

Use of non-sterile gloves in healthcare; an evaluation of healthcare workers' perception of risk and decision making

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Commercial sponsor and partner – Industrial Microbiological Services Ltd (IMSL).

Collaboration

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MD Industrial Microbiology Services Ltd
- **Rachel Craig**
Volunteer, Ashford & St Peter's Hospitals NHS Foundation Trust

Research has identified an overuse of gloves in clinical practice

- Hand hygiene compliance is significantly worse following glove overuse (Flores & Pevalin 2006)
- Healthcare workers are less likely to decontaminate their hands after using non-sterile gloves (NSG) (Chau et al, 2011)
- Donning NSG is a significant factor in lowering nurses' compliance with hand hygiene (Kurtz, 2017)
- The most common breach of hand hygiene protocol is the abuse of gloves (Boudjema et al, 2017)
- Overall rate of cross contamination associated with NSG was 49% (Wilson et al, 2017)
- Contamination occurred in 79.2% of simulations involving the removal of PPE, the hands and fingers being most contaminated (Kang et al, 2017)

Aims and Objectives

Explore the accuracy of healthcare workers' risk assessment in relation to the use of non sterile gloves

Investigate decision making in relation to NSG

Whether IPC policies and protocols are clear enough regarding the use of gloves

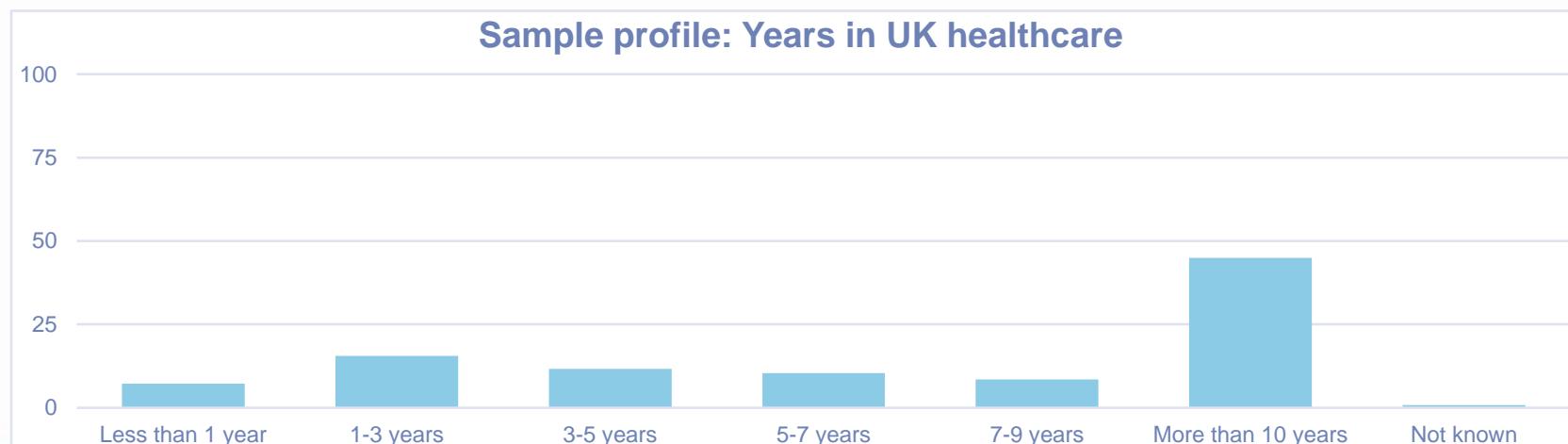
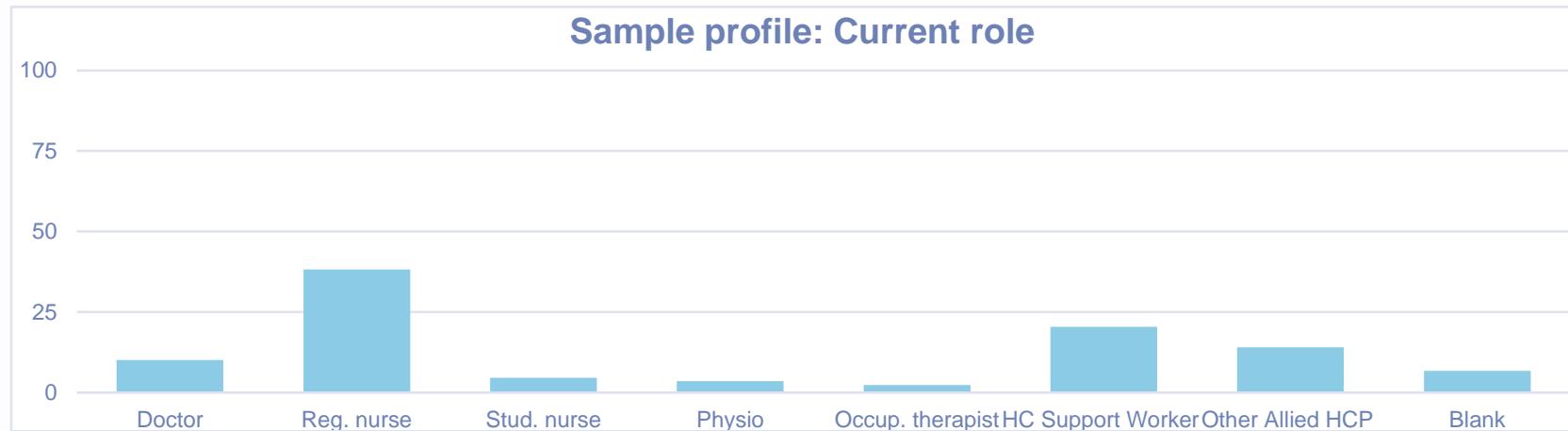
Methodology

Semi-structured interviews Questionnaires

- 13 interviews
- Across 3 healthcare organisations
- Recorded and transcribed verbatim
- Conducted September 2017
- Analysis using Mind-Maps*
- 6 sections
- ASPH 500
- SASH 504
- CSH Surrey 93
- Clean data set 1084
- Data collected May 2017 to February 2018

*A mind map is a diagram used to represent concepts, ideas or tasks linked to and arranged radially around a central key word or idea. Primary branches represent the major ideas or themes around the central topic, and secondary branches tend to include more concrete illustrative examples.

Population profile and years in UK healthcare Questionnaire

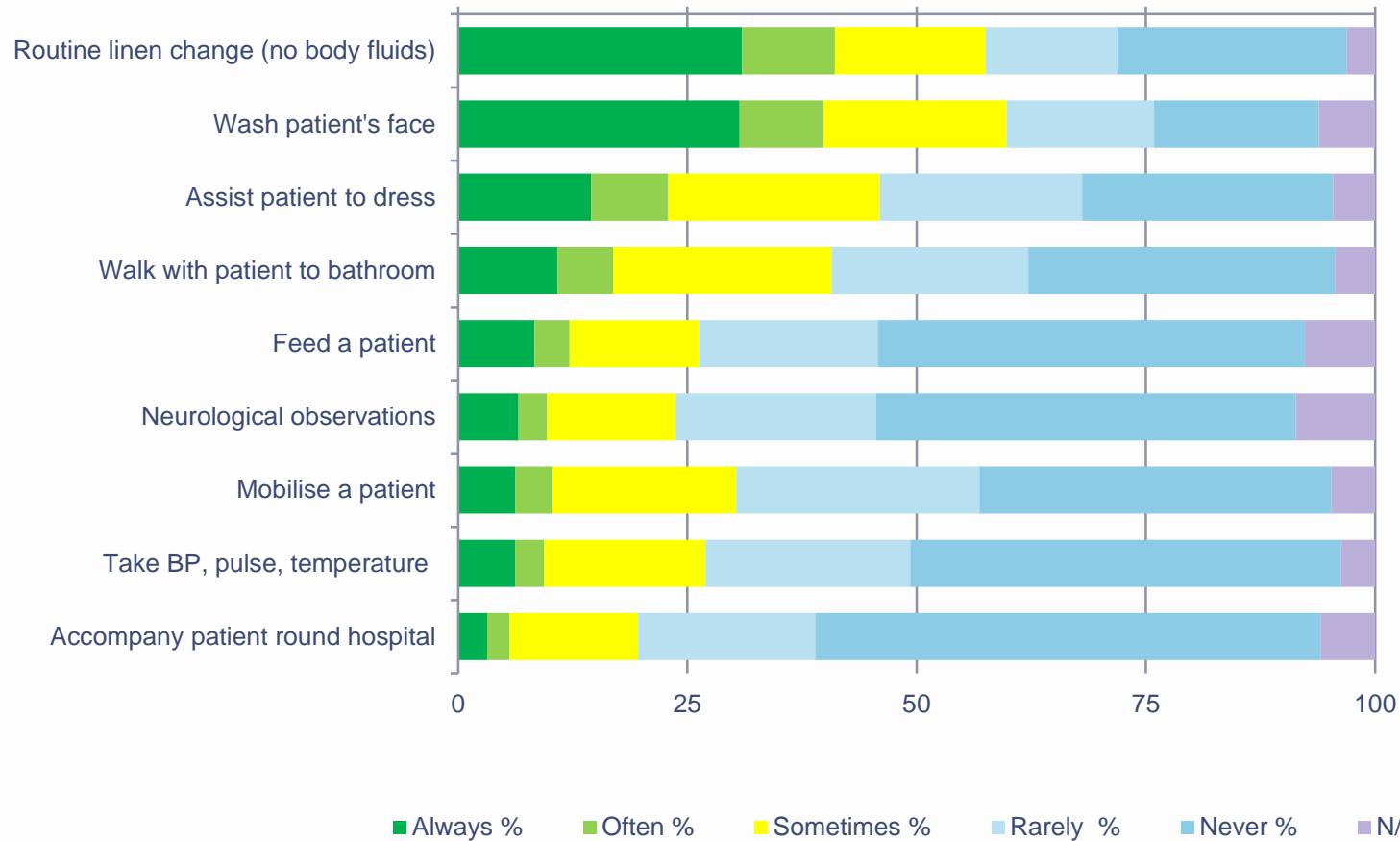


Epic3 guidelines for preventing healthcare-associated infections (Loveday et al, 2014)

Gloves must be worn for:

- Invasive procedures
- Contact with sterile sites and non intact skin or mucous membranes
- All activities that have been assessed as carrying a risk of exposure to blood or body fluids; and
- When handling sharps or contaminated devices
- Source isolation/protective isolation

Tasks where non sterile gloves should never/rarely be worn

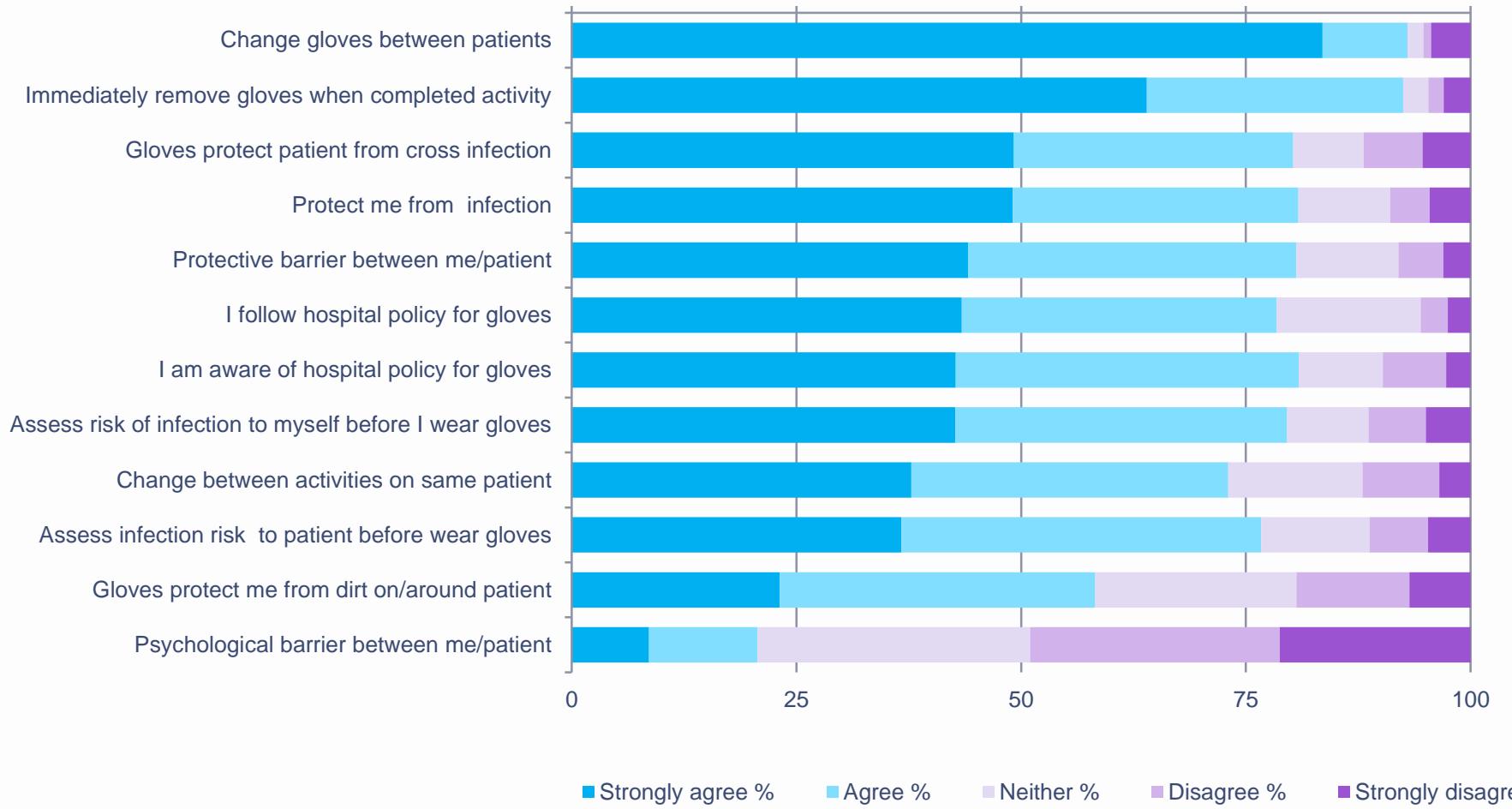


There were significant differences at 95% probability between staff groups:

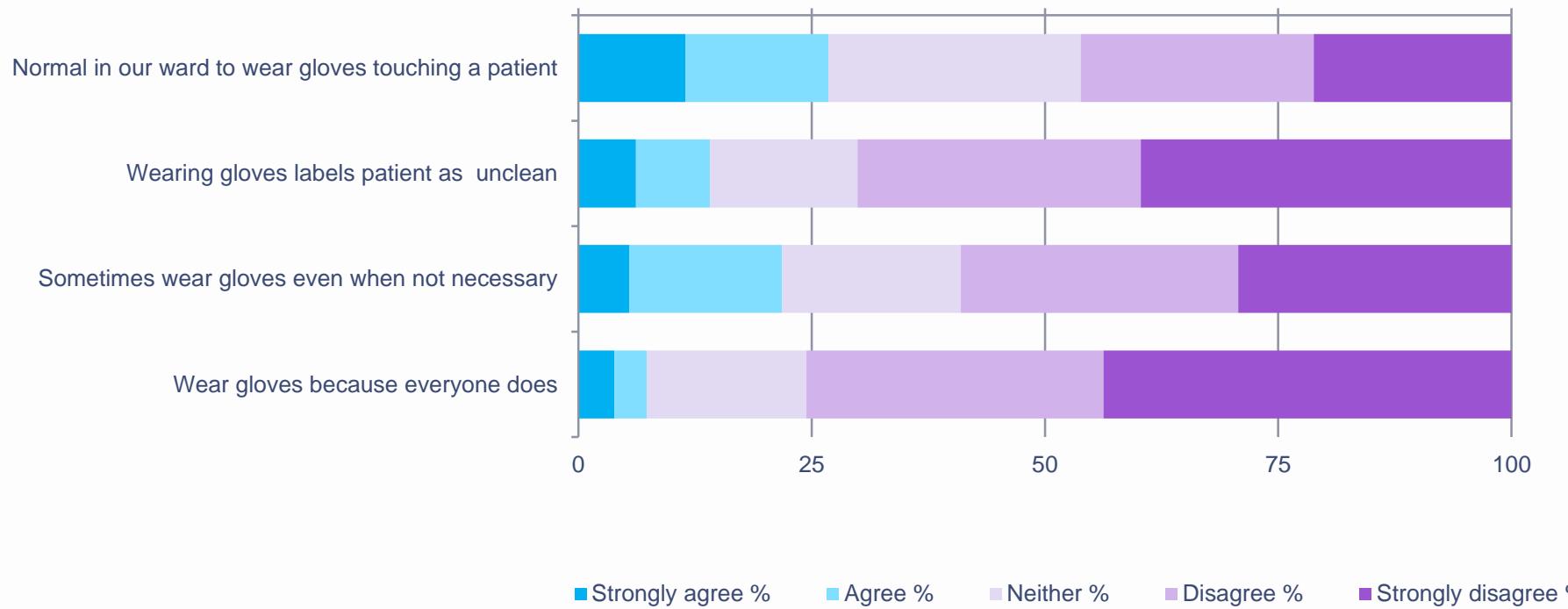
- Walking patients to the bathroom
- Assisting patients to dress
- Taking BP and blood pressure
- Mobilising patients
- Routine linen change (in absence of body fluids)

HC support workers are significantly more likely than doctors, nurses or midwives/maternity staff to respond 'always' or 'often'

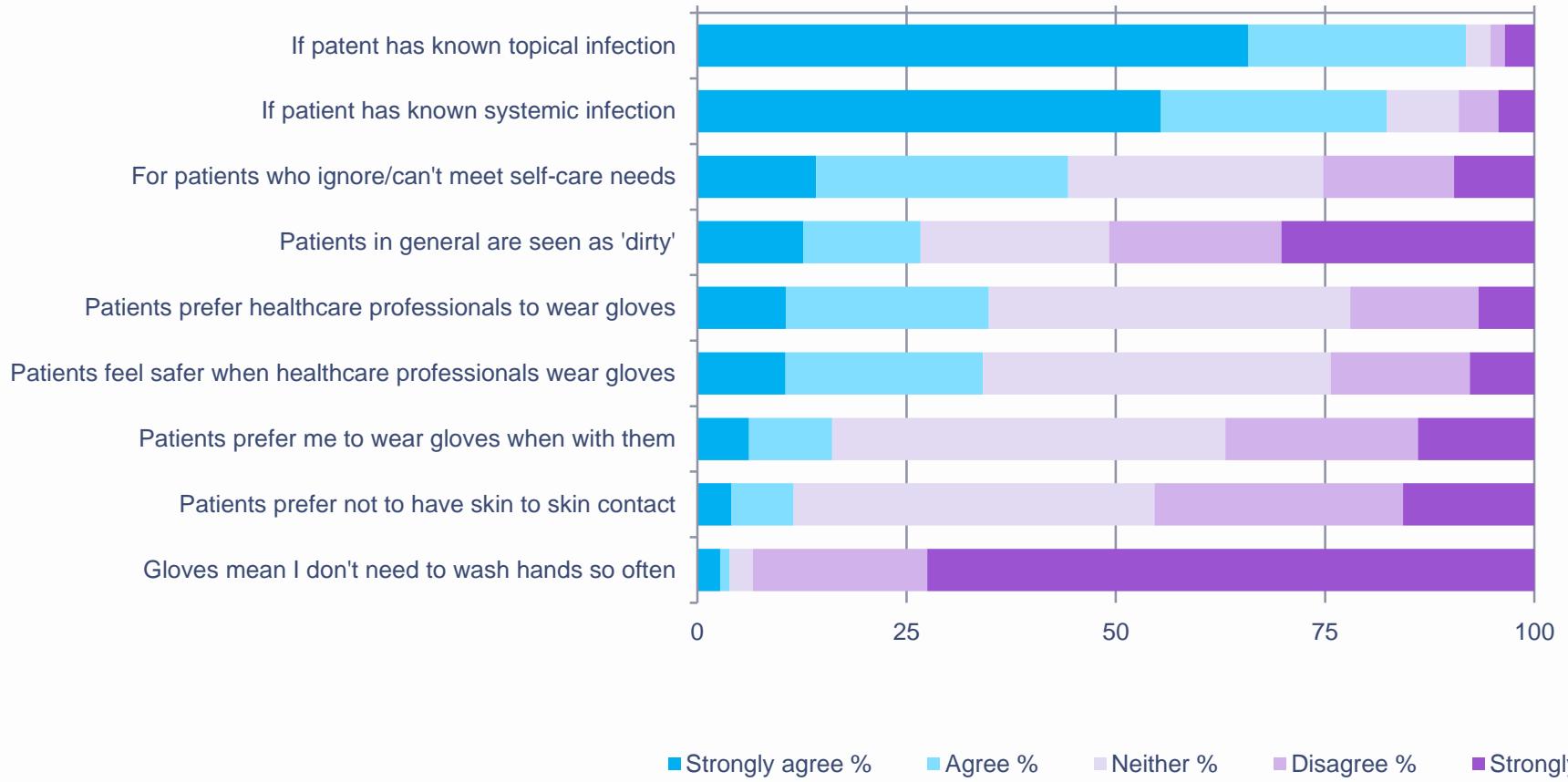
Decision-making about wearing non sterile gloves



Decision-making about wearing non sterile gloves



Factors affecting decision-making about wearing non sterile gloves



Qualitative Results

Interviews carried out by a nurse researcher.

Profession	Number of Participants
Registered Nurse	6
Health Care Assistant	5
Therapist	1
Doctor	1

Decision to use gloves

- Principally used for own safety 'to protect myself, for example from body fluids and if the patient has an infection'
- Secondly, 'protecting the patient, especially those who are neutropenic'

'wearing gloves has a visual message of being safe and showing that you are doing the right thing by wearing them.'

'the messages that wearing gloves sends out to people, being a professional, being clean'

Inappropriate Use

- Respondents had observed colleagues wearing same pair of gloves between patients, and using same pair of gloves for different aspects of care on same patient
- Doing observations, making beds, feeding patients, not washing hands after removing gloves
'because feeding is a social activity. It medicalises something that should be social and relaxed.'

The more senior healthcare professionals felt that good hand hygiene should provide adequate protection, but that historical factors may be influencing current practice, such as HIV.

Issues for gloves

- Colour
- Double gloving
- Barrier - for intimate care

'when washing a patient...sometimes only for personal areas....makes the procedure less intrusive and de-personalised it, so that the patient was able to retain their dignity'

- Resources
 - Cost, time and waste

'after handover I normally ask the staff that; please do not use any gloves which is not necessary really.'
- Dexterity
- Patient experience - importance of touch as part of the communication

'touching people directly can be very positive...wearing gloves can send the wrong message, for example that they are dirty, or that they are infectious.'
- Dirt and dirty

'when I get someone that hasn't maybe got the best personal hygiene, I am a little guilty of thinking I just want to put some gloves on, just before I go in too close.'

Behaviour and influence of others

- Most were aware of the need to change their gloves for each patient and to wash their hands. But had observed colleagues, either not changing their gloves, or not washing their hands; rarely was this behaviour challenged.
- Rarely did people feel able to challenge or enquire regarding the glove practices of others.

Most said that they learnt from observing colleagues and seniors from their *own peer group*. Thus the behaviour is repeated.

- Doctors are more likely to work in isolation and therefore do not see the behaviour of other doctors, plus they are more likely to be using sterile gloves.
- Putting on gloves is seen as an automatic response rather a considered one.
...it's just part of the process of when you go and see a patient for whatever reason...

'Gloves should be worn with any contact with patients.'

Education and training

- Hand hygiene training at induction, but no specific training regarding the appropriate use of gloves.
- Three respondents mentioned Trust policy; that they should be reading it but had not actively sought it. Did not know for certain if there was a policy, but assumed the Trust had one.

'..I have watched other people, but no-one has specifically said this is what you have to do when you put on the gloves'

- Reported lack of knowledge and understanding regarding the transmission of disease

'I am wearing gloves to keep everything as clean as possible'

- Lack of direct training regarding glove use, much is based on observation and personal preference, not based on knowledge or science.

‘When wearing gloves we feel safe and protected, but maybe forget when spreading infection if we don’t remove them at the right time. We may clean a commode with gloves on and then open a door with them on. We could be doing more harm than good if we only think of ourselves and not consider the bigger picture.’

Conclusion

- Glove use is a complex issue
 - greater understanding of when and why they are worn for different healthcare groups is needed
- Education and training is key, in order to ensure sustained behavioural changes
- Clearer guidance and policy
- Patient experience and safety is central
 - importance of touch to convey comfort and care
 - safe environment / infection control
- Issues of sustainability and waste
 - use of resources needs to be responsible, based on clinical understanding
- Next steps – design of a multi-modal intervention to improve glove use

Study limitations

- Maternity:
 - omitted from staff groups
 - different working practices
- Questionnaire:
 - some questions too broad, hence open to interpretation
 - leading questions, so data might reflect what respondents thought were the ‘right’ answers
- No observations were carried out
- Universal gloving policy for some areas, such as critical care

Team work

Thank you to all those who have contributed to this study

All those completing the questionnaires and giving the interviews

All those downloading and checking the data

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Nursing Times - On The Pulse Friday 30th August 2019

Written by Eileen Shepherd

Hand in glove: could your use of disposable gloves cause more harm than good?

How many pairs of disposable gloves do you get through a day? And have you ever thought about what happens to them when they are discarded into clinical waste? Use of gloves is a contentious issue in clinical practice. Looking back to when I trained, non-sterile gloves were used sparingly for procedures such as rectal administration of medicines and mouth care.

No one would have dreamed of using them to administer IM or IV medicines unless there was an identified risk. Physical care such as washing and dressing was delivered without gloves and we never used them to help patients to eat and drink. Attitudes to the use of non-sterile gloves have changed significantly over the years and it is now accepted that they are overused and, as a consequence, patients are routinely receiving care that is not evidence-based. There is also evidence that when healthcare staff use gloves to protect themselves, they wear them for multiple procedures and fail to decontaminate their hands between tasks, which puts patients at risk.