

**PWYLLGOR IECHYD A DIOGELWCH
HEALTH AND SAFETY COMMITTEE**

DYDDIAD Y CYFARFOD: DATE OF MEETING:	09 July 2023
TEITL YR ADRODDIAD: TITLE OF REPORT:	Use of the product "DiffX" for disinfection of floors and surfaces in HDdUHB
CYFARWYDDWR ARWEINIOL: LEAD DIRECTOR:	Sharon Daniel, Director of Nursing, Quality & Patient Experience (Interim)
SWYDDOG ADRODD: REPORTING OFFICER:	Tim Harrison, Head of Health, Safety and Security Adam Springthorpe, Health and Safety Manager

Pwrpas yr Adroddiad (dewiswch fel yn addas)

Purpose of the Report (select as appropriate)

Er Sicrwydd/For Assurance

**ADRODDIAD SCAA
SBAR REPORT**

Sefyllfa / Situation

This paper is presented to the Health and Safety Committee to provide assurance with regard to the rationale for using the product "DiffX", following a number of concerns raised, particularly via our Trade Union Representatives. This paper considers the health and safety aspects of this product and the ongoing promotion of its safe and effective use.

Until recently, the chlorine-based product "Tristel Fuse for Surfaces" was used as the main disinfectant for hospital surfaces. A new product based on peracetic acid, DiffX, has now replaced Tristel Fuse due to its ability to inactivate a broader spectrum of organisms relevant to healthcare settings.

Cefndir / Background

The cleaning of surfaces requires the removal of surface contamination to a specified standard, often by means of physical wiping and chemical disinfection. In hospitals, disinfection is especially important for reducing the risk of Healthcare Acquired Infections (HAIs). The likelihood of infection can be improved by reducing the level of contamination; the impact of infection is reduced by removing organisms capable of causing serious infection through the use of suitable chemical agents.

A significant micro-organism in healthcare is *Clostridium difficile* (generally referred to as "C. diff"), a spore-forming bacterium that requires specific substances to achieve effective disinfection – these substances are referred to as "sporicidal". Chlorine-based agents are not effective against C. diff; DiffX is effective against C. diff and other organisms relevant to healthcare. However, the health and safety aspects of chemical disinfection products must be considered alongside their effectiveness.

Rationale for the replacement of Tristel Fuse for Surfaces with DiffX

Hywel Dda University Health Board (HDdUHB) Infection Prevention and Control (IP&C) conducted a review of cleaning processes in HDdUHB, and have summarised the reasons for

selecting a new disinfection product for the routine cleaning of hard surfaces, including floors, WCs and worktops:

- HDdUHB is under “interventions” by the Welsh Government in relation to C. diff infections.
- HDdUHB is therefore required to reduce the number of C. diff infections in patients.
- C. diff can persist in a dormant state for long periods; while sporicidal wipes are used in the vicinity of patients with known C. diff infection, the use of a sporicidal product for routine cleaning is an important tool in proactively managing C. diff in the Health Board.
- Tristel Fuse for Surfaces and other chlorine-based products are not effective against C. diff.
- Health and Safety Executive (HSE) have previously advised a transition away from chlorine-based disinfectants in healthcare, in part due to the long-term workplace exposure of staff.
- During a review of cleaning, IP&C found that some areas were cleaning with a detergent product then disinfecting with Tristel Fuse or Actichlor. Replacement with a one-step process would improve disinfection effectiveness and reduce pressure on staff.
- DiffX was found to meet the following requirements (summarised - not an exhaustive list):
 - Sporicidal (effective against C. diff) and a wide range of clinically-relevant organisms.
 - Short contact time – as with Tristel Fuse, it is applied to the floor and left to evaporate.
 - Unlike chlorine, it is not inactivated by visible soiling (organic residues).
 - Conforms to GB and EU biocide regulations.
 - Tested to appropriate BS EN standards for disinfection performance.
 - Reduced environmental impact (relative to chlorine) upon disposal of unused product.
 - Experience of application in other healthcare settings before use in HDdUHB.
 - Compatible with microfibre, other cleaning products and equipment/surface materials.

Health and Safety regulatory requirements

- The Health and Safety at Work etc. Act (1974) requires employers to ensure the health, safety, and wellbeing of employees (Section 2) so far as is reasonably practicable; the Management of Health and Safety at Work Regulations (1999) requires employers to make “suitable and sufficient” assessments of reasonably foreseeable hazards, and to provide suitable information and training.
- The Control of Substances Hazardous to Health Regulations 2002 (as amended) requires that exposure to hazardous substances is eliminated where possible; where this is not possible, the risk from hazardous substances must be managed.
- HDdUHB Health, Safety and Security (HS&S) team provided support with suitable and sufficient COSHH assessments to support the safe use of DiffX. The company behind DiffX was also able to offer good support for COSHH aspects, by providing suitable containers for storing the solid and liquid products (clearly marked with hazard warning labels and relevant safety information), training, and training materials with a suitable emphasis on the safe handling of the product.

Asesiad / Assessment

Transition from Tristel Fuse to DiffX

- IP&C team liaised with University College London - where DiffX had been used for over a decade - in order to learn from their experiences.
- IP&C team liaised with the company behind DiffX extensively prior to- and during- rollout.
- DiffX is used in a one-step process; it is applied to floor and surfaces in the same way as Tristel was previously; only the preparation of the product is different.
- Containers for both the raw product and the diluted product were provided, as well as signage.
- Training was provided to Hotel Services staff and supervisors; use of DiffX was initiated in Bronglais Hospital before introducing to the rest of the Health Board.

Health and safety aspects of the use of DiffX

- A Health and Safety Officer (COSHH specialist) has also liaised with the company behind DiffX, including conversations with the Managing Director.
- A Health and Safety Officer (COSHH specialist) has reviewed the components of DiffX, as a result of the product being patented (i.e. a full disclosure of the ingredients is available).
- Completion of COSHH assessments for the DiffX raw product and DiffX working solutions.
- The product has safety improvements over the use of Tristel Fuse, due to the way it is handled during preparation – provided manufacturer instructions are followed.
- Staff exposure is primarily due to inhalation of vapour post-application to the floor; risk of exposure during preparation if instructions are not followed.
- There is a risk of eye contact from splashing but it is unlikely to cause more harm than minor local irritation and discomfort. It is unlikely that skin contact with diluted product is harmful.

Reporting of adverse effects of the use of DiffX

- The working solutions are classified as non-hazardous for COSHH purposes, as the concentration of peracetic acid is below the threshold for hazard labelling.
- However, there have been five Datix incident reports where adverse effects involving the use of DiffX were reported – two are staff members experiencing an adverse reaction, and three involving contact with the product. The staff members experiencing adverse reactions are being provided with suitable ongoing support.
- There have been four confirmed Occupational Health referrals relating to the use of DiffX, at least two of which do not appear to have been reported through the Datix system.

Reports received via Trade Union / Staff Side Representatives

In addition to the above there are many anecdotal reports of adverse effects reported to the HS&S Team via the Trade Union / Staff Side Representatives, the description of some of which correlate with the cases either now on Datix (following encouragement to report) or known to Occupational Health. There are strong feelings amongst the representatives that the transition from Tristel to DiffX has not been handled and/or communicated well.

The HS&S team are liaising with the representatives to obtain more information, encourage reporting of incidents to allow for suitable and sufficient investigations, and provide ongoing support as required.

There are also reports via the representatives of sticky floors where DiffX has been used. The HS&S team have liaised with Hotel Services on this, and early tests of removing residual chemicals by scrubbing with plain water have proved positive.

Reassurance

This report was prepared to provide assurance to the Health Board that the introduction of DiffX is part of an overall proactive plan to reduce the level of C. diff infection rates in patients. The Health Board have had good support from the company producing this product, in terms of training and materials that support safe use of the product. The IP&C team decided to use DiffX after considering a range of products that were required to fulfil stringent requirements while also offering improved health and safety and environmental performance. The approach used with this product follows the Plan-Do-Check-Act cycle – it is therefore important to “close the loop” by reviewing its use now that DiffX is embedded in the Health Board, act on the learning that arises, and continue the cycle into the future.

However it is reasonable that the routine use of a chemical product would not be free from some adverse events, even when the COSHH aspects are well controlled. Indeed, many staff

have reported adverse reactions or sensitivity to chlorine products previously used by the Health Board. The new product, DiffX, is also intended to reduce the number of adverse effects due to the elimination of chlorine, a substance that can be an irritant and sensitiser. There have nonetheless been some adverse effects reported and these have been looked into as a priority.

Change management (Odour)

A difference in the use of DiffX compared with Tristel Fuse is the odour. Patients and staff alike have been accustomed to the odour of chlorine (it is also routinely used in home cleaning products) and often associate it with healthcare settings. The presence of chlorine odour in a space is used by many people as an indicator of hygiene. The change in odour from the use of DiffX may result in reduced confidence in the product despite it being a more effective disinfectant than its predecessor (when used as per manufacturer's instructions).

The four-step plan

A four-step plan has been proposed:

- General education of all staff with regard to the product, rationale for use, and relevant aspects (effectiveness, safety, and other benefits). This education will also take a wider look at cleaning and disinfection in general and look to dispel some of the myths around cleaning methods.
- Specific update training delivered to end-users: this is to ensure the product is being used consistently across the Health Board, in line with manufacturer instructions, and to ensure no new risks are being introduced.
- Specific training will be made available to Trade Union and Staff Side Representatives; additional support provided via staff-side forums.
- Promotion of the reporting of adverse events to facilitate the identification of causation and appropriate remedial measures.

If necessary, once this process has been completed, if a review finds that this product is no longer suitable, due consideration can be given to the finding of an alternative.

Argymhelliad / Recommendation

The Health and Safety Committee is requested to:

- **TAKE ASSURANCE** that the introduction of DiffX is part of an overall proactive plan to reduce the level of C. diff infection rates in patients, and that a four-step plan has been introduced to improve education around the new product and encourage the reporting of adverse events to allow for suitable and sufficient investigation into causation.

Amcanion: (rhaid cwblhau)	
Objectives: (must be completed)	
Committee ToR Reference: Cyfeirnod Cylch Gorchwyl y Pwyllgor:	2.1 Provide assurance around the UHB arrangements for ensuring the health, safety, welfare and security of all employees and of those who may be affected by work-related activities, such as patients, members of the public, volunteers, contractors etc.
Cyfeirnod Cofrestr Risg Datix a Sgôr Cyfredol: Datix Risk Register Reference and Score:	N/A
Parthau Ansawdd: Domains of Quality	1. Safe 3. Effective

Quality and Engagement Act (sharepoint.com)	
Galluogwyr Ansawdd: Enablers of Quality: Quality and Engagement Act (sharepoint.com)	6. All Apply
Amcanion Strategol y BIP: UHB Strategic Objectives:	1. Putting people at the heart of everything we do 4. The best health and wellbeing for our individuals, families and communities 6. Sustainable use of resources
Amcanion Cynllunio Planning Objectives	2a Staff health and wellbeing
Amcanion Llesiant BIP: UHB Well-being Objectives: Hyperlink to HDdUHB Well-being Objectives Annual Report 2021-2022	2. Develop a skilled and flexible workforce to meet the changing needs of the modern NHS

Gwybodaeth Ychwanegol: Further Information:	
Ar sail tystiolaeth: Evidence Base:	<ul style="list-style-type: none"> • H.M. Government: <u>Statutory Instrument (2002), Control of Substances Hazardous to Health. The Control of Substances Hazardous to Health Regulations 2002 as amended</u>, H.M. Stationary Office, London. • HSE (2013), <u>The Control of Substances Hazardous to Health Regulations 2002 as amended, Approved Code of Practice and Guidance L5 (sixth edition)</u>, HSE Books, Norwich, England • HSE (2017), <u>COSHH Essentials: Control Exposure to Chemicals – A Simple Control Banding Approach</u>, HSE Books, Norwich, England • HSE (2012) <u>Working with Substances Hazardous to Health, A brief guide to COSHH INDG136(rev5)</u>, HSE Books Sudbury, England. • HSE (2007) <u>EH40/2005- Occupational Exposure Limits, Table 1: List of approved workplace exposure limits (as consolidated with amendments October 2007)</u>, HSE, England
Rhestr Termiau: Glossary of Terms:	<p>COSHH - Control of substances hazardous to health IP&C – Infection, Prevention and Control HSE – Health & Safety Executive C.diff - Clostridiodes difficile HAI - Healthcare Acquired Infections</p>

Partïon / Pwyllgorau â ymgynhorwyd ymlaen llaw y Pwyllgor Ceisiadau Gofal Sylfaenol: Parties / Committees consulted prior to Health & Safety Committee Committee:	Trade Union Health & Safety Group Health & Safety Advisory Group Infection Prevention Strategic Steering Group
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Effaith: (rhaid cwblhau) Impact: (must be completed)	
Ariannol / Gwerth am Arian: Financial / Service:	Environmental assessments may need to be procured via external contractors.
Ansawdd / Gofal Claf: Quality / Patient Care:	There is a positive impact on staff and patient safety, health and wellbeing through compliance with health and safety regulations.
Gweithlu: Workforce:	Potential for adverse future staffing impacts if this legislation is not complied with as it relates to employee safety.
Risg: Risk:	Risk to health and safety management.
Cyfreithiol: Legal:	Potential for enforcement action including Improvement Notices/Prosecutions and claims due to breaches in legislation.
Enw Da: Reputational:	Potential for enforcement action including Improvement Notices/Prosecutions and claims due to breaches in legislation.
Gyfrinachedd: Privacy:	Not Applicable
Cydraddoldeb: Equality:	No evidence gathered to indicate a negative impact on any protected group/s. Evidence gathered indicates a positive impact on the protected characteristics of human rights and pregnancy / maternity.