



## SUSQI PROJECT REPORT

### Glove use awareness campaign

#### Team Members:

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#### Background:

There was substantial growth in PPE items distributed to health and social care services in England during the Covid19 pandemic, increasing from 2.43 billion in 2019 to 8.7 billion items in 2020 (Department of Health and Social Care 2021). The Royal College of Nursing (RCN, 2021) affirm that between 25 February 2020 and 24 February 2021, 5.5 billion gloves were used– the most used plastic item within healthcare.

Daniel (2021) confirms gloves are used worldwide and are vital pieces of PPE when used correctly. However many studies highlighted the misuse of non-sterile gloves, with the potential for cross contamination often when they are used when unnecessary and when continuously worn touching many surfaces (Wilson et al, 2015; Lindberg et al, 2020).

Other UK Trusts have undertaken glove awareness campaigns. For example, Great Ormond Street Hospital's "The Gloves are Off" project in 2019 resulted in a positive impact for the environment by saving 21 tonnes of plastic, while improving staff hand health and patient experience relating to glove use (GOSH, 2019). Newcastle Hospital Trust Infection Prevention Control Team won a national award in 2022 for their gloves-off campaign (Infection Control Society, 2022). They found glove use increased to 22 million pairs in the second wave of the pandemic, from 14 million in 2019. At Hampshire Hospitals, we currently use approximately 276,25 gloves per week (data obtained from the trust procurement department). Projected over a period of twelve months the Trust will use over 13 million pairs.

Rizan et al. (2021) found that eliminating glove use would reduce the carbon footprint by 45%, saving 48,262 tonnes of CO<sub>2</sub>e over six months. Tackling the issue of unnecessary glove use now is also financially beneficial as the government support for free PPE will end by 31 March 2024. As a Trust, it has been a few months now that we have removed mandatory mask wearing but there may be the lingering effect of the pandemic as staff and some patients alike still perceive glove use as a necessity, thereby overusing them when not needed.

As an Infection Control team, we feel strongly responsible about the increased glove use within HHFT post pandemic, and as a team identified we can do something about this issue through our role to advise on PPE use in line with government guidance.

#### Specific Aims:

Short term aim: To reduce unnecessary glove use within selected sites by 50% by the end of the sustainability project.

Long term aim: To roll out the campaign across the whole of HHFT Trust.



### Methods:

Two wards included in this pilot project were selected for having different specialities. Ward A has 25 bed capacity, with 3 bays with 6 beds, 1 bay with 5 beds, and 2 side rooms. Ward B has 23 bed capacity, with 1 bay with 6 beds, 2 bays with 5 beds, 1 bay with 4 beds, and 3 side rooms.

The current Trust's Glove Policy, Intravenous Administration of Medication (including Intravenous Infusions) Policy and Aseptic Technique Policy were reviewed to draft a glove use audit tool used in this project. For collection of baseline data, observations were carried out on each ward for 20 minutes using the glove audit tool twice daily (morning and afternoon) for 5 consecutive days to record how many gloves are being used unnecessarily. (See Appendix A. Glove Audit tool)

### Changes implemented

Following our observations, we used the data collected to run a staff awareness and engagement campaign in the trial wards.

- 1) Leadership engagement: Ward sisters are key staff to disseminate messages. We approached and spoke to ward sisters personally about the campaign, highlighting a key message: care, cost, carbon. We encourage staff to think about the triple benefit to reducing glove use, explaining how reducing glove use is beneficial for patient care, while bringing environmental and financial savings at the same time. We calculated the potential savings on each ward if glove use was reduced by 50%, and shared these figures with staff.

- 2) No Risk, No Glove Posters:

These were placed strategically in areas where gloves are stored on wards to remind staff to consider if gloves are required for the task they were about to do.

- 3) Glove use video

We are collaborating with the Trust comms team to develop a glove use video to be disseminated trust wide. This video explains

- The common reasons for inappropriate glove use in the observed wards
- The care, cost, carbon message and benefits
- Uses the phrase "If it's wet, sticky, and not yours, wear gloves. If not, clean your hands. You do not have to wear gloves all the time" as a reminder for staff to reconsider glove use.

### Measurement:

#### *Patient outcomes:*

It was not possible in a 10 week timeframe to monitor changes to patient care, however we anticipate that reduced unnecessary glove use can improve hand hygiene and reduce risk of transmitting infections. This can be monitored long term via our existing processes for monitoring rates of infections.

#### *Environmental sustainability:*

We used a mix of procurement/ordering data and observational audit data to identify reduction in unnecessary glove use.

The emission factor for a single glove of 0.026 kgCO<sub>2</sub>e was taken from Rizan et al 2021 to estimate savings from a reduction in glove use. The carbon emission of a glove was estimated using a Life Cycle Analysis (LCA) and includes production, manufacturing, transport, and disposal of the gloves.

#### *Economic sustainability:*

The cost of a box of gloves was provided by our procurement team, with a cost of 0.0321p per glove.



We used a mix of procurement/ordering data and observational audit data to identify reduction in unnecessary glove use and estimate financial savings.

*Social sustainability:*

A questionnaire regarding staff perception on glove use was sent to staff by email and access code with 30 respondents.

10 patients from the two wards were interviewed about their perception of healthcare practitioner's glove use.

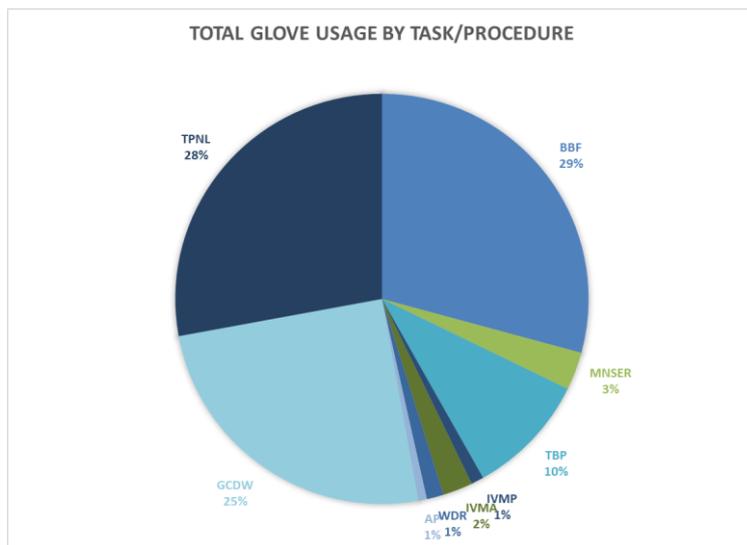
**Results:**

217 episodes of glove use were recorded during the initial 800 minute observation between the 2 wards. 28% or 84 pairs of gloves were noted as unnecessary usage.

On both wards, the most common reason for inappropriate usage, accounting for 40% of inappropriate use, was staff wearing gloves to touch or contact patients and/or bedspaces deemed clean or free of infection or no actual risk for blood or body fluids exposure.

This was followed by wearing gloves for vitals check including checking weight and walking/talking in the corridor without any direct patient contact or any risk of exposure for infection at 17% and 16% respectively.

Figure 1: Reasons for inappropriate glove use on trial wards:



Following our interventions, there were 166 episodes of glove use recorded for 640 minute observation between 2 wards. Of these, 21% (37 pairs of gloves) were recorded as unnecessary glove use. The reasons for unnecessary glove use continued to be for the same reasons as detailed above.

*Patient outcomes:*

The 'Gloves are off' campaign by Great Ormond Street Hospital has shown no adverse increase in their hospital acquired infection rates 6 months after implementing the changes of reducing unnecessary glove use (Dunn et al, 2019). Lindberg et al (2020) study found that 3.3 surfaces were touched by contaminated gloves when they should have been removed or changed highlighting the potential transmissions of pathogens. One study found only 18.6% of employees were disinfecting their hands before wearing gloves whilst 65% disinfected their hands after using non-sterile gloves linking glove use to poor hand hygiene practice (Imhof et al, 2021).

We therefore anticipate that a reduction in inappropriate glove use will not negatively impact infection rates and will improve hand hygiene practices in staff.

*Environmental and economic sustainability:*

Following our changes we observed a drop in unnecessary glove use from 28% of usage to 21% of usage - a 7% decrease. This is a decrease of approximately 12.6 pairs per day on Kemp Welch ward and 29.75 pairs per day on Clarke ward. Projected across a year, this leads to potential annual savings of 239.1 kgCO<sub>2</sub>e on Kemp Welch and 564.7 kgCO<sub>2</sub>e on Clarke. The total saving of **803.8 kgCO<sub>2</sub>e** is equivalent to driving 2,374 miles in an average car.

A 7% reduction in unnecessary glove use is also a saving of £295.26 for Kemp Welch ward and £697.20 for Clarke ward, with the pilot project saving a projected **£992.50** per year.

We will continue to work towards our target of a 50% reduction in unnecessary glove use. In these two wards alone, this would equate to savings of approximately 5.7 tonnes CO<sub>2</sub>e and £7000 per year, equivalent to driving 16,955 miles.

*Social sustainability:*

Staff feedback: We received 31 responses to our staff survey. Approximately 50% of respondents feel that gloves are overused in the Trust.

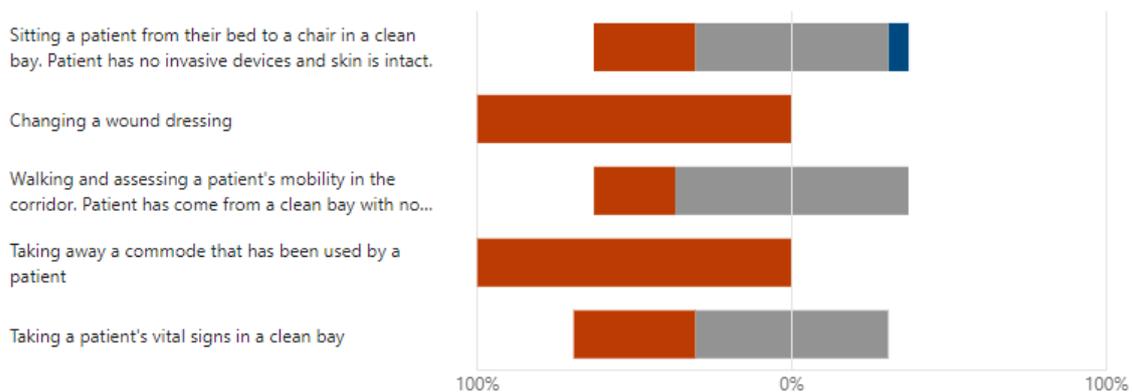
77% reported they always assess the risk of infection, with 58% confident in knowing when to use gloves all of the time, and 42% confident most of the time. However, a question asking staff if gloves need to be worn in specific situations identified there is ongoing confusion from staff over when gloves are necessary.

Table 1: Responses to staff survey question evaluating staffs understanding of glove use for varied tasks.

2. You need to wear gloves for the following tasks.

[More Details](#)

■ True ■ False ■ Unsure



Comments on glove use in the Trust were varied. There were themes of staff reporting they feel safer / less at risk if they wear gloves with all patient contacts. Several staff commented that more education is needed on appropriate glove use.



#### Example comments from staff:

*I always wear gloves when I approach a patient, especially since after CV-19. I was always taught in my training any contact with patients, you must always wear gloves. I have always maintained this value.*

*I encourage other healthcare members to wear gloves for their safety and safety of the patient.*

*Gloves must be worn at all times in every patient contact and must be changed every patient to prevent transmission of infection.*

*Gloves are worn too much. Some staff even use gloves for giving out meals in clean bays. The same gloves are worn even though they are going to different patients.*

*Too much wastage*

*Gloves are overused, staff use the same gloves for multitasks. i.e. not needed for giving out meals, patients tasks. It is better to wash our hands.*

*Some of the gloves quality is poor and they tear easily*

68% of staff reported they are concerned about the environmental impact of healthcare and glove/PPE use. This, alongside supporting staff to understand and be reassured that more PPE does not reduce risk of infections (in fact it may increase the risk) will hopefully continue to be supportive messages in reducing overuse in the Trust.

#### Patient feedback

Patients were asked if they thought staff should be wearing gloves when supporting patients in different situations. While in some situations there was a majority agreeing gloves should be worn in these situations in which IPC would also recommend gloves, (e.g. toileting, would dressing change), there were some situations with mixed opinions from patients.

60% of patients felt staff should wear gloves when being supported to walk to the toilet. 50% felt staff should wear gloves when serving them tea or coffee. 60% felt gloves should be worn when their blood pressure is taken.

There were also mixed responses when patients were asked if staff wear gloves appropriately. 9/10 patients reported staff seldom or never used gloves appropriately, however had conflicting opinions as to why - some patients reported too many gloves were used, while others said gloves were not used enough. This patient feedback shows a clear need to educate and reassure patients of their safety in the context of appropriate glove use.

60% of the patients interviewed stated they were concerned about the impact of unnecessary glove use on the environment, which highlights linking overuse to waste and environmental impacts of care may be a supportive way to engage patients in these initiatives.

#### Discussion:

We have seen a 7% reduction in inappropriate glove use in a short space of time, and hope that as we continue to disseminate messages about appropriate use that we will see this figure move closer to our goal of a 50% reduction.

Our social surveys have shown the importance of consistent messaging and addressing both patient and staff concerns of infection and safety to support the understanding that more gloves is not the best protection. We will continue to spread this message to staff. We are currently working with the Trust communications

team to develop an awareness video to support staff to understand the key reasons for why glove overuse is harmful (including for patients and infection rates) using our care, cost, and carbon messaging.

Our results are based on 2 ward observations. The number of gloves used on wards could fluctuate based on the number of patients, staff on the ward at the time, as well as time of the day or even year. Implementing this change at Trust level, we would aim to use procurement data as a more accurate reflection of reduced glove use.

This project has been valuable for opening conversations between the IPC team and ward teams. As our social survey has shown, there are very mixed opinions on glove use and therefore clear, careful communication is extremely important. Some staff perceived the project was being implemented to take gloves away from clinical teams, and so these concerns need to be addressed.

The generalised messaging of the 'No risk, No glove' poster alone may not have much effect on nudging people to think before they pick up a pair of gloves. As above, our mixed social impact survey results show that this is an issue that staff and patients feel strongly about in conflicting ways, and so we need to ensure our messaging and communications address concerns and misconceptions appropriately.

#### Conclusions:

Considering the limited time given in completing this project, it has still been shown that there is a positive outcome from the simple strategies that were implemented with the use of visual cues and direct staff engagement regarding unnecessary glove use.

Survey results show that most staff and patients alike are concerned of the impact of the overuse of gloves within healthcare. Through this awareness campaign, staff have become more informed about the impact of unnecessary glove use to the environment by sharing the result of how much carbon use can be saved by tackling this issue. Staff were encouraged to risk assess when gloves are needed using the WHO glove pyramid which contributes to better infection control compliance and achieving sustainability goals.

The next step is to implement this project to other wards to gather further data and formulate more strategy in hopes of using this pilot as a Trust-wide campaign.

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