

Hand Sanitiser Placement Guidelines



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Introduction

Hand sanitiser dispensers are now widely used in workplaces. Studies suggest that the careful consideration of dispenser locations may improve their efficiency, reduce waste and increase compliance [1,2,3].

Strategic placement can make hygiene products accessible for more effective and frequent use.

Poor visibility or limited access at inappropriate locations may hinder dispenser usage. Finding optimal locations could also reduce the number of sanitisers needed, offering an additional budgetary saving [4].

These guidelines are based on a review of existing recommendations from a wide range of sources, including governmental, commercial and academic sources. By analysing such a range of sources we bring you easy-to-follow and evidenced principles for you to practice in your workplace.

These guidelines are designed for site managers across the workforce. We hope you find them useful.

3 keys steps for better hand sanitiser placement

1. Follow the recommended locations for hand sanitiser units.
2. Ensure health and safety, visibility and accessibility principles are followed.
3. Use visual methods to select prime workplace locations for your own spaces.

step 1

Follow the recommended locations for hand sanitiser units

Hand sanitisers should be placed in all the key areas identified below.

Be aware this is not an exhaustive list. Each workplace may have its own specific needs based on the layout of the building. See Step 3.

Consider all high footfall areas as potential areas for hand sanitisers.

Entries and exits



Washrooms



Stairwells



Reception areas



Meeting rooms



Shower Areas



Main corridors



Kitchen/cafe areas



Locker Areas



Shared offices



Lifts



Production areas



step 2

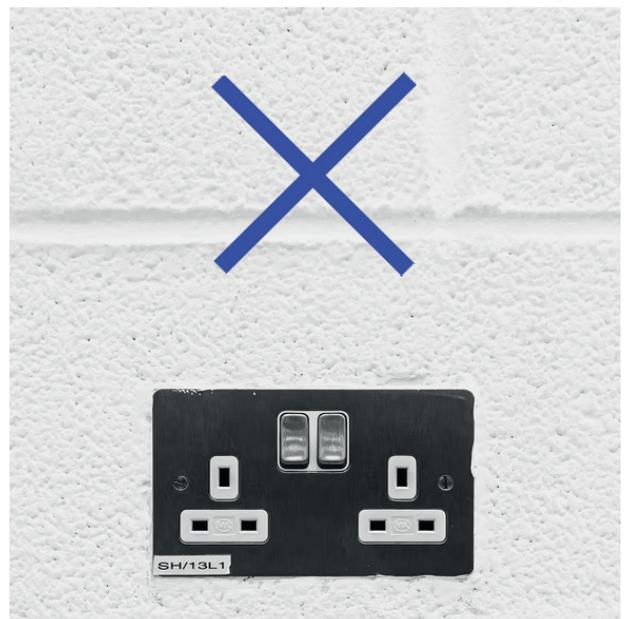
Ensure health and safety, visibility and accessibility principles are followed

2.1 Health and Safety Principles

- Check your health and safety organisational policy to ensure it includes hand sanitisation and outlines expectations for all staff.
- Ensure alcohol-based hand rubs/ gels are kept away from naked flames and ignition sources.
- Ensure that dispensers are not placed directly above or adjacent to electrical sockets or switches.
- Discourage smoking outside immediately after using hand sanitiser. It contains 70% alcohol which can easily ignite.
- Ensure staff/visitors know that swallowing hand sanitiser can cause alcohol poisoning, particularly if your business caters for younger children.



Credit - Антон Воробьев



step 2

2.2 Make your hand sanitisers more visible.

Remember that it's important for your employees to easily see the hand sanitisers in entrance ways and around your building. To ensure their visibility we recommend the following steps:



Perform an Environmental Squint Test (EST)

In order to sense how visually dominant the hand sanitiser is, half close your eyes when you look at the sanitiser in situ.

Look at the image on the left above and half-close your eyes. Notice how other elements are standing out much more than the white sanitiser. This is made very clear if we blur the image as shown below - the sanitiser disappears.



ToolTips:

If you want to blur any image for yourself try online tools like <https://www.befunky.com/create/blur-image/>

De-clutter spaces around the hand sanitiser.

Make some adjustments to the setting of the unit and re-test.

If we cleared away some of the communications that can distract from the sanitiser unit as shown in the lower picture and use some bright shapes to focus attention on the unit, this makes a massive difference. The sanitiser unit area is even still dominant with a blur applied.



Evidence base

In hospital-led research, Thomas et al [5] found that visibility and proximity to where people move increased the use of sanitiers much more than simply putting out more hand sanitisers.

It is better to place them strategically where they are easily seen than to install more.

Hobbs et al [6] also found that visitors are 5.28 times more likely to use hand sanitisers when dispensers are located in the middle of the lobby area with limited landmarks/visual noise.





Adjust your usual branded colour in hand sanitiser communication design – go brighter and use contrasting colours.

Whilst the temptation might be to use your existing branding for the sanitisers, be aware this can have an effect on visibility. This is particularly the case where many signs are present as in the left-hand example. All the 'messages' tend to blend into one. What a difference choosing a contrasting colour makes.

Also, rather than using muted colours, go brighter to really help the white unit stand out. The freestanding sanitisers need to both stand out from their settings but also highlight the white unit. In the example on the lower right, the blue stands out more than the dark purple given its higher levels of brightness.



ToolTips:
Use color.adobe.com to identify contrasting colours or work with your branding team.



Consider using shapes to help the sanitiser stand out from the environment.

We get so used to seeing rectangular signs and straight lines within architectural design that, instead, we could consider using both colour and shape to help the unit stand out from its background.

In this image both colour and unusual shape has been used to pull attention toward the unit. The circle contrasts with the vertical lines of the door way whilst complementing the colour of the unit switch itself. The circle shape is visually interrupted by the device so it draws attention through its incompleteness.

Utilising shape as well as colour can also encourage attention for those with colour blindness.

Evidence base

Costa et al [7] highlight how road signs with angular shapes or triangular or cross signs were better identified in peripheral vision than more common shapes such as circles and squares. When people are walking towards your sanitiser at an angle, how identifiable is it?

step 2

2.3 Make your hand sanitisers more accessible.

It is vital that sanitiser units are accessible for a range of staff/visitors.

Ensure easy/unobstructed access to the units – for example, close to entrances / exits of each room;

Ensure people can reach for the dispenser with natural physical posture – discomfort may discourage usage;

Consider the units' surroundings – for example, close to high infection touch points;

Always place at appropriate heights – diverse groups need to be considered, for example, children or people with physical disabilities;

Along the workflow path (see page 11), consider the frequency of footfall at different locations – crowded queues may reduce usage.



Hand photo created by freepik - www.freepik.com

Evidence Base

According to Cai [8], hand sanitisers will be used more if you maximise the location of your sanitiser according to principles of accessibility and visibility.

step 3

3.1 Identify prime workplace locations for your own spaces.

Even though the list of specified locations in Step 1 provide suggestions for where dispensers should be placed, it cannot cover the specific needs of every workplace.

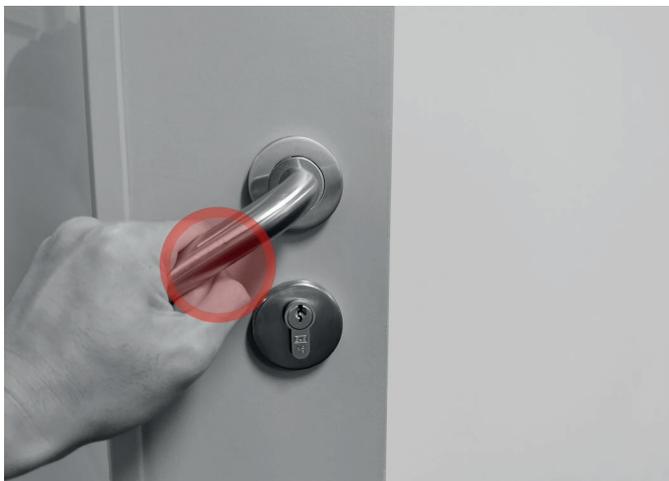
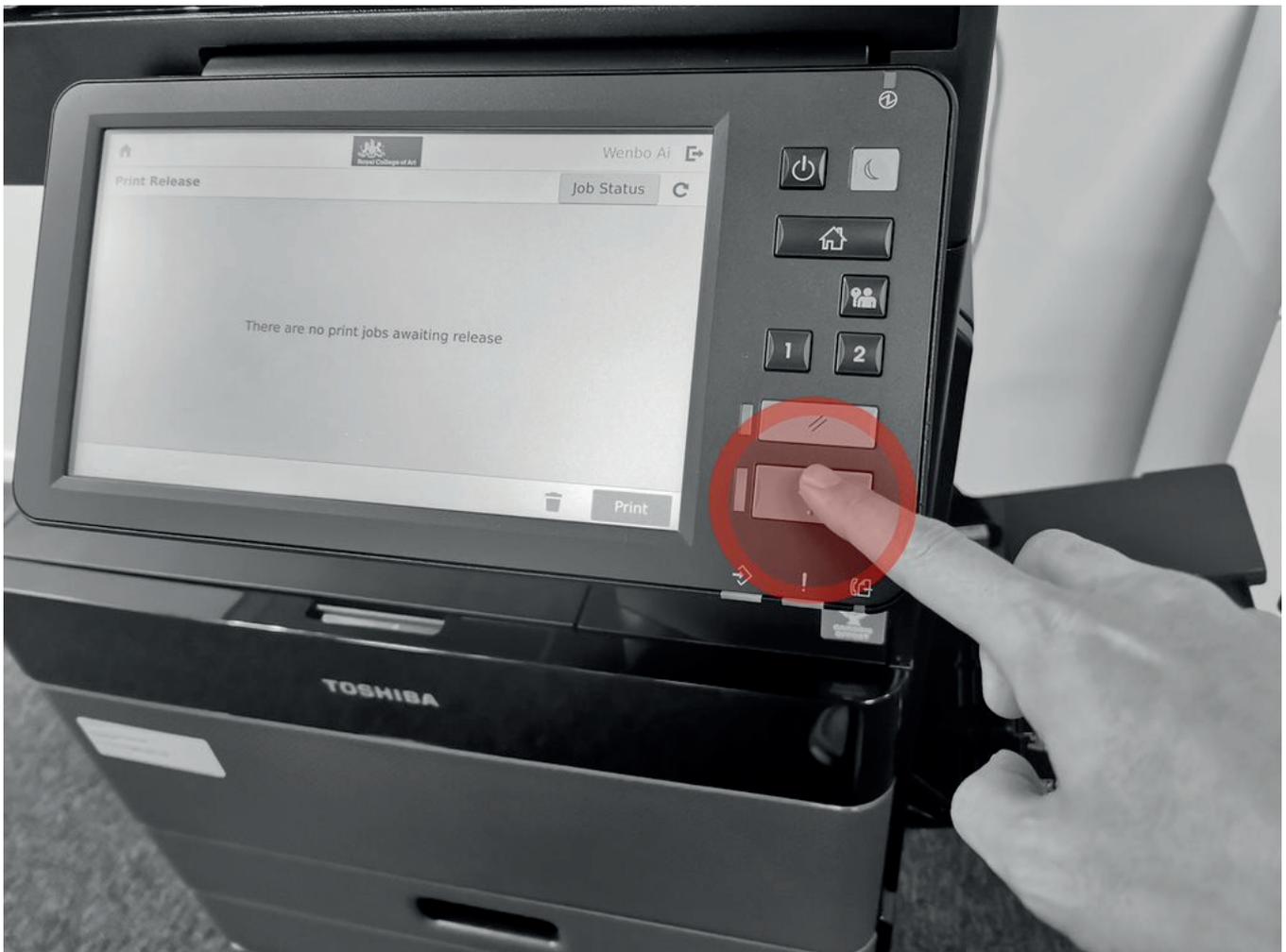
The 5-part process described below is designed to guide the identification of appropriate dispenser locations for your own workplace setting.

1 Identify the common areas

It is necessary to suggest a clear and practical configuration for sanitiser placements. Identifying the common areas is a first step for pre-configuration and to estimate the ideal number and locations of dispensers. We recommend common locations for hand sanitiser units in Part 1. However, each workplace needs to identify its particular shared areas and spaces and each of these areas must have at least one dispenser installed.

2 Identify the most common touch points in the workplace

Research has identified high-touch points in public spaces which can be highly contagious areas [9]. These high touch-points vary across workplaces, each occasion of use needs to be individually identified and considered. Identifying sub-areas and their key infection touch-points is helpful to define the total number of dispensers needed and their locational variations.



Common touch points include:

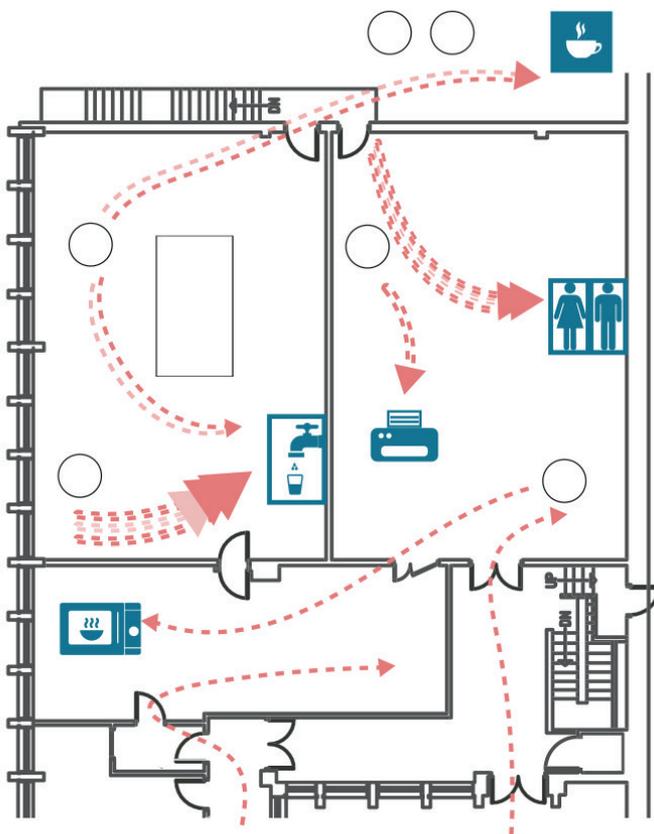
- Door handles
- Telephones
- Lift buttons
- Computer keyboards
- Printers
- Light switches
- Kettles

Tips

Observe staffs' behaviour patterns. Group discussions can be excellent ways to identify infection touch-points in the workplace.

3. Workflow journey analysis

Research suggests that it's useful to first identify common pathways used in a workplace before hand sanitiser are installed [10]. Data suggests workflow identification improves hand sanitiser usage [11]. Stakeholders can use floor plans or other materials to indicate different workflows through rooms. A generic average workflow diagram showing these regular patterns can be made by managers. Such identification will help managers understand staffs' regular daily journey maps and contribute to optimal dispenser placement.



Further Guidelines

Spaghetti diagrams are well used in various settings to improve productivity as well as to identify footfall 'hotspots'. See some guidance here from:

<https://www.england.nhs.uk/wp-content/uploads/2021/03/qsir-spaghetti-diagram.pdf>

Evidence Base

As part of their study, Bezpalko, O., Ponnala, S., & Won, J. C. [12] used spaghetti diagrams specifically to identify problem areas in a clinical setting where staff weren't using the hand sanitiser as much as they should.

4. Participatory decision making

The participation of different stakeholders and employees in determining the location of hand sanitisers can be very valuable [13, 14].

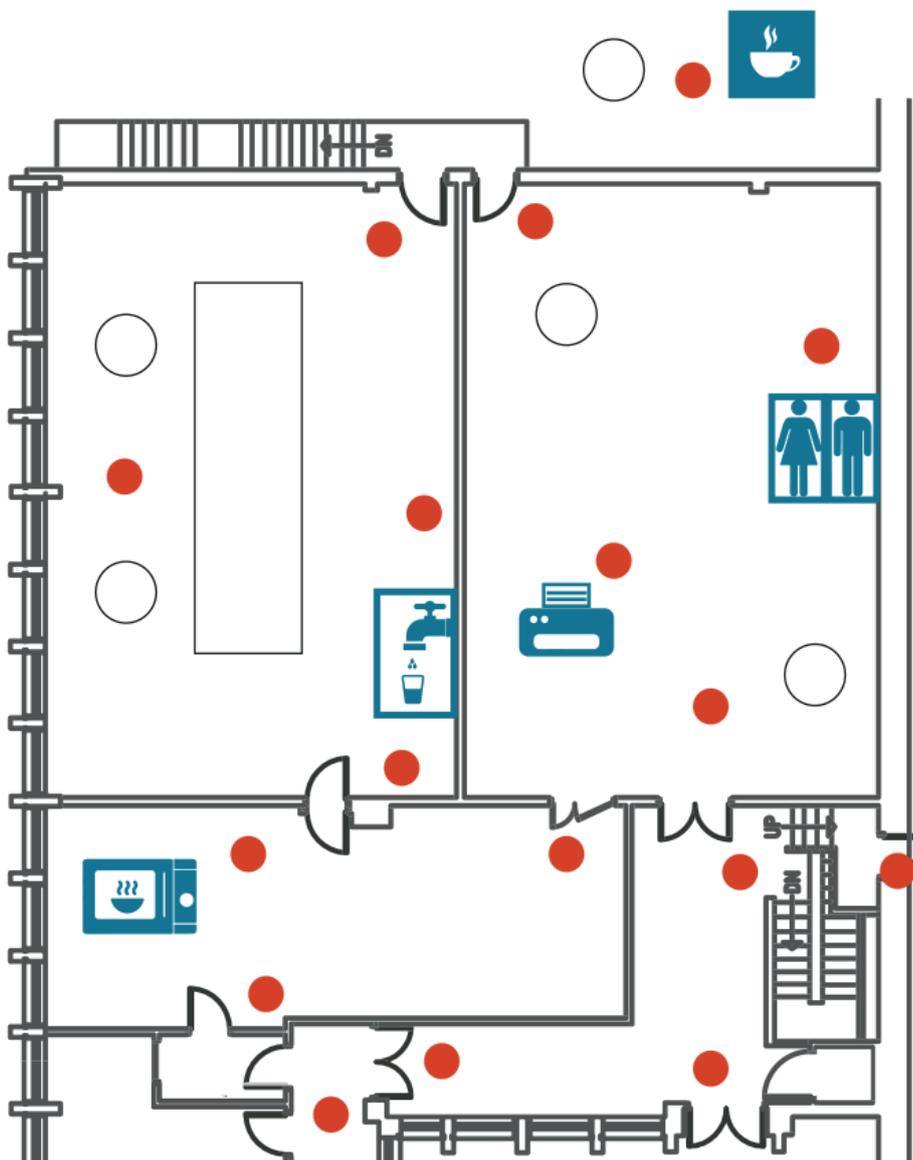
Ask your staff whether the existing locations meet their needs or ask them to complete their own spaghetti diagrams.

5. Locate units using a floor plan

Finally, once the decisions have been made, locations can be marked on the floor plans. The installation of sanitiser units can now go ahead.

Tool tips:

Using colour-coded stickers is a good way to mark locations, both on the map and on site [15].



References

- 1 Andriani, Y. and Nadjib, M., 2018. The Importance of Implementation of Hand Hygiene Practice in Reducing Healthcare-associated Infections: A Systematic Review. *KnE Life Sciences*, 4(9), pp.135-145.
- 2 Anderson, J., Gosbee, L., Bessesen, M. and Williams, L., 2010. Using human factors engineering to improve the effectiveness of infection prevention and control. *Critical Care Medicine*, 38, pp.269-281
- 3 Suresh, G. and Cahill, J., 2007. How “User Friendly” Is the Hospital for Practicing Hand Hygiene? An Ergonomic Evaluation. *The Joint Commission Journal on Quality and Patient Safety*, 33(3), pp.171-179.
- 4 Cure, L., Van Enk, R., & Tiong, E. (2014). A systematic approach for the location of hand sanitizer dispensers in hospitals. *Health care management science*, 17(3), 245-258.
- 5 Thomas BW, Berg-Copas GM, Vasquez DG, Jackson BL, Wetta-Hall R (2009) Conspicuous vs customary location of hand hygiene agent dispensers on alcohol-based hand hygiene product usage in an intensive care unit. *J Am Osteopath Assoc* 109(5):263–267
- 6 Hobbs, M. A., Robinson, S., Neyens, D. M., & Steed, C. (2016). Visitor characteristics and alcohol-based hand sanitizer dispenser locations at the hospital entrance: Effect on visitor use rates. *American Journal of Infection Control*, 44(3), 258-262.
- 7 Costa, M., Bonetti, L., Vignali, V., Lantieri, C., & Simone, A. (2018). The role of peripheral vision in vertical road sign identification and discrimination. *Ergonomics*, 61(12), 1619-1634
- 8 Cai, H., Tyne, I. A., Spreckelmeyer, K., & Williams, J. (2021). Impact of Visibility and Accessibility on Health-care Workers' Hand-Hygiene Behavior: A Comparative Case Study of Two Nursing Units in an Academic Medical Center. *HERD: Health Environments Research & Design Journal*, 14(2), 271-288.
- 9 Zivich, P. N., Gancz, A. S., & Aiello, A. E. (2018). Effect of hand hygiene on infectious diseases in the office workplace: A systematic review. *American journal of infection control*, 46(4), 448-455.
- 10 Boudjema, S., Dufour, J., Aladro, A., Desquerres, I. and Brouqui, P., 2014. MediHandTrace®: a tool for measuring and understanding hand hygiene adherence. *Clinical Microbiology and Infection*, 20(1), pp.22-28.
- 11 Scheithauer, S., Eitner, F., Mankartz, J., Haefner, H., Nowicki, K., Floege, J. and Lemmen, S., 2011. Improving hand hygiene compliance rates in the haemodialysis setting: more than just more hand rubs. *Nephrology Dialysis Transplantation*, 27(2), pp.766-770.
- 12 Bezpalko, O., Ponnala, S., & Won, J. C. (2021). All Hands on Deck: Sustaining Improved Hand Hygiene Compliance in the Operating Room. *Ergonomics in Design*, 1064804621995097.
- 13 Eldridge, N. E., Woods, S. S., Bonello, R. S., Clutter, K., Ellingson, L., Harris, M. A., ... & Wright, S. M. (2006). Using the six sigma process to implement the Centers for Disease Control and Prevention Guideline for Hand Hygiene in 4 intensive care units. *Journal of General Internal Medicine*, 21(2), S35-S42.
- 14 Zerr, D., Allpress, A., Heath, J., Bornemann, R. and Bennett, E., 2005. Decreasing Hospital-Associated Rotavirus Infection. *Pediatric Infectious Disease Journal*, 24(5), pp.397-403.
- 15 Bush, K., Mah, M.W., Meyers, G., Armstrong, P., Stoesz, J. and Strople, S., 2007. Going Dotty: A practical guide for installing new hand hygiene products. *American journal of infection control*, 35(10), pp.690-693.