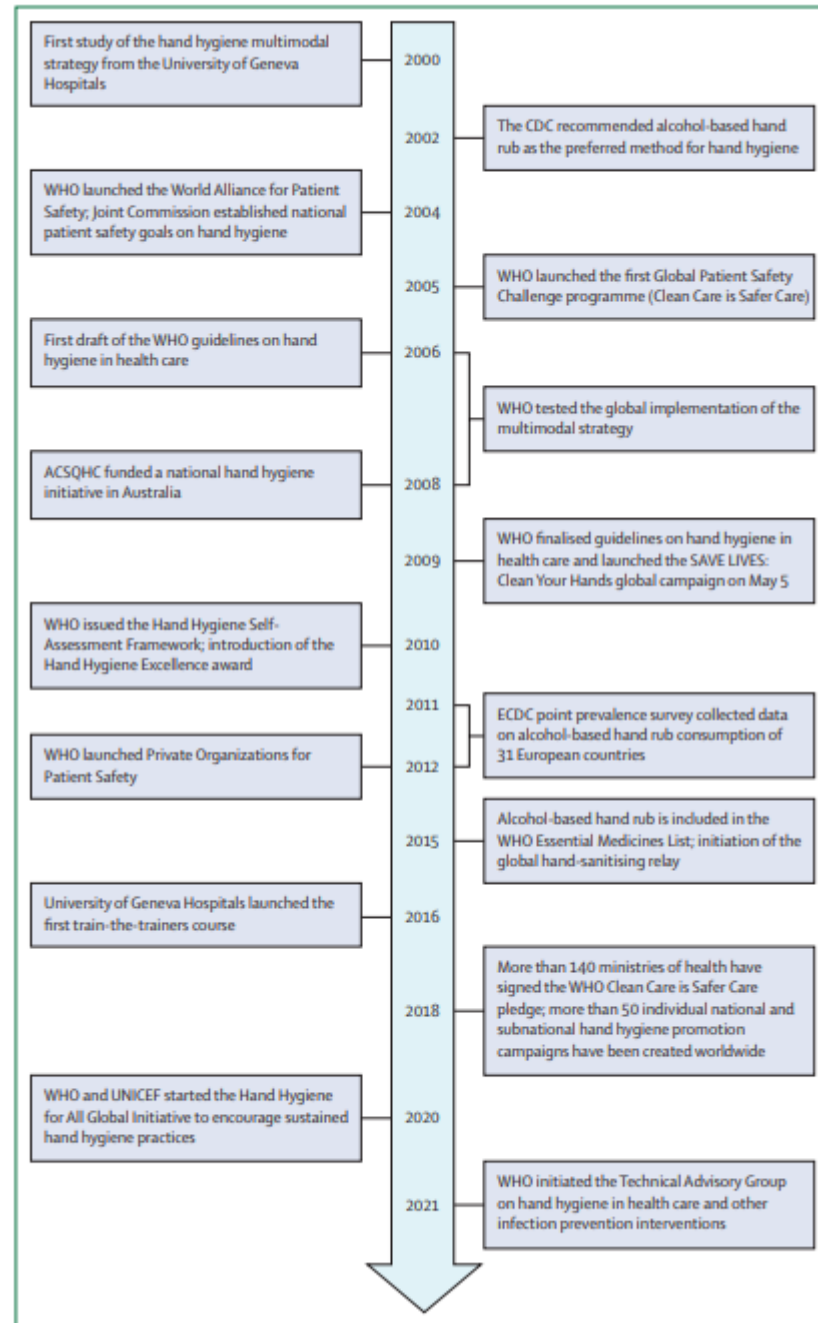
Overige problemen

- ▶ Momenten voor handhygiëne overlappen
- ▶ Geen weging tussen de verschillende momenten
- ▶ Observaties voor handhygiëne zijn onderhevig aan interrater bias en Hawthorne effect





Lotfinjad et al (2021) Handhygiene in health care: 20 years of ongoing advances and perspectives- The Lancet



Toekomst

Panel 1: Hand hygiene research agenda: 2021 and beyond—55 proposals³⁴

Simplification of the hand hygiene concept

- ▶ 12 Identifying the contribution of each of the WHO My Five Moments for Hand Hygiene to specific infectious outcomes and causes
- ▶ 13 Understanding whether a simplification of the My Five Moments concept would be appropriate and safe
- ▶ 14 Proposing alternative hand hygiene concepts to improve the overall effectiveness on patient outcomes
- 15 Studying the best technique to clean hands compared with the current standard WHO six-step How to handrub technique, using validated microbiological and clinical performance indicators
- 16 Testing alternative simplified steps to improve both hand hygiene techniques and compliance

Lotfinjad et al (2021) Handhygiene in health care: 20 years of ongoing advances and perspectives- The Lancet

SHEA/IDSA/APIC Practice Recommendation

Strategies to prevent central line-associated bloodstream infections in acute-care hospitals: 2022 Update

Katheter-gerelateerde Bloedstroominfecties

► Probleem

Author, year	Excess cost ICU stay (d.)	Excess cost Hospital stay (d.)	Cost
Warren, D 2006	2.4	7.5	\$ 11 971
Higuera F. 2007	6.1	-	\$11 591
Blot S, 2005	8	12	€13 858
Schwebel C. 2012	11	-	\$24 090

Met toestemming van Blot S.

Katheter-gerelateerde Bloedstroominfecties

► Probleem

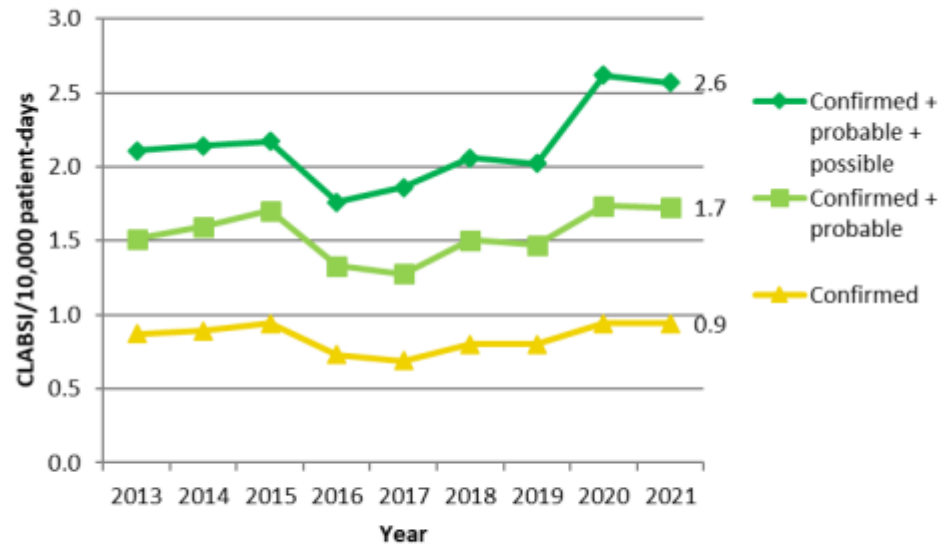


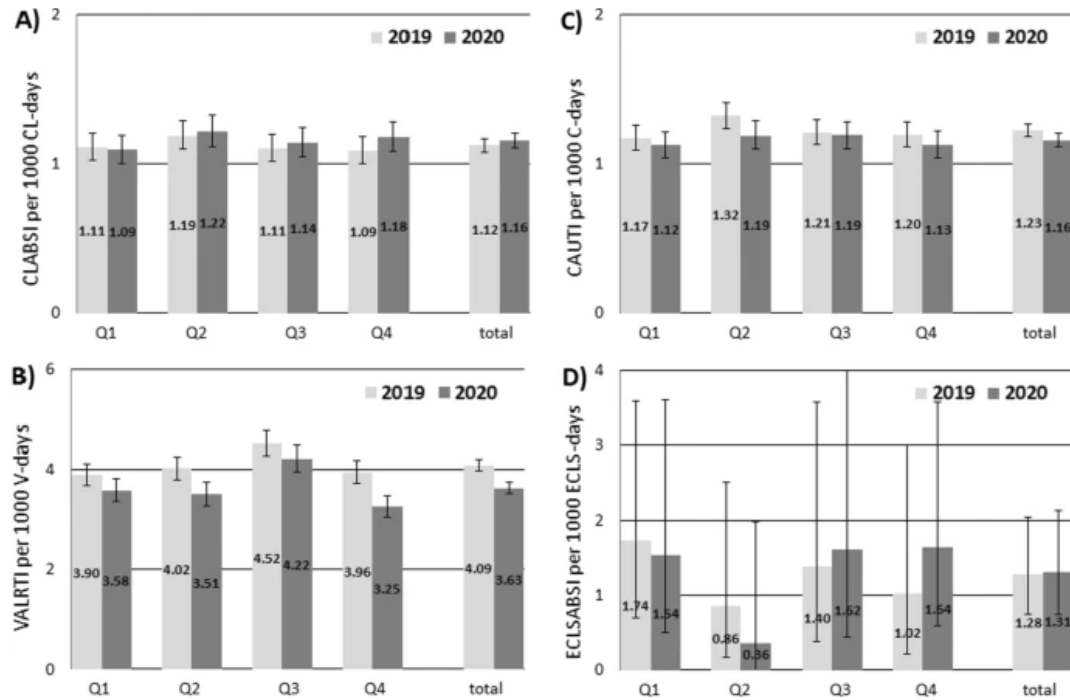
Figure 6: Mean incidence of central line-associated bloodstream infections (confirmed, probable, and possible), hospital-wide, Belgium 2013-2021 (CLABSI, central line-associated bloodstream infections)

Sciensano: Surveillance of BSI's in Belgian hospitals a report 2022

Katheter-gerelateerde Bloedstroominfecties

► Probleem

Fig. 1



A–D Pooled mean device associated infection rates with 95% confidence intervals in the year 2019 and 2020 in total and by quarter, ICU-KISS (Germany)

Geffers et al. (2022) No increase in german ICU during the start of the COVID -19 pandemic

Katheter-gerelateerde Bloedstroominfecties

- ▶ Belang



Vice-eersteminister
en minister van Sociale Zaken
en Volksgezondheid

Frank Vandenbroucke

HERVORMING VAN DE ZIEKENHUISORGANISATIE EN -FINANCIERING

Minister Frank Vandenbroucke

28 januari 2022

OPINIE

Open brief: Nationaal sepsis plan België



28/11/22 om 11:39

In een open brief vragen de Belgische artsen-, verpleegkundigen- en ziekenhuisorganisaties een versnelling in de opmaak van een nationaal sepsis plan.

De SPECIALIST
De actualiteit voor de arts-specialist

opiniestuk

Artsen
krant

SHEA/IDSA/APIC Practice Recommendation

Strategies to prevent central line-associated bloodstream infections in acute-care hospitals: 2022 Update

- ▶ Nieuwe essentiële aanbevelingen
 - ▶ Voorkeurslocatie = V. subclavia
 - ▶ Echo geleide plaatsing
 - ▶ CHX verbanden = “essential practice”
 - ▶ Vervangen leidingen = elke 7 dagen

- ▶ Nieuwe aanvullende maatregelen
 - ▶ Antimicrobiële zalf thv insteekplaats bij hemodialysepatiënten
 - ▶ Antiseptische afsluitdopjes
 - ▶ Katheter teams

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