Håndhygiene

Er det nå så sikkert at det er det viktigste tiltaket mot helsetjenesteassosierte infeksjoner?

Egil Lingaas

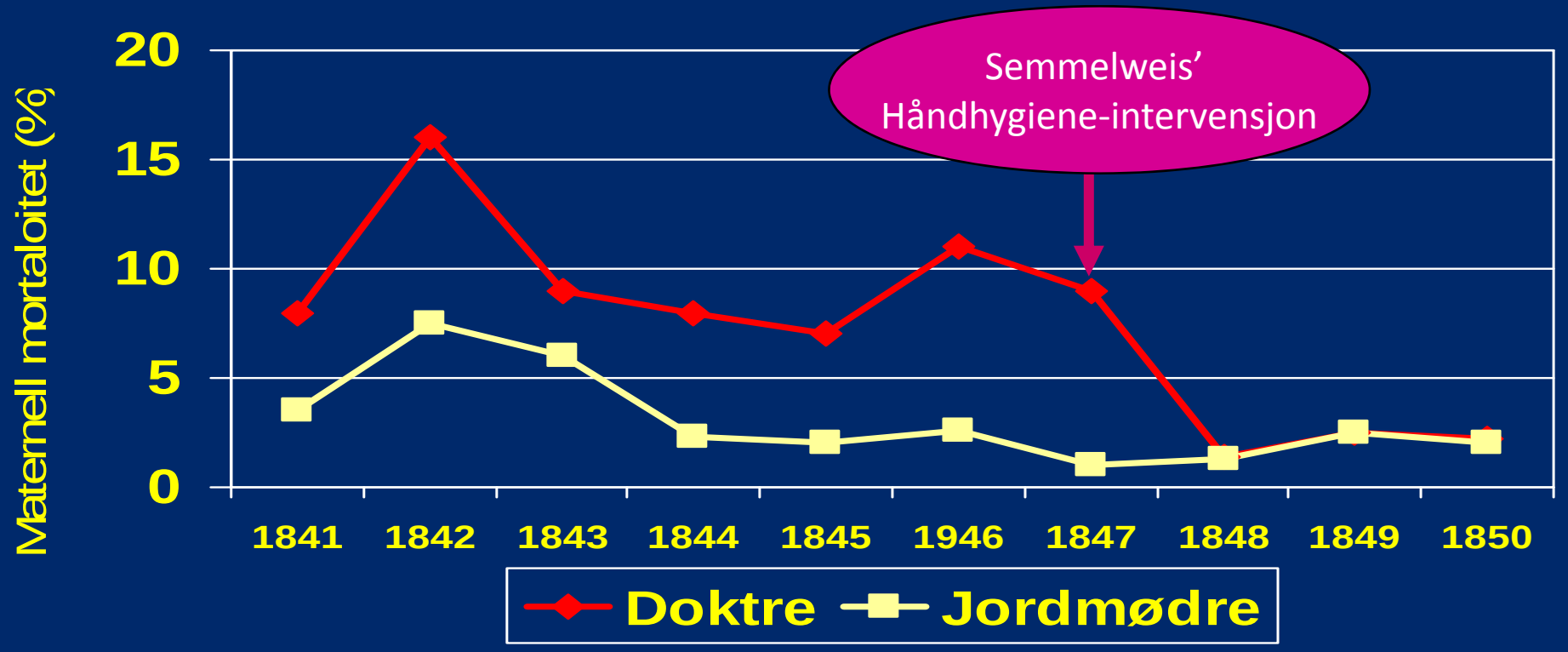
Avdeling for smittevern

Oslo universitetssykehus

Norge

Håndhygiene: Ikke noe nytt begrep

Maternell mortalitet av barselfeber ved
Allgemeine Krankenhaus, Wien, Østerike



Adapted from: Hosp Epidemiol Infect Control, 2nd Edition, 1999 (CDC)

Semmelweis’ data er
170 år gamle
Ikke relevante i 2017

A Causal Link Between Handwashing and Risk of Infection? Examination of the Evidence

Elaine Larson, PhD, FAAN

ABSTRACT

To examine evidence of a causal link between handwashing and risk of infection, a review of published literature from 1879 through 1986 was conducted. In the 107 years studied, 423 articles specifically related to handwashing were found. Articles were categorized as studies to evaluate products (50.8%), review articles (29.1%), behavioral studies (10.9%), methodologic studies (2.8%), studies linking handwashing to infection (3.3%), and other (3.1%). There was an increase in the proportion of handwashing articles published in the 1980s with the rate (9.4/10^5 citations/year) being almost double that of any other period studied. Nonexperimental and experimental studies related to handwashing were reviewed and evidence for a causal association evaluated. Except for specificity, all the elements for causality, including temporality, strength, plausibility, consistency of the association, and dose response were present. It was therefore concluded that emphasis on handwashing as a primary infection control measure has not been misplaced and should continue. [Infect Control Hosp Epidemiol 1988; 9(1):28-36.]

proposed for the discrepancy between recommended and practiced handwashing behavior include busy schedules in which emergent needs take higher priority, inconvenient or inadequate handwashing facilities, and lack of education about skin antisepsis in health care curricula. However, intervention trials initiated to increase handwashing by resolving some of these proposed barriers have been generally ineffective.[11-13]

A more basic reason for the casual attitude about handwashing might be that health care personnel question the effectiveness of handwashing reducing risk of infection for patients contacted or for themselves. This attitude may be particularly true within the current health care setting because nosocomial infections are relatively rare events and are clearly precipitated by a multitude of interacting factors. Thus, it is difficult to identify the specific effect of an isolated factor such as handwashing. If handwashing is, as is generally taught, causally related to risk of infection, a review of evidence might serve to enhance motivation of patient care providers to practice the procedure with renewed vigor. If, on the other hand, the evidence linking handwashing to infection could be explained by

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State-of-the-science—2004: Time for a "No Excuses/No Tolerance" (NET) strategy

Elaine Larson, PhD, RN, FAAN, CIC
New York, New York

Backman C et al. ICHE 2008;36:333-48

†Rating:

1. An unblinded intervention or prospective study with 1 or more major flaws sufficient to weaken confidence in the study's conclusions (eg, study insufficiently powered to draw conclusions, HAI infection not clearly defined, no statistical analysis, no baseline or comparison data).
2. A study with at least 1 flaw identified but not deemed to be a "fatal" flaw.
3. An intervention or prospective observational study with no major identified flaws unaccounted for by the investigators.
4. A blinded, randomized clinical trial with no major identified flaws.

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REVIEW

Handwashing in the intensive care unit: a big measure with modest effects

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Silvestri L. JHI 2005;59:172

Summary Handwashing is widely accepted as the cornerstone of infection control in the intensive care unit. Nosocomial infections are frequently viewed as an indicator of poor compliance of handwashing. The aim of this review is to evaluate the effectiveness of handwashing on infection rates in the intensive care unit, and to analyse the failure of handwashing. A literature search identified nine studies that evaluated the impact of handwashing or hand hygiene on infection rates, and demonstrated a low level of evidence for the efforts to control infection with handwashing. Poor compliance cannot be blamed as the only reason for the failure of handwashing to control infection. Handwashing on its own does not abolish, but only reduces transmission, as it is dependent on the bacterial load on the hand of healthcare workers. Finally, recent studies, using surveillance cultures of throat and rectum, have shown that, under ideal circumstances, handwashing can only influence 40% of all intensive care unit infections. A randomised clinical trial with the intensive care as randomisation unit is required to support handwashing as the cornerstone of infection control.

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Summary Handwashing is widely accepted as the cornerstone of infection control in the intensive care unit. Nosocomial infections are frequently viewed as an indicator of poor compliance of handwashing. The aim of this review is to evaluate the effectiveness of handwashing on infection rates in the intensive care unit, and to analyse the failure of handwashing. A literature search identified nine studies that evaluated the impact of handwashing or hand hygiene on infection rates, and demonstrated a low level of evidence for the efforts to control infection with handwashing. Poor compliance cannot be blamed as the only reason for the failure of handwashing to control infection. Handwashing on its own does not abolish, but only reduces transmission, as it is dependent on the bacterial load on the hand of healthcare workers. Finally, recent studies, using surveillance cultures of throat and rectum, have shown that, under ideal circumstances, handwashing can only influence 40% of all intensive care unit infections. A randomised clinical trial with the intensive care as randomisation unit is required to support handwashing as the cornerstone of infection control.

Silvestri L. JHI 2005;59:172

An integrative review of the current evidence on the relationship between hand hygiene interventions and the incidence of health care–associated infections

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Backman C et al. ICHE 2008;36:333-48

Table 3. Fatal flaws of quasiexperimental and before and after studies[10]

Rating scheme

1. Unblinded intervention or prospective study with 1 or more of the fatal flaws sufficient to weaken confidence in study's conclusions
2. Unblinded intervention or prospective study with 1 or more other flaw, but none is fatal to negate the conclusions
3. Intervention or prospective observational study with no fatal or other flaws not accounted for by study authors
4. Blinded RCT with no fatal or other flaws

Fatal flaws

I. Inadequate sample size
II. Uncontrolled bias or confounding (eg, no evidence of interrater reliability, unclear participant inclusion criteria, data collection unblinded)
III. Unclear operational definitions or description of intervention
IV. Inadequate (or no) statistical analysis
V. Lack of evidence that intervention was actually implemented

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1120 artikler identifisert

- 35 artikler tilfredsstilte inklusjonskriteriene (inkl. 4 reviews)
  - De resterende 31 artiklene var:
  - 18 (58 %) før/etter studier uten konttollgrupper
  - 4 (13 %) før/ettter studier med kontrollgrupper
  - 3 (10 %) kohortstudier uten kontrollgrupper
  - 4 (13 %) kohortstudier med kontrollgrupper
  - 2 (6 %) randomiserte studier

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Konklusjoner

- Det mangler evidens som knytter spesifikke håndhygieneintervensjoner til forebygging av HAI
- Ulikheter i intervensjonene og divrse faktorer som påvirker oppståelsen av HAI gjør det vanskelig å dokumentere effekten av håndhygiene alene.
- De vanligste metodene som er brukt er før/etter studier uten kontrollgruppe eller sammenligningsgruppe

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Primary author (date)	Design	Intervention	Findings	Scoring tool[10] Score	Fatal flaws	Comments
Category 1. Multimodal hand hygiene initiatives						
Pittet (2000)[14]	Before and after (no control group)	Multimodal	Significant reduction ($P = .04$) 7% decrease in overall nosocomial infection Significant reduction ($P < .001$) 0.01% decrease in MRSA transmission rates	I	II	Uncontrolled bias or confounding factor (reduction in infection rates and MRSA transmission possibly confounded by multiple interventions) Other flaws: Observational bias/possibility of Hawthorne effect

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Primary author (date)	Design	Intervention	Findings	Scoring tool[10]		Comments
				Score	Fatal flaws	
Lam (2004)[15]	Before and after (no control group)	Multimodal	No significant reduction ($P = .14$) 0.51% decrease in HCAI rate	2		Possibility that HCWs behavior changed because they were being observed

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Primary author (date)	Design	Intervention	Findings	Scoring tool[10]		Comments
				Score	Fatal flaws	
Hilburn (2003)[19]	Before and after (no control group)	Multimodal	36.1% decrease in infection rates	3		No hand hygiene compliance data provided

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Primary author (date)	Design	Intervention	Findings	Scoring tool[10] Score	Fatal flaws	Comments
Johnson (2005)[20]	Cohort study (no control group)	Multimodal	Significant reduction ($P = .01$) 57% decrease in MRSA bacteremia	I	II	Uncontrolled bias or confounding factor (data collection unblinded) Other flaws: Difficult to determine the merits of each intervention (simultaneous interventions) Reliance on historical controls/possibility of Hawthorne effect Possible that change in MRSA bacteremias were because of natural variability over time Only percentage reductions in MRSA bacteremia and ESBL were provided (and no absolute reductions)

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World Health Organization | Patient Safety
A World Alliance for Safer Health Care

WHO Guidelines on Hand Hygiene in Health Care: a Summary

First Global Patient Safety Challenge
Clean Care is Safer Care

Table I.2.3

Association between improved adherence with hand hygiene practice and health care-associated infection rates (1975– June 2008)

Year	Authors	Hospital setting	Major results	Duration of follow-up
1977	Casewell & Phillips[66]	Adult ICU	Significant reduction in the percentage of patients colonized or infected by Klebsiella spp.	2 years
1989	Conly et al.[81]	Adult ICU	Significant reduction in HCAI rates immediately after hand hygiene promotion (from 33% to 12% and from 33% to 10%, after two intervention periods 4 years apart, respectively)	6 years
1990	Simmons et al.[117]	Adult ICU	No impact on HCAI rates (no statistically significant improvement of hand hygiene adherence)	11 months
1992	Doebbeling et al.[118]	Adult ICUs	Significant difference between rates of HCAI using two different hand hygiene agents	8 months
1994	Webster et al.[74]	NICU	Elimination of MRSA when combined with multiple other infection control measures. Reduction of vancomycin use. Significant reduction of nosocomial bacteremia (from 2.6% to 1.1%) using triclosan compared to chlorhexidine for handwashing	9 months
1995	Zafar et al.[57]	Newborn nursery	Control of a MRSA outbreak using a triclosan preparation for handwashing, in addition to other infection control measures	3.5 years
2000	Larson et al.[119]	MICU/NICU	Significant (85%) relative reduction of the vancomycin-resistant enterococci (VRE) rate in the intervention hospital; statistically insignificant (44%) relative reduction in control hospital; no significant change in MRSA	8 months
2000	Pittet et al.[75,120]	Hospital-wide	Significant reduction in the annual overall prevalence of HCAI (42%) and MRSA cross-transmission rates (87%). Active surveillance cultures and contact precautions were implemented during same time period. A follow-up study showed continuous increase in handrub use, stable HCAI rates and cost savings derived from the strategy.	8 years
2003	Hilburn et al.[121]	Orthopaedic surgical unit	36% decrease of urinary tract infection and SSI rates (from 8.2% to 5.3%)	10 months
2004	MacDonald et al.[77]	Hospital-wide	Significant reduction in hospital-acquired MRSA cases (from 1.9% to 0.9%)	1 year
2004	Swoboda et al.[122]	Adult intermediate care unit	Reduction in HCAI rates (not statistically significant)	2.5 months
2004	Lam et al.[123]	NICU	Reduction (not statistically significant) in HCAI rates (from 11.3/1000 patient-days to 6.2/1000 patient-days)	6 months
2004	Won et al.[124]	NICU	Significant reduction in HCAI rates (from 15.1/1000 patient-days to 10.7/1000 patient-days), in particular of respiratory infections	2 years

Year	Authors	Hospital setting	Major results	Duration of follow-up
2005	Zerr et al.[125]	Hospital-wide	Significant reduction in hospital-associated rotavirus infections	4 years
2005	Rosenthal et al.[126]	Adult ICUs	Significant reduction in HCAI rates (from 47.5/1000 patient-days to 27.9/1000 patient-days)	21 months
2005	Johnson et al.[127]	Hospital-wide	Significant reduction (57%) in MRSA bacteraemia	36 months
2007	Thi Anh Thu et al.[128]	Neurosurgery	Reduction (54%, NS) of overall incidence of SSI. Significant reduction (100%) of superficial SSI; significantly lower SSI incidence in intervention ward compared with control ward	2 years
2007	Pessoa-Silva et al.[111]	Neonatal unit	Reduction of overall HCAI rates (from 11 to 8.2 infections per 1000 patient-days) and 60% decrease of risk of HCAI in very low birth weight neonates (from 15.5 to 8.8 episodes/1000 patient-days)	27 months
2008	Rupp et al.[112]	ICU	No impact on device-associated infection and infections due to multidrug-resistant pathogens	2 years
2008	Grayson et al.[129]	1) 6 pilot hospitals	1) Significant reduction of MRSA bacteraemia (from 0.05/100 patient-discharges to 0.02/100 patient-discharges per month) and of clinical MRSA isolates	1) 2 years
		2) all public hospitals in Victoria (Australia)	2) Significant reduction of MRSA bacteraemia (from 0.03/100 patient-discharges to 0.01/100 patient-discharges per month) and of clinical MRSA isolates	2) 1 year

Hvor stor andel av HAI har eksogen opprinnelse?

Postoperative sårinfeksjoner?

Blodbaneinfeksjoner?

Nedre luftveisinfeksjoner?

Urinveisinfeksjoner?

Postoperative sårinfeksjoner

- De fleste infeksjonene oppstår på operasjonsstuen og har endogen opprinnelse
- Selv kirurgisk håndhygiene har ikke overbevisende dokumentasjon

Nedre luftveisinfeksjoner

- De fleste infeksjonene oppstår som følge av intubering/respiratorbehandling og har endogen opprinnelse
- Smitteforebyggende tiltak er først og fremt anlagt for å hindre aspirasjon

Blodbaneinfeksjoner

- De fleste infeksjonene oppstår som følge av bruk av intravaskulære katetre og har endogen opprinnelse
- Smitteforebyggende tiltak er først og fremt knyttet til innstikkstedet og til- og frakoplinger. Hvor mye håndhygiene betyr er ikke klarlagt.

Urinveisinfeksjoner

- De fleste infeksjonene oppstår som følge av kateterbruk og har endogen opprinnelse

Konklusjon:

Kanskje vi bruker alt for mye ressurser på et forbedringstiltak

som har liten effekt?