CONTENT AND GUIDELINES FOR FEEDBACK HAND-HYGIENE INTERVENTION

- Immediate Personalised Feedback and Individualised Action Planning)

1.Content

The intervention consists of a repeating four-week cycle (20 minutes/week) of observation and immediate personalized feedback coupled to individualized action-planning and goal-setting. It is carried out by a designated trained ward manager or deputy (eg junior sister). Training two people ensures cover for sickness, vacations and off duty.

Link nurses could also deliver the intervention but our research into barriers and facilitators for implementation suggested that the intervention should be delivered by someone for whom the tasks were commensurate with their existing professional roles. Staff without an existing feedback, appraisal or educational role lacked the authority to deliver the intervention.

Week 1: Covert hand-hygiene observation of an individual nurse for 20 minutes. Immediate feedback given after observation. For instances of non-compliance with hand-hygiene, the nurse is helped to formulate an action plan to improve behaviour and set a future compliance goal. For example, if nurses don't clean hands after touching a patient, the action might be set as ''*After every patient contact, I will use alcohol hand-rub''*.

If compliance is 100%, they receive a certificate for their annual professional development appraisal portfolio but apart from that the intervention was not part of the annual appraisal process.

*Week 2***:** As for week one except that a doctor or other healthcare professional is observed.

*Week 3***:** Covert hand-hygiene observation of a ward area for 20 minutes, recording hand-hygiene behaviour of all healthcare workers entering that area (group compliance). No feedback is given.

Week 4: The week 3 observations (group compliance) are fed back and action plans and future goals formulated at a ward meeting. For example, when student nurse practice is observed to be poor, the following action plan might be set: *''All student nurse assessors to take student nurses through hand-hygiene practice on arrival on ward''*.

Observations, feedback, goal setting and action planning is documented on a specially designed form (see training materials),

2. Guidelines for giving effective feedback

- Explain why the staff member has been selected for observation.
- State that the feedback is confidential. Ensure others cannot hear what is said.
- Give feedback on the behaviour **not** the person, explaining the rationale for cleaning hands in situations where they had not done so.
- Describe **all** observed opportunities for hand-hygiene and their associated behaviour

- Praise good hand-hygiene verbally with simple reinforcing comments 'that's great', 'excellent', or 'good stuff',
- Describe non-compliant situations as "target improvement areas".
- Give reward (Named Certificate) for full compliance (arranged by giving person's name to infection control team

3. Guidelines for formulating action plans.

- Plans need to be tailored to the needs of the specific individual.
- Look for patterns of behaviours or specific problems (*"Is the staff member doing anything that is making it more difficult for him/her to clean their hands?" "Are any particular situations or activities problematic?)*
- Ask for reasons why hands were not cleaned. Record their answer.
- Develop a plan that is: Specific (Relates to the patterns of and reasons for non-compliance) and Concrete (Measurable behavioural actions) eg *"I **will** clean my hands with AHR **before** putting on gloves"*
- Do not use THINKING plans eg *"I'll try to remember to clean my hands next time"*
- Agree, do not impose, the plan

Detailed instructions and data entry forms for hand-hygiene observation, feedback and action planning are available in the training materials

4. Monitoring delivery of the intervention according to protocol

Although the application gives ICNs the role (page 3 first paragraph) of monitoring each ward manager's delivery of the intervention this could be done by another senior member of staff such as a matron or senior manager provided they have been appropriately trained.

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FIT Individual observation and feedback form (confidential)

Initials of person observed: Date and time of observation:
Grade + job role (of observed): Duration of observation + feedback (mins):
Were observations carried out whilst undertaking other duties?: Y/N

Describe observed activity AND state if hand-hygiene opportunity is before or after patient contact *or* after environmental contact	HANDS CLEANED? AH = alcohol handrub SOAP = soap + water	Describe observed activity AND state if hand-hygiene opportunity is before or after patient contact *or* after environmental contact	HANDS CLEANED? AH = alcohol handrub SOAP = soap + water
1.	YES / NO AH / SOAP	6.	YES / NO AH / SOAP
2.	YES / NO AH / SOAP	7.	YES / NO AH / SOAP
3.	YES / NO AH / SOAP	8.	YES / NO AH / SOAP
4.	YES / NO AH / SOAP	9.	YES / NO AH / SOAP
5.	YES / NO AH / SOAP	10.	YES / NO AH / SOAP

Was hand hygiene compliance 100%? **YES**. Give the person observed a certificate of good practice. **NO**. Go to section 3. (If more than two non-compliances go to section 3, then file for repeat observation next month.)

1. State all opportunities and behaviours (as recorded on the observation form and praise compliance.

2. Note patterns in non-compliances (if none, state none): (e.g. all occurring in relation to glove use)
_____
_____
_____

3. Ask staff member why they did not clean their hands? **Note**.
_____
_____
_____

4. Ask staff member for suggestions for changing their behaviour to improve compliance in target areas. **Note**
_____
_____
_____

5. Agreed plan/s:
_____
_____
_____
_____

6. Reobserve next month? Yes ☐ No ☐

Observer's name:……..Observer's job title: ……..Observer's Grade:……...

Group observation and feedback form (confidential)

Date and time of observation:
Grade + job role of observer:
Duration of observation (mins):
Were observations carried out whilst undertaking other duties?: Y/N

Describe observed activity AND state if hand-hygiene opportunity is before or after patient contact *or* after environmental contact	HANDS CLEANED? AH = alcohol handrub SOAP = soap + water	Describe observed activity AND state if hand-hygiene opportunity is before or after patient contact *or* after environmental contact	HANDS CLEANED? AH = alcohol handrub SOAP = soap + water
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5.	YES / NO AH / SOAP	10.	YES / NO AH / SOAP

Overall hand-hygiene compliance = _____%

Hand-hygiene behaviour
---------- x 100 = Overall hand-hygiene behaviour
Total opportunities

NOTE ANY PATTERNS / PROBLEMS:
_____
_____
_____
_____
_____
_____
_____
_____
_____

Observer's signature:……

Please retain a copy of this form for your own files and return a copy to your infection control team

Feedback Intervention Trial Protocol

TITLE: The Feedback Intervention Trial (FIT): a stepped wedge cluster randomised controlled trial of the effect of a feedback intervention on hand hygiene compliance in healthcare workers on intensive therapy units (ITUs) and Acute Care of the Elderly/General medical (ACE/GM) wards.

Hypothesis: The null hypothesis was that the feedback intervention would have no effect on hand hygiene compliance compared to standard practice, which included routine use of the pragmatically designed national clean***your***hands campaign (1).

Design**:** stepped wedge cluster randomised controlled trial

Participants**:** 16 trusts in England and Wales with at least 1 ITU and 2 ACE/GM wards per trust.

Eligibility criteria: the ward managers and Infection control nurses will have agreed to the trial, appointed a ward co-ordinator and given consent (05/MREC10/2, Scotland B, multi-centre research ethics committee). The hospital and wards will have implemented the cleanyourhands campaign as part of routine hand hygiene practice, and will not adopt any other hand hygiene interventions during the time of the trial. Hospitals will have at least one ICN per 300 beds. Of the 16 hospitals, 2 or 3 should be teaching hospitals to provide a representative mixture of hospitals in England and Wales.

Intervention: based on goal setting and control theories, the intervention consists of a repeated four week audit cycle of observation of individual HCWs and groups of HCWs using the behaviour change techniques of observation, feedback, agreement of goal setting and action plans, and reward. Intervention will be implemented by a ward co-ordinator, either a ward

manager or sister, an infection control link nurse, or an infection control nurse, and will be delivered in the manner described in the training materials developed for the trial (www.idrn.org/nosec.php).

In week one an individual nurse will be observed for 20 minutes, using a standard methodology, the hand hygiene observation tool) (www.idrn/nosec.php) developed by the research team and based on the Geneva tool for observing hand hygiene compliance (2). Any lapses in compliance will be feedback immediately to the nurse or health care assistant, and a discussion will help them agree on goals and action plans to improve their compliance in future. If their compliance is 100% they will receive a certificate to be placed in the CPD folders. If there are more than two instances of poor compliance, they will be reassessed on a subsequent occasion.

In week 2: a non nurse (doctor or physiotherapist for example) will be observed in the same way.

In week three: a group of HCWs will be observed and their compliance and any lapses noted. Pbservations will be documented on the form designed for this purpose. Feedback however will not be given at that point.

In week 4: ward co-coordinators will feedback group compliance to the ward team e.g. at the monthly team meeting) and agree goals and action plans. The observations, feedback, goals and action plans will be recorded as described above on a specific form.

All forms from weeks 1, 2, 3 and 4 will be returned to the research team and the number filled in per month will act as a proxy measure of fidelity to intervention

Randomisation: A stepped wedge computer generated randomisation of hospitals into the intervention ensure entry of four hospitals at a time into the intervention at four predetermined intervals four months apart, after an initial

baseline year (months 0-12). Hospitals will be entered into the intervention at months 13, 17, 21 and 25. Hospitals will only be aware of their own time of randomisation into the intervention but only the research fellow and research assistant co-ordinating the trial will be aware of other hospitals times of randomisation.

Outcomes:

Primary - hand hygiene compliance measured by observers blinded to the hospital allocation, using the developed methodology (www.idrn/nosec.php). This records hand hygiene opportunities and associated hand hygiene behaviours (use of soap, alcohol hand rub, or no action). Observations will be carried out for an hour at a time on each ward, every 6 weeks. Although observations will take place in the morning and early afternoon, observations taken for any one ward will always be taken at the same time of day as the first observations made on that ward in order to control for variation in ward activities dependent on the time of day. Blinding of the observer to ward allocation will be checked.

Secondary : ward based procurement of alcohol hand rub and soap in Litres per bed day per month.

Tertiary : the following infection outcomes will be examined

(a) MRSA prevalence swabbing will be carried out three times a year in each ward which will be the main infectious outcome.

(b) Ward based healthcare associated infection monthly data routinely collected as part of national mandatory reporting of MRSA Bacteraemia, MSSA bacteraemia, and Clostridium difficile infection as cases per 10,000 days.

(c) The wards own routine surveillance data for new MRSA acquisitions (usually defined locally as new MRSA detection less than 48 hours after admission) will also be collected.

(d) A proxy marker of total MRSA infection consisting of the daily defined doses per 10,000 bed days (3) of the common anti MRSA

antibiotics such as teicoplanin, vancomycin IV and doxycycline) will also be collected.

Sample size-power calculations: A simulation approach based on hand hygiene compliance data from a pilot study developing the intervention and data collection systems was used to provide an estimate of power for a stepped wedge design of total duration 36 months, six weekly hand hygiene observations of compliance in each ward, with one ITU and two ACE wards at each trust. Linear mixed effects modelling was fitted to the simulated hand compliance data, and 1000 simulations were performed for each combination of intervention effect from 0% to 12% increase in compliance in steps of 1%, and number of participating trusts 10, 16, and 20. This gave the trial 79.2% power at the 5 % significance level to detect differences in hand hygiene compliance of 7% or greater for 16 trusts, and 88.8% power to detect differences of 8% or more.

Confounders: (i) data on staffing levels and skill mix will be collected for each ward for the day of hand hygiene observations by the hand hygiene observer.

(ii) Monthly data on average bed occupancy, average length of stay, number of female admissions and source of admission (care home or nursing home) will be collected if routinely available by research workers liaising with hospital information specialists at each hospital.

(iii) Ward level defined daily doses of ciprofloxacin and cephalosporins, as these might affect levels of MRSA Bacteraemia and Clostridium difficile infection will be collected by the research team liaising with hospital pharmacy departments.

(v) Every 6 months ward staff will be invited to fill out an organisational climate questionnaire to assess ward culture.

Confidentiality: Each trust, hospital, and ward will be assigned a confidential ID code and any patient data will be collected in anonymised aggregate form.

Analysis: Generalised linear mixed (multilevel) models will also be used to analyse the longitudinal data generated above with the primary comparison being between pre randomisation and post randomisation hand hygiene compliance. This will be done on an intention to treat and per protocol basis. The model will take into account the hierarchical nature of the design (measurements nested within hospitals, and, if appropriate, hospitals within trusts), autocorrelation, pre-intervention trends, seasonal effects, fidelity to intervention and measured confounding factors. Response functions for modelling the effect of the intervention will allow for both changes in level and trend of outcome measures and for the possibilities of learning curves associated with the campaign and subsequent decays in improvements in HH. Results will be analysed for the trial as a whole and then look for subgroup effects with respect to ITUs and ACE wards as these are two very different ward settings and patient groups.

Economic analysis: A simple cost effectiveness model will of the intervention will be used rather than a full economic evaluation of the intervention. The costs of the intervention will be estimated by using hospital accounts for staffing and consumables (Alcohol hand rub and soap), recording time spent by each ward co-coordinators on the intervention using a diary they will keep for that purpose. Changes in the numbers of patients acquiring an infection, the reduction if any in days spent in hospital and the associated reduction in costs of therapy and investigations will be estimated at full cost, distinguishing between capital and overhead costs and consumables, allowing the cost per bed day and case to be estimated. The outcome will be expressed in both costs saved and bed days saved using hospital management cost data adjusted where necessary to reflect opportunity costs of running each ward. The opportunity costs will also be translated into the number of cases awaiting treatment who could potentially be admitted. Detailed sensitivity analysis would be undertaken to assess the robustness of the model for

variations in the cost or resource parameters. The cost-effectiveness of the intervention would expressed by *ward or cluster* to show the incremental cost-effectiveness of the intervention per case, per bed day and other outcome measures such as MRSA prevalence and will be included along with other outcome measures in the modelling analysis.

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References

1. Pittet D, Hugonnet S, Mourouga P, et al. Effectiveness of a hospital-wide programme to improve compliance with hand hygiene. Lancet 2000;356:1307e1312.
2. National Patient Safety Agency 2004. Achieving our aims. Evaluating the results of the pilot Cleanyourhands campaign. www.npsa.nhs.uk/EasySiteWeb/GatewayLink.aspx?alId=5924

3. WHO Collaborating Centre for Drug Statistics Methodology, ATC classification index with DDDs 2005. Oslo 2004.

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