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QI or Implementation science?

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Hand Hygiene

- Population: nurses working on inpatient units in 3 hospitals in Netherlands
- Intervention: team and leaders-directed strategy that was theory based
- Comparison: 'state of the art' approach based on evidence on hand hygiene compliance
- Outcomes: Primary outcome = percentages of nurses' actions in line with HH guidelines
 - Secondary outcomes = presence of jewellery, wearing of long-sleeves, compliance with specific HH opportunity
- Study design: cluster RCT
 - Int J Nurs Studies 2013;50:464-74.



Strategies

- Team and leaders-directed
 - Used theory + evidence
- State of the art
 - Used evidence, targeted to barriers/facilitators



Table 2**Selected behaviour change theories matching barriers in performing HH**

Theory	Focus	Key elements
Social learning theory [26]	Behaviour is learned from the environment through the process of observational learning.	<ul style="list-style-type: none">- Demonstration, role modelling.- Encompasses attention, memory, and motivation.
Social influence theory [27]	Social norm in a network determines what correct behaviour is.	<ul style="list-style-type: none">- Norm and target setting.- Commitment team members.- Use of opinion leaders.- Performance feedback.- Team members address each other in case of undesirable behaviour.
Theory on team effectiveness [28,29]	Orientation on team climate and willingness to change	<ul style="list-style-type: none">- Team Vision: clarity, perceived value, and attainability.- Participation Safety: decision-making, information sharing, interaction and safety.- Support for Innovation: articulated and enhanced support.- Task Orientation: commitment to excellence, appraisal and task orientation.
Theories of leadership [30]	Leading, coaching and managing a team	<ul style="list-style-type: none">- Active commitment/participation in performance improvement initiatives.- Setting norms and targets/direction/expectations.- Encouragement and support/motivate staff.- Monitoring performance and feedback.

Huis *et al.*

Huis *et al.* *Implementation Science* 2013 **8**:41 doi:10.1186/1748-5908-8-41

OPEN DATA

Table 3

Description of the implementation strategies with the planned activities

State-of-the-art strategy**Education**

Distribution of educational material/ written information (leaflet) about HH that contained:

- The importance of HH
- Misconceptions about alcohol-based HH disinfection
- Theory and practical indications for the use of HH

Website <http://www.gewoonhandenschoon.nl> website

- Educational material/ written information about HH
- Knowledge quiz with feedback. Visitors could test their knowledge about HH
- The nursing ward with the highest number of visitors to the website was rewarded

Educational sessions on prevention of hospital acquired infections

- Launching hospital-wide campaign with practical demonstrations of HH

Reminders**Team and leaders-directed strategy****All elements of the state-of-the-art strategy**

- Education, reminders, feedback, facilities and products, see above

Setting norms and targets within the team

- Three interactive team sessions (1 h-1.5 h each) that included goal setting in HH performance at group level. Team sessions were guided by the team manager and a external coach.

- Exploring nurses' knowledge and perception of current HH behaviour (individual- and team level) and discussing actual HH compliance rates

- Transition from individual responsibility to a shared team responsibility

- Creating a participatory and non-threatening climate for team interaction

- Commitment to high standards of HH performance

- Defining and documenting improvement activities

- Analysis of barriers and facilitators to determine how nurses could best adapt their behaviour in order to reach their goal.

- Nurses address each other in case of undesirable HH behaviour

Gaining active commitment and initiative of ward management

Results

- 67 wards:
 - 30 team-leaders strategy (10 declined to participate; ITT analysis)
 - 37 state of the art strategy
- ITT analysis showed no difference in primary outcome between 2 interventions at 6 months
 - 23% to 46% for state of the art strategy
 - 20% to 53% for team-leaders strategy
- On treatment analysis showed significant difference
 - 22% to 44% for state of the art strategy
 - 21% to 60% for team-leaders strategy



Results

- Cost effectiveness analysis
 - Showing team-leaders strategy cost effective
 - Int J Nurs Studies 2013;50:518-26.



Process Evaluation

- Done alongside RCT to look inside the ‘black box’ of the interventions using:
 - Effects on HH compliance
 - Adherence to improvement strategies
 - Contextual factors
 - Nurses’ experiences with strategy components
- Impl Sci 2013;8:41



Results

- Both strategies were performed with good adherence to the protocol
- 2 contextual factors were associated with changes in HH compliance:
 - Hospital effect – associated with long-term effect
 - High HH baseline compliance scores were associated with smaller effects
- In follow-up, several items of social influence and leadership were correlated positively with changes in HH compliance



Table 1

Summary of issues that influence the likelihood of rejection without review of articles submitted to *Implementation Science*

Issue	Likely to be accepted	Likely to be rejected
Potential significance	Work contextualised within existing implementation research literature	Work not contextualised within existing implementation research literature
	Contribution to implementation research articulated and potentially significant	Contribution to implementation research not articulated or relatively minor
Field of interest	Healthcare and population health	Anything else
Effectiveness studies	Evaluating the effectiveness of implementation of an evidence-based practice or policy, or de-implementation of those demonstrated to be relatively ineffective or even harmful	Evaluating the effectiveness of a clinical, organisational, public health or policy intervention
Outcome	Health or health-related	Anything else
Implementation	Researching implementation	Doing implementation
Validity	Maximises internal and external validity as appropriate in the chosen study designs	
Patient decision aids	Evaluations of the implementation of patient decision aids (of known effectiveness) into healthcare settings; involvement of healthcare providers	Initial development, pilot testing or evaluation of patient decision aids
Implementation direct to patients	Outcomes referring to evidence-based practice with some involvement of healthcare providers	Other types of outcomes
Intervention development reports	Prepared and submitted prior to the reporting of the effectiveness of the intervention	<i>Post hoc</i> submission
	Going to be, (robustly) evaluated	Not going to be (robustly) evaluated
	Providing empirical and/or theoretical rationale	
Process evaluation	Submitted contemporaneously with or following report of intervention effectiveness	Process evaluations submitted in advance of the conduct of the main effectiveness analysis (it cannot be clear if they are explaining an effect or the absence of an effect)
	Process evaluations that take account of the main evaluation outcomes	Process evaluations that do not take account of the main evaluation outcomes
Pilot studies	If appropriate criteria for conduct	No justification for conduct
	If appropriate degree of inference	Overclaim on basis of results
	If there are plans for further evaluation	
Protocols	Been through peer review by a nationally recognised research agency as part of their funding	Not been through peer review by a nationally recognised research agency as part of their funding
	Received ethics review board approval	Not received ethics review board approval
	Submitted prior to data cleaning or analysis	Have begun data cleaning or analysis (may not apply to some qualitative studies)

Foy *et al.*

Foy *et al.* *Implementation Science* 2015 **10**:51 doi:10.1186/s13012-015-0240-2