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Alternative strategies for improving nurses' hand hygiene: results from a cluster-randomised trial

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Problem

- Annually 100,000 HAI in the Netherlands
- Prevalence rate of 6.9% in hospital wards
- One thousand cases of excess mortality per year
- Estimated costs €400 million annually
- Improved hand hygiene can avoid 15,000-30,000 HAIs each year

Literature: van Benthem e.a., 2008, Groeneveld, 2007, Erasmus 2010

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Simple and effective solution

- Hand hygiene is the most important measure to reduce nosocomial infections *(Pittet 2004)*
- 'The treatment effect is so great that if hand hygiene were a new drug it would be used by all'*(Stone 2001)*

- In the Netherlands, hand hygiene is performed in 19.5% of the relevant opportunities

But not that simple at all!

- Innovations do not implement themselves
- Specific programs are required to implement innovations
- Implementation activities require a systematic approach and good planning

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Given all that you've learned, how would you proceed?

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Barriers in the implementation of hand hygiene

Cognitions	Seldom see complications Lack of hard evidence	61% 43%
Attitude & motivation	Irritation of the hands Costs time	81% 50%
Routines	Forgetting	65%
Social	Nobody controls Management not interested	50% 45%
Organizational	Not feasible in work No hospital guideline	61% 49%
Resources	No facilities	42%

(Grol & Grimshaw, Lancet 2003)

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Effectiveness of strategies to promote hand hygiene

	Strategy	# Stud	Pos effects	Overal effects	Level of ev.
+	**Education:** knowledge & skills	7	2	-	1b
+	**Reminders:** posters, stickers..	3	1	-	2b
+	**Performance feedback**	7	3*	+	1b
+	**Improved products:** soaps etc	5	2*	+	2b
+	**Improved facilities:** sinks etc	3	2	+	4
?	**Patient involvement**	1	1	+	2b
+	**Social influence:** norm setting..	1	1	+	1b
+	**Multiple strategies:** 1 thru 5	12	9	+	1b
		33	21		

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Where would improvement be possible?

Develop an implementation strategy and research design

Work in groups of 3

You have 15 minutes

Missing link

Barriers at team level not addressed!

- Social norm is lacking
- Social support and ‘model behavior’ is lacking
- Ward management is not interested in HH
- Insight into team performance is lacking

Theories about changing group behavior

- Social learning theory (Bandura 1986)
  - Example behavior and reinforcement of correct behavior
- Social influence theory (Mittman 1992)
  - Social norm in a network determines what correct behavior is
- Theory on team effectiveness (West 1990; Shortell 2004)
  - Orientation on team climate and willingness to change
- Theory of leadership (Ovretveit 2004)
  - Orientation on team climate and willingness to change

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BACKGROUND – implementation strategies commonly focus on individual professionals whereas nurses often work in teams

AIM – to study the effectiveness of "state of the art campains" and to evaluate the added value of a social influence strategy

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HELPING HANDS
state of the art campaign

a) education for improving relevant knowledge and skills

b) reminders for supporting the transfer from intention to behavior

c) feedback to provide insight into current behavior and to reinforce improved behavior

d) adequate products

e) adequate facilities

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HELPING HANDS – extended strategy

All of the above +

f) gaining active commitment and initiative of ward management

g) modeling by informal leaders at the ward and

h) setting norms and targets within the team.

(Bandura 1986, Mittman et al. 1992, Ovretveit 2004, Larson et al. 2000)

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HELPING HANDS - state of the art campaign: “Gewoon handen schoon”

Hospital wide campaign on hand hygiene

- Hand hygiene promotion meeting
- Leaflets (HH indications, instruction)
- Adequate products and facilities
- Website, including HH quiz
- Posters (awareness)
- Performance feedback

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HELPING HANDS – extended strategy: Improving team performance -1

Norm setting and goal setting regarding HH

- Three interactive team sessions
- Analysis of barriers and facilitators
- Nurses address each other's HH behavior

HELPING HANDS – extended strategy: Improving team performance -2

Modeling by informal leaders at the ward

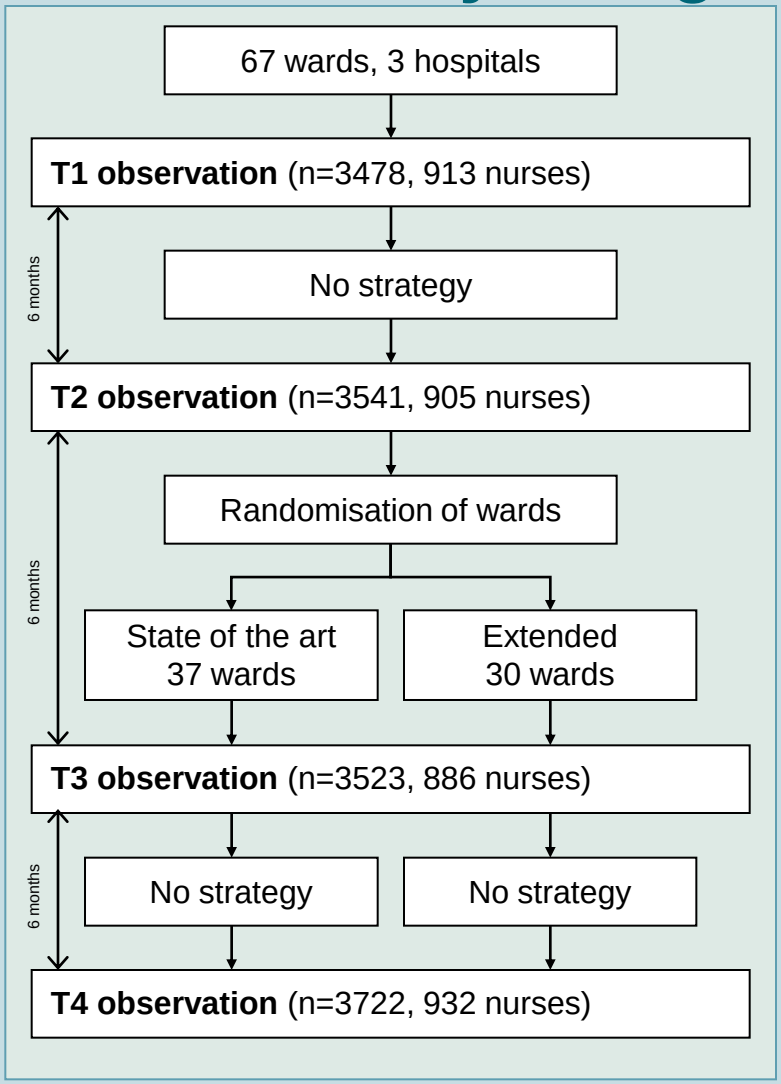
- Informal leaders demonstrate good hand hygiene behavior
- Informal leaders model social skills in addressing behavior of colleagues
- Informal leaders instruct and stimulate their colleagues in providing good hand hygiene behavior

HELPING HANDS – extended strategy: Improving team performance -3

Gaining active commitment of ward manager

- Ward manager designates HH as a priority
- Ward manager actively supports team members and informal leaders
- Ward manager discusses hand hygiene compliance rates with team members

HELPING HANDS – study design



Cluster randomised controlled trial

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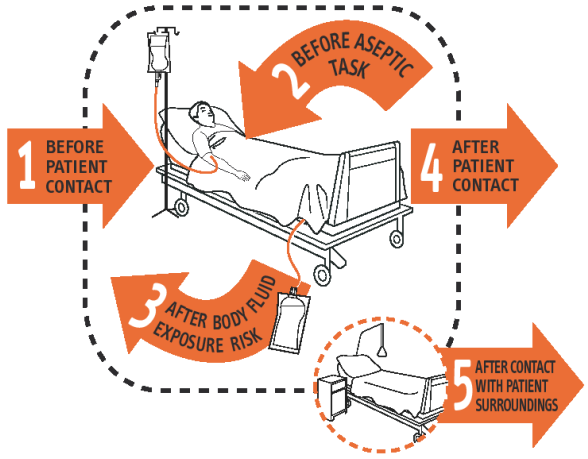
Your 5 moments for HAND HYGIENE



1	BEFORE PATIENT CONTACT	WHEN? Clean your hands before touching a patient when approaching him or her WHY? To protect the patient against harmful germs carried on your hands
2	BEFORE AN ASEPTIC TASK	WHEN? Clean your hands immediately before any aseptic task WHY? To protect the patient against harmful germs, including the patient's own germs, entering his or her body
3	AFTER BODY FLUID EXPOSURE RISK	WHEN? Clean your hands immediately after an exposure risk to body fluids (and after glove removal) WHY? To protect yourself and the health-care environment from harmful patient germs
4	AFTER PATIENT CONTACT	WHEN? Clean your hands after touching a patient and his or her immediate surroundings when leaving WHY? To protect yourself and the health-care environment from harmful patient germs
5	AFTER CONTACT WITH PATIENT SURROUNDINGS	WHEN? Clean your hands after touching any object or furniture in the patient's immediate surroundings, when leaving - even without touching the patient WHY? To protect yourself and the health-care environment from harmful patient germs

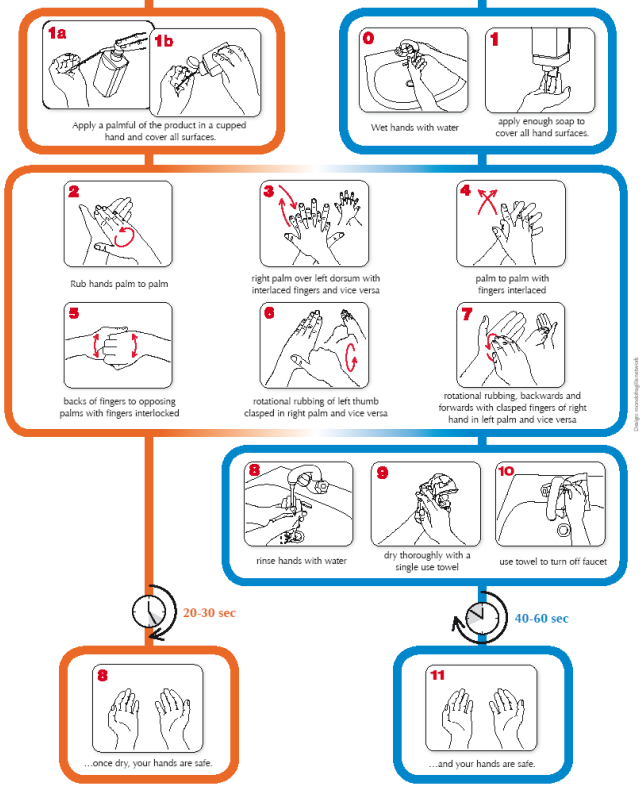
WORLD ALLIANCE FOR PATIENT SAFETY

WHO acknowledges the Hôpitaux Universitaires de Genève (HUG), in particular the members of the Infection Control Programme, for their active participation in developing this material.

World Health Organization

October 2006, version 1.

How to handrub?
WITH ALCOHOL-BASED FORMULATION



How to handwash?
WITH SOAP AND WATER

WORLD ALLIANCE FOR PATIENT SAFETY

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HELPING HANDS – study design

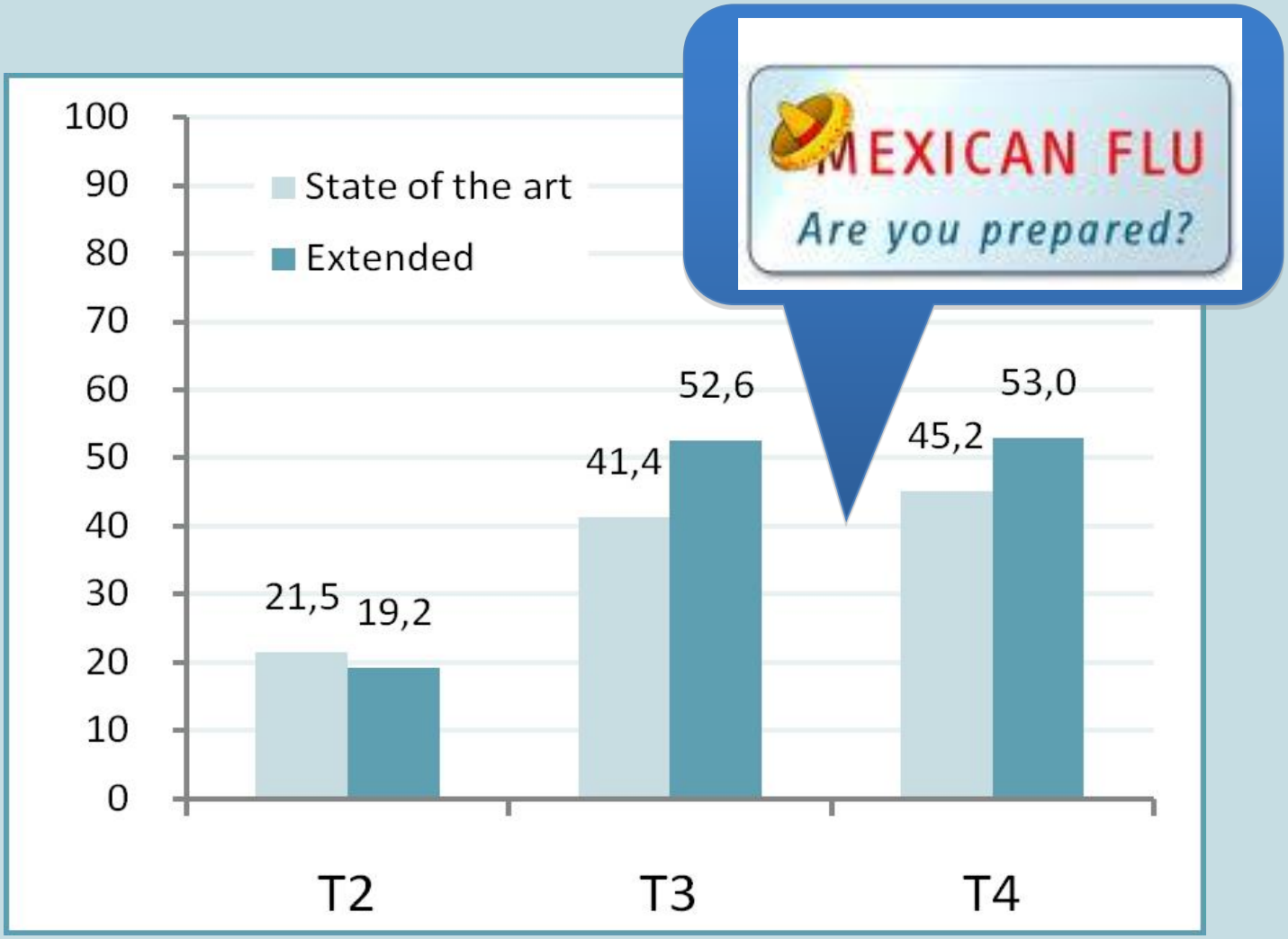
Primary outcome

- The percentage of hand hygiene opportunities in which nurses acted in line with hand hygiene guidelines

Methods

- **Unobtrusive observations** of HH at all wards of three hospitals

HELPING HANDS – results



HELPING HANDS – results -2

- Odds Ratio of 1.64 (confidence interval [1.33; 2.02] and $p<0.001$) in favour of the team-directed strategy

- The difference in improvement between the team-directed strategy and the state of the art strategy was statistically significant

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HELPING HANDS – CONCLUSION

- Both the state of the art strategy and the team-directed strategy are effective, but the team-directed strategy showed even better results

- The methodology of this team directed strategy can also be used to improve team performance on other patient safety issues

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