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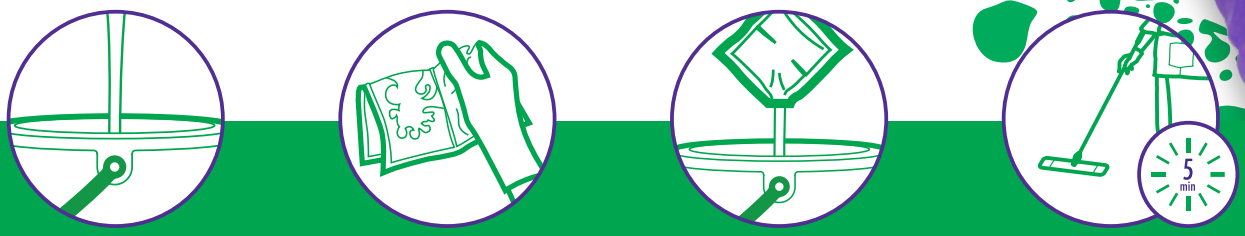

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Microbiological Efficacy Summary

Testing performed in accordance to European Standard EN 14885:2018

	ORGANISM	TEST NORM	TEST TYPE	CONDITIONS
SPORICIDAL	*Bacillus subtilis*	EN 13704	Suspension	Clean 1
MYCOBACTERICIDAL	*Mycobacterium terrae*	EN 14348	Suspension	Clean 1
	Mycobacterium avium			
VIRUCIDAL	Poliovirus Type 1	EN 14476	Suspension	Clean 1 and Dirty 1
	Adenovirus Type 5			
	Murine Norovirus			Clean 1
FUNGICIDAL/ YEASTICIDAL	*Candida albicans*	EN 13697	Surface	Clean 1
	Aspergillus brasiliensis	EN 13624	Suspension	
	Candida albicans			Clean 1 and Dirty 1
BACTERICIDAL	*Pseudomonas aeruginosa*	EN 13697	Surface	Clean 1
	Escherichia coli			
	Staphylococcus aureus	EN 14561	Carrier	
	Enterococcus hirae			
	Pseudomonas aeruginosa			
	Staphylococcus aureus	EN 13727	Suspension	Clean 1 and Dirty 1
	Enterococcus hirae			
	Pseudomonas aeruginosa			

	ORGANISM	TEST NORM	TEST TYPE	CONDITIONS
SPORES	*Clostridium difficile*	EN 13704	Suspension	Clean 1 and Dirty 1
	Bacillus subtilis	EN 14347		Not applicable
	Bacillus cereus			
VIRUSES	Feline calicivirus	EN 14476	Suspension	Dirty 1
FUNGI/YEAST	*Candida auris*	EN 14562	Carrier	Dirty 2
BACTERIA	Multi-drug resistant *Acinetobacter baumannii* (MDRAB)	EN 14561	Carrier	Clean 1
	Streptococcus pyogenes			
	Multi-drug resistant *Acinetobacter baumannii* (MDRAB)	EN 13727	Suspension	
	Vancomycin-resistant Enterococci (VRE) *Enterococcus faecium*			
	Carbapenemase-resistant Enterobacteriaceae (CRE) *Klebsiella pneumoniae*			
	Methicillin-resistant *Staphylococcus aureus* (MRSA)			Clean 1 and Dirty 1

Clean/Dirty Conditions Key:

Clean 1: 0.3 g/l bovine albumin - **Clean 2:** Aqua bidest

Dirty 1: 3g/l bovine albumin + 3g/l blood erythrocytes - **Dirty 2:** 5% fetal bovine serum

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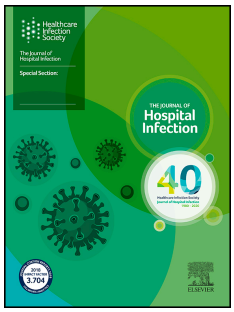

Do established infection prevention and control measures prevent spread of SARS-CoV-2 to the hospital environment beyond the patient room?

Jincy Jerry, Edel O'Regan, Louise O'Sullivan, Maureen Lynch, Deirdre Brady

PII: S0195-6701(20)30311-X

DOI: https://doi.org/10.1016/j.jhin.2020.06.026

Reference: YJHIN 6081

To appear in: *Journal of Hospital Infection*

Received Date: 12 June 2020

Accepted Date: 19 June 2020

Please cite this article as: Jerry J, O'Regan E, O'Sullivan L, Lynch M, Brady D, Do established infection prevention and control measures prevent spread of SARS-CoV-2 to the hospital environment beyond the patient room?, *Journal of Hospital Infection*, https://doi.org/10.1016/j.jhin.2020.06.026.

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Title

Do established infection prevention and control measures prevent spread of SARS-CoV-2 to the hospital environment beyond the patient room?

Jincy Jerry

Edel O'Regan

Louise O'Sullivan

Maureen Lynch

Deirdre Brady

Mater Misericordiae University Hospital

Eccles Street

Dublin 7

Ireland

Corresponding author:

Jincy Jerry

Infection Prevention and Control Department

Mater Misericordiae University Hospital

Eccles Street

Dublin 7

Email: jincyjerry@mater.ie

Telephone: +353 1 8034026

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Title

Do established infection prevention and control measures prevent spread of SARS-CoV-2 to the hospital environment beyond the patient room?

Summary

The role of the hospital environment in the transmission of infection is well described. With an emerging infection whose mode of transmission is under investigation, strict infection prevention and control measures, including patient isolation, hand hygiene, personal protective equipment that is doffed on exiting the patient room, and environmental cleaning should be implemented to prevent spread. Environmental testing demonstrated that COVID-19 patients contaminated the patient area (11/26, 42.3% of tests) but contamination of general ward areas was minimal (1/30, 3%) and the virus was detected after cleaning on one item only (1/25, 4%) which was noted to be in disrepair.

Keywords

COVID, Transmission, Prevention, Environment, Contamination

Introduction

Knowledge about the transmission of SARS-CoV2, the causative agent of COVID-19 is increasing. Early reports from China indicated that transmission occurred through contact and respiratory droplet spread.[1] Transmission has occurred in the community as well as in healthcare settings. Infection Prevention and Control (IPC) measures have been adopted globally to prevent spread within hospitals. Current guidance recommends hand hygiene, personal protective equipment (PPE) and environmental decontamination [2,3,4]. There have been studies examining the contamination of environmental surfaces with SARS-CoV-2 virus [5] and modelling the potential risk for the transmission of COVID-19 in healthcare using a surrogate virus [6]. Best practice in the use of single room accommodation and PPE

for preventing spread of infection is to don PPE on entering the room and doff on exiting [7] with hand hygiene performed at relevant times according to the WHO 5 moments for hand hygiene. In addition environmental cleaning reduces the risk to staff and future patients.

The Mater Misericordiae University Hospital (MMUH), Dublin, is a 600 bed acute hospital and tertiary referral centre for multiple medical and surgical specialties including quaternary referral service for extracorporeal life support (ECLS) in the intensive care unit. The hospital also houses the national isolation unit (NIU) for high consequence infectious diseases (HCID). Before the first case of COVID-19 was identified in Ireland, the hospital began preparing by identifying suitable infection prevention and control measures such as preferred areas for patient isolation or cohorting, levels of PPE and training in its use as well as new cleaning and disinfection agents which had been under trial at the hospital in the second half of 2019 prior to COVID-19 emerging. The hospital experienced a high proportion of the Irish cases of COVID-19 during the peak of transmission in the community in this country and continues to have acute cases presenting and occasional sporadic outbreaks. The total number of patients with COVID-19 treated as inpatients at the hospital up to May 31st has been 803.

Patients were placed in single en-suite rooms while undergoing assessment for COVID-19 and moved on into 6-bed cohort rooms on specific wards once a laboratory confirmation of the diagnosis was made. Rooms were cleaned with a chlorine dioxide agent (Tristel FUSE®) once daily and again after discharge with a terminal clean using chlorine dioxide followed by UVC disinfection (SteriPro®). Personal protective equipment including filtering face piece (FFP) 2 or FFP 3 masks, eye protection in the form of goggles or visors, gloves and a long sleeved fluid repellent gown was recommended. In each ward an area was designated as the donning areas for staff confidence. PPE was doffed on leaving the patient room. PPE was not worn while working in the general ward areas e.g. at nurses' stations. As the number of COVID-19 cases increased throughout Ireland and internationally, the demand for PPE increased. In order to preserve its use some centres moved to the wearing of PPE throughout ward areas, within and outside of

patient rooms, doffing only on exiting the ward in accordance with WHO interim guidance [8]. We theorised that this could increase the risk of spread to healthcare workers due to widespread contamination of ward areas and inadvertent breaches in practice in relation to PPE such that healthcare staff might self-inoculate with SARS-CoV-2 once outside of the patient room in contaminated PPE.

We undertook this study to demonstrate that the infectious COVID-19 patient readily contaminates the patient area but that the combination of infection prevention and control measures introduced including hand hygiene, doffing PPE on exiting the patient room and enhanced environmental cleaning and disinfection prevented contamination of the shared working areas outside of patient rooms such that it was safe to work in these areas without donning PPE.

Method

Environmental samples were retrieved by IPC Clinical Nurse Specialists (IPC CNS) from clinical areas where COVID-19 patients were treated including the Emergency Department (ED), Intensive Care Unit (ICU), High Dependency Unit (HDU) and six medical wards, one of which was the NIU. Samples were collected between 5th May and 15th May 2020, during which time the minimum number of infected patients in the hospital ranged from 73 to 107, with between 7 and 11 in ICU, two on ECLS.

Surface and air sampling was performed. Surface sampling was by swab of the area with a COPAN UTM-RT transport medium for viruses (Copan, Italia), similar to that used for clinical sampling of the patient airway. Surface samples were obtained using flocked swabs and transported to the laboratory in universal viral transport media (VTM) within 1 - 2 hours of collection. Samples were refrigerated until testing was performed. To sample the air, an empty petri dish containing 3ml of viral transport medium (VTM) decanted from a clinical collection device was placed into the air sampler SAS Super ISO 100®. The VTM was subsequently pipetted out and replaced back into the collection device for submission to the laboratory for analysis.

Surfaces sampled were from three distinct categories of location (i) a patient room housing a laboratory confirmed COVID-19 patient, (ii) an empty patient room following terminal cleaning and ultraviolet-C (UVC) decontamination that was carried out after the discharge of a laboratory confirmed COVID-19 case and (iii) the nurses' station of each of the wards with COVID-19 patients. Sites of swabs were chosen as frequently touched areas by either the patient or staff as appropriate (Table 1).

Timing of surface swab samples was determined by passage of time from most recent clean. COVID-19 patient rooms are cleaned once per day and nurses' station areas twice. For swabs of these areas, a minimum time of 4 hours was allowed to elapse before samples were taken. Swabs of empty terminally cleaned and disinfected patient rooms were taken before the admission of a new patient. For cleaning of patient and ward areas, a chlorine dioxide agent was used (Tristel FUSE®). For a terminal clean after discharge of a COVID-19 patient chlorine dioxide cleaning was followed by UVC decontamination using the SteriPro® UVC disinfection robot.

Air sampling was performed in single patient rooms housing COVID-19 patients both intubated and non-intubated, in multi-bed bays accommodating COVID-19 patients on respiratory treatments deemed likely to generate aerosols e.g. non-invasive ventilation, and in the general corridor outside the rooms of COVID-19 patients. (Table I)

Surface and air samples were analysed for the presence of SARS-CoV-2 RNA by molecular testing using the Cepheid Xpert Xpress SARS-CoV-2 assay (Cepheid AB, Solna, Sweden) under Emergency Use Authorization. The Xpert test platform integrates specimen processing, nucleic acid extraction, reverse transcriptase polymerase chain reaction amplification of SARS-CoV-2 RNA, and amplicon detection in a single cartridge. The assay amplifies 2 nucleic acid targets, namely N2 (nucleocapsid) and E (envelope) wherein N2 is more specific for SARS-CoV-2.

Results and Discussion

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Eighty-one surface swab samples were retrieved for the purposes of the study, 26 from within COVID-19 patient rooms, 25 from COVID-19 patient rooms after discharge and following completion of terminal cleaning and disinfection with additional UVC decontamination and 30 from nurses' stations.

Testing of the patient room indicated that the patient easily contaminated the area, with almost half of the tests detecting SARS-CoV-2 (11/26, 42.3%). These areas may have been contaminated by coughing, as they were all in close proximity to the patient's bed or chair, or by spread from the patient's contaminated hands. The remote controller for the bed in two rooms was the most frequently positive site (2/2, 100%). These were located in rooms in the ICU, where the remote is an area frequently handled by staff members while caring for the patient. The bed side rail was the second most frequent (4/6, 66.7%), another area touched frequently by both patient and staff. The handle of the en-suite bathroom door was not found to be contaminated in any of 4 en-suite rooms tested. This may be due to the fact that it was located more than two metres from the patient or that the patient was too unwell to mobilise to use the bathroom.

There was just one positive test among the samples taken from cleaned rooms. One call bell was found to be contaminated but was also noted to be in disrepair and unlikely to be easily cleaned. In addition, its placement in the room was beyond the reach of the UVC. Replacement and alternative location was immediately recommended. Subsequently all wards were instructed to review equipment condition and cleaning protocols. One telephone at a nurses' station tested positive for SARS-CoV-2 whereas all desk and computer keyboard samples returned negative results. This might suggest that contamination arose due to the respiratory droplets of an infected staff member rather than transfer of patient virus from the contaminated patient room.

The total number of air samples taken was 16, 8 from patient rooms, 8 from corridors of COVID-19 wards. 1 control sample of VTM was reserved as a negative control sample for laboratory testing. None of the air samples taken yielded positive results. While this might reassure us that the virus was not airborne, the absence of

a positive control such as a positive result even in near patient testing prevents us from drawing any firm conclusions as we could not validate our sampling method.

Conclusion

The hospital environment has long been identified as a source of transmission of other infections within hospitals [9]. Placing patients in accommodation isolated from those without infection, hand hygiene, wearing of appropriate personal protective equipment and thorough environmental cleaning and disinfection have all been recognised as important interventions to prevent and control the spread of infections in hospital. It follows that the same measures be put in place to prevent spread of COVID-19. This study demonstrates that these measures effectively prevented spread of SARS-CoV-2 from contaminated patient rooms to general ward areas. This will inform future management of COVID-19 in the event of resurgence as well as other emerging infectious diseases.

Acknowledgements

The authors wish to acknowledge the support of other members of the departments of Infection Prevention and Control and Clinical Microbiology in conducting the study.

Conflict of interest statement

None declared.

Funding sources

None.

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Table I. Sites of swabs / air samples and results

Sample location	Grand Total	Detected	NOT DETECTED
COVID-19 patient's room			
Bed rail	6	4	2
Bed side table	6	3	3
Call bell	4	1	3
Patient chair-arm	4	1	3
Remote for bed	2	2	0
Toilet Door handle	4	0	4
Total	**26**	**11**	**15**
Nurses Station COVID-19 cohort ward			
Desk	10	0	10
Keyboard	10	0	10
Telephone	10	1	9
Total	**30**	**1**	**29**
Patient room post terminal clean			
Bed rail	5	0	5
Bed side table	5	0	5
Call bell	5	1	4
Patient chair-arm	5	0	5
Toilet Door handle	5	0	5
Total	**25**	**1**	**24**
Air sample - Control			
Control	1	0	1
Total	**1**	0	**1**
Air sample COVID-19 Patient room			
Inside patient room	2	0	2
Inside patient room Multibed bay	3	0	3
Near patient	3	0	3
Total	**8**	0	**8**
Air sample COVID-19 cohort ward			
Anteroom	1	0	1
Corridor	5	0	5
Nurse Station	2	0	2
Total	**8**	0	**8**
Grand Total	**98**	**13**	**85**

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Striking success: 365 days C. diff. free

UNIVERSITY HOSPITALS COVENTRY AND WARWICKSHIRE

Celebrating 365 days free from C. diff.

Like many in the NHS, University Hospitals Coventry and Warwickshire (UHCW) NHS Trust has faced significant infection control challenges in recent years, with apparently high occurrences of Clostridium difficile and Norovirus infection. However, by interrogating their internal data closely, working with infection control company Tristel and devising truly creative campaigns, the infection control team at Coventry has achieved striking success.

In January 2013, University Hospitals Coventry and Warwickshire (UHCW) NHS Trust was nearing its allowed limit for cases of C. diff.. The issue was highlighted in the Trust's annual report for 2012-2013 as a 'red' area for underperformance. However, when Matron for Infection Prevention and Control Kate Prevc interrogated her hospital's data more closely, she made a startling discovery.

"We had already seen from data associated with Norovirus infection that nurses were often not familiar with the basics of bowel management," explained Kate. "Patients were said to be symptomatic of Norovirus when in fact they were probably constipated or experiencing diarrhoea that was normal for them. When we looked at our evidence for cases of C. diff. including data on symptoms and feedback from wards, we quickly saw that the same thing was happening. Twenty-six out of the 76 patients reported to have C. diff. were actually asymptomatic and these were probably instances of colonisation, where numbers of C. diff. bacteria exist naturally in the gut. So these figures were adversely affecting our targets, quite unfairly, and were actually making people worried about an apparent C. diff. problem here, when in fact there wasn't a problem. We knew that there needed to be a change."

A New Approach

Kate and her team instigated a whole new approach for infection prevention. "Historically the infection control team has been seen as enforcers, walking into busy wards, pointing out issues and demanding action within a short time frame. People were concerned about getting into trouble and weren't always telling us about problems until they were quite a long way down the line. That was never how any of us wanted to work. We decided to create an on-going programme, addressing our challenges bit by bit. This would involve making intelligent use of data to address issues, and changing perceptions of the infection control team and our relationship with the wards. Nursing is a specialised profession, where you constantly learn and gain experience. Nurses had to feel empowered enough to use their skills and knowledge, confident that they have the backing of the infection control team."

Subsequently, the team began a number of initiatives, as Infection Prevention and Control Nurse Fiona Wells explained. "Our first campaign was called 'Get Stool Smart', where we developed an algorithm for nurses to follow when encountering loose bowel movements in patients. We launched this campaign on Valentine's Day, by sending a card containing the algorithm and a red heart balloon to every ward in the Trust." 'WIPE Wednesday' was a second initiative, centring on the WIPE acronym: Wash your hands, Isolate promptly, Prudent antibiotic prescribing and Environmental cleaning. Every Wednesday, nurses around the trust wear WIPE badges as a reminder.

The 100 Day Challenge

Both 'Get Stool Smart' and 'WIPE Wednesday' are linked to the infection control team's campaign against C.

diff., called 100 days. "The 100 days campaign was simple; as wards counted the number of days they went without a case of C. diff., with the aim of every ward in the Trust reaching 100. Our team made regular visits to the wards and followed up on all samples sent for testing. Whenever a ward reached 100 days, they received a voucher to spend as they liked and we visited with sweets and chocolate. After 100 days the next target was 200 days, and then the full 365. We're delighted that every ward has achieved 100 days in the past year, 95% have reached 200 days and 14 wards have achieved a year clear."

Working With Tristel

The infection prevention and control team at Coventry has worked closely with Tristel, who provide infection control solutions based on their proprietary Chlorine dioxide formulation. For surface disinfection, nurses at Coventry use Tristel Jet, a trigger spray gel, and Tristel Fuse, a sporicidal disinfectant for larger surface areas. Both products are rapidly effective against bacteria, fungi, viruses, mycobacteria and most crucially, spores. Kate explained, "Tristel is key to the 'E' in WIPE, Environmental cleaning. When I first started in this role, I decided that it was important for us to move away from the historical use of chlorine for a number of reasons. Chlorine dioxide seemed like the best solution. It is incredibly effective, and without doubt has had a huge impact on our infection figures. Chlorine dioxide is a cell destroyer, which means that there is no chance of any micro-organism adapting, and in the case of any outbreak we simply use it more often. It is also non-corrosive, so doesn't degrade equipment over time. Since changing to Chlorine dioxide we've had no cases of occupational asthma, which is often associated with chlorine."

Kate continued, "We have a very close relationship with Tristel and our sales representative Alan Cooney. In a trust of this size with 7,000 employees, support is very important, and Tristel played a central role in training our staff." Tristel worked closely with the infection control team at Coventry to agree processes for using their products. Staff were encouraged to take ownership of the Tristel Fuse solution that they prepared from the concentrate, which can be kept for up to 24 hours; Tristel provided pens to enable nurses to write expiry times on containers for maximum compliance, and changed the containers supplied following feedback from the team at Coventry. Kate said, "Tristel have been so responsive, and worked with us to meet our needs throughout this process." Fiona added, "What's crucial is that nurses like using Tristel products. Nurses are particularly fond of Fuse, which comes in a burstable sachet that is simply diluted to a single concentration. Nurses can make up a large container of solution and get stuck in to cleaning."

Massive Impact

The impact of the programme undertaken by the infection control team has been huge. Fiona said, "We've managed to bring about a complete culture change. Nurses are coming to us with their problems and asking for our insight. Teams feel empowered and are taking ownership of their cleaning. Members of our infection control team are even being invited out to ward Christmas parties, which was completely unheard of before. Overall, the enthusiasm and positive feedback that we've had has been enormous." And the infection control statistics have also benefited. Kate explained, "Our C. diff. results were not the focus of this campaign, but the improvement has been a welcome by-product. Thanks to 'Get Stool Smart', and our work with Tristel, our current number of cases is 19 (Oct) since March 2013, which is far better than our end of October trajectory of 33. By contrast, at this time last year we had already breached our monthly targets and had 44 recorded cases in the trust."

The team's work at Coventry has also attracted attention from outside the Trust. "Ever since we launched our Twitter account, other Trusts have shown interest in our initiatives and the results we've achieved. Tristel have also helped to form a link between hospitals, who have been asking about our campaigns and how they can implement them. Other Trusts have mirrored our 100 days campaign, which has had a great impact on motivation in their hospitals which has been lovely to see, and twelve Trusts have been in touch about our 'Get Stool Smart' algorithm." The team's work has also attracted several award wins, including team of the year 2013 from the Infection Control Society (IPS).

Onwards and Upwards

Looking forward, the team has lots of ideas for how to continue to improve infection control practice and keep morale high. Fiona said, "Our next focus will be Houdini, an algorithm for checking the length of time that catheters are left in situ. We've also launched our 'weakest link' campaign, to increase awareness of Norovirus amongst visitors to the hospital. Our team meetings are so full of ideas now, and everyone is really exploring their creativity." Kate said, "Infection control has a terrible history of doing what it's always done. We've challenged existing practice at this hospital by using evidence to implement reasonable change and altering perceptions around infection control. We're looking forward to continuing to work with Tristel and our wards over the coming months."

Contributors

Kate Prevc, Matron for Infection Prevention and Control: Kate has worked in this role for two and a half years, following six years in infection control. She has a strong project management background and has previously worked in orthopaedics and cardiology.
Fiona Wells, Infection Prevention and Control Nurse: Fiona has worked in infection control for 18 months, having previously worked in renal services, including surgery, medicine and haemodialysis.

The launch of Get Stool Smart on 14 February 2013.

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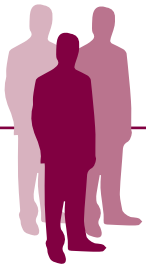

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THE RISK OF INFECTION IN EMERGENCY MEDICINE

Patients seeking evaluation and awaiting treatment in emergency settings are not only able to spread communicable infectious diseases to healthcare professionals and other patients, but are also at risk of acquiring new infections (hospital acquired infections (HAIs)) associated with the care they receive[1].

Elderly patients who visit the emergency department are three times more likely to acquire an acute infection[2].

PREVENTION OF INFECTION TRANSMISSION IN EMERGENCY SETTINGS

Preventing the transmission of infectious microorganisms in emergency settings is vital in reducing the number of HAIs.

Decontamination of surfaces and medical equipment must be routinely performed in between patients to help prevent cross-infections amongst patients and healthcare professionals.

Patients infected with microorganisms such as MRSA, MDRAB, CRE, VRE and Coronaviruses can transfer these pathogens to sites in their immediate vicinity such as mattresses, bedpans, IV poles, guard rails, overbed tables, blood pressure cuffs, and the floor[1]. Decontamination involves the cleaning of any heavy soiling (e.g. blood spills) and disinfection with the use of a high-level disinfectant such as JET and FUSE.

Future patients are also at risk when hospitalised in a room previously occupied by a patient infected with drug resistant microorganisms due to environmental contamination[1].

Using good hand hygiene etiquette routinely helps disrupt the transmission of infections and the spread of microorganisms from one area or person to another[1]. Hand hygiene protocols should always be followed, especially when a healthcare professional enters the vicinity of an infected patient[1].

Always adhere to standard precautions and use personal protective equipment (PPE) such as gloves, protective gowns, masks, and eyewear. The implementation of reasonable healthcare safety precautions and infection control can minimise transmission of most contact-related infections and infectious microorganisms in emergency medicine[3].

An estimated 300,000 NHS patients per year acquire healthcare associated infections[4].

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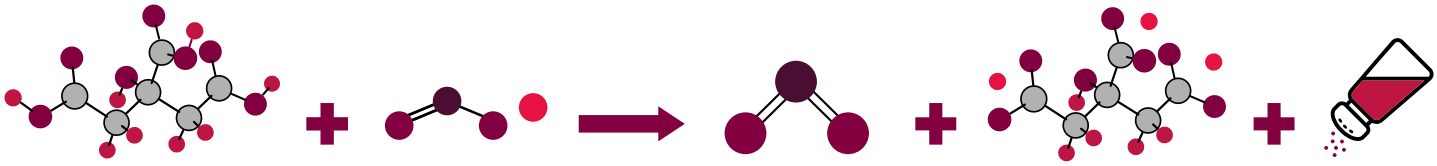
THE POWER OF CHLORINE DIOXIDE CHEMISTRY



CITRIC ACID ($C_6H_8O_7$) + SODIUM CHLORITE ($NaClO_2$) → CHLORINE DIOXIDE (ClO_2) + SODIUM CITRATE ($Na_3C_6H_5O_7$) + SALT (NaCl)

Chlorine Dioxide (ClO_2) achieves its potent biocidal effect through oxidation. ClO_2 oxidises lipids and proteins present in cell membranes, leading to a loss in membrane integrity and ultimately cell death. ClO_2 can also penetrate cells and degrade nucleic acids via an oxidative pathway. Similar mechanisms are responsible for the ability of ClO_2 to inactivate viral particles. ClO_2 is proven effective in preventing biofilm build-up and in removing it from surfaces.

High-level disinfection is achieved within short contact times, enabling a quick turnaround of medical devices and surfaces.

- EFFECTIVE IN SHORT CONTACT TIMES.
- DOSED AT POINT OF USE.
- SPORICIDAL, VIRUCIDAL, MYCOBACTERICIDAL, YEASTICIDAL AND BACTERICIDAL ACTIVITY.
- ONE CONCENTRATION FOR ALL EFFICACY.
- GOOD SAFETY PROFILE.
- HANDY FOR PORTABLE TRAVEL.

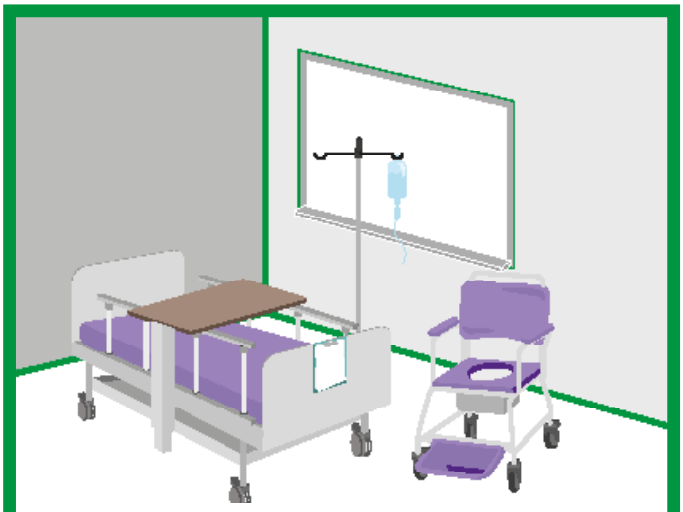
THE PRODUCTS POWERED BY CHLORINE DIOXIDE

JET*: HIGH TOUCH AREAS

SUCH AS NEAR THE PATIENT AND EMERGENCY VEHICLES

JET is a powerful sporicidal disinfectant for use on near patient surfaces, providing the best safeguard for patients and staff wherever risks of infection are highest. Each bottle of JET produces 570 ready-to-use doses of foam which can be used with any spreader. JET achieves high-level disinfection, including sporicidal efficacy and virucidal efficacy against emerging viruses like SARS-CoV-2**, in one minute.

1 min



FUSE*: LARGE SURFACE AREAS

SUCH AS FLOORS AND WALLS IN THE EMERGENCY ROOM

FUSE is ideal for the high-level disinfection of large surface areas, including walls and floors. Each FUSE sachet produces five litres of working solution at one concentration, with one contact time to destroy a wide range of microorganisms. FUSE achieves high-level disinfection, including sporicidal efficacy against emerging viruses like SARS-CoV-2**, in five minutes.

5 min

cache™

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*FUSE refers to Tristel Fuse for Surfaces. JET refers to JET (Cache). **Based on EN14476 Virucidal activity. Use biocides safely. Always read the label and product information before use.

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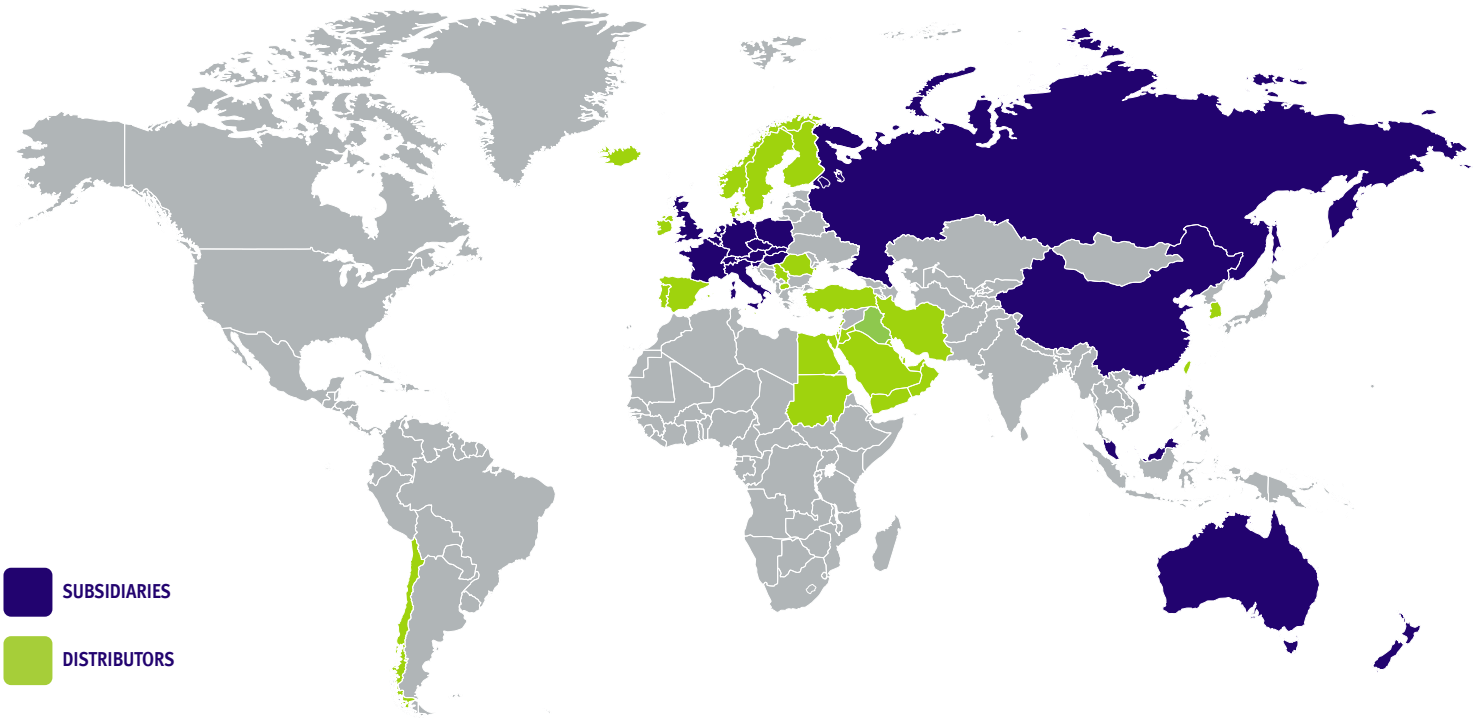

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CONTACT US...

Please contact your local Tristel representative

AUSTRALIA
Tristel Pty Ltd
T: 1300 680 898
E: mail-au@tristel.com
W: www.tristel.com

BELGIUM & LUXEMBOURG
Tristel NV/SA
T: +32 (0)3 889 26 40
E: belgium@tristel.com
W: www.tristel.com

CHINA
Tristel Medical Equipment (Shanghai) Ltd
T: +86 (21)8016 2555
E: 888@tristel.com

FRANCE
Tristel SaS
T: 03 66 88 01 84
E: france@tristel.com
W: www.tristel.com

GERMANY, AUSTRIA, CZECH REPUBLIC, HUNGARY, SLOVAKIA & SLOVENIA
Tristel GmbH
T: +49 (0)30 54844226
E: vertrieb@tristel.com
W: www.tristel.com

HONG KONG
Tristel Asia Ltd
T: +852 2895 6968
E: customerservicehk@tristel.com
W: www.tristel.com

ITALY
Tristel Italia Srl
T: +39 (0)2 8352 0915
E: info@tristel.it
W: www.tristel.com

MALAYSIA
Tristel Malaysia
E: tristelmalaysia@tristel.com
W: www.tristel.com

NEW ZEALAND
Tristel New Zealand Ltd
T: +64 (0) 7 5771560
E: mail-nz@tristel.com
W: www.tristel.com

POLAND
Tristel Sp z o. o.
T: +48 22 4810516
E: polska@tristel.com
W: www.tristel.com

RUSSIA
Tristel International Ltd
T: +7 (495) 766 87 73
E: info@tristelrussia.ru
W: www.tristel.com

SWITZERLAND
Tristel AG
T: +41 715670658
E: schweiz@tristel.com
W: www.tristel.com

THE NETHERLANDS
Tristel B.V
T: 020 808 51 34
E: nederland@tristel.com
W: www.tristel.com

UNITED KINGDOM
Tristel Solutions Ltd (HQ)
T: +44 (0)1638 721500
E: mail@tristel.com
W: www.tristel.com

JORDAN KUWAIT, LEBANON, OMAN, QATAR, SUDAN, SYRIA, UNITED ARAB EMIRATES & YEMEN
Fal Care FZE
E: info@falcare.com
W: www.falcare.com

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TechSalud
T: +56 (2) 232 15 064
W: www.techsalud.cl

DENMARK
ViCare Medical A/S
T: +45 45 82 33 66
W: www.vicare-medical.dk

FINLAND
Otoplug
T: +35 840 501 3090
W: www.otoplug.fi

ICELAND
Icepharma / Parlogis
T: +354 540 8000
W: www.icepharma.is

ISRAEL
Sachar Medical
T: +972 544 513 925
E: sachar.medtech@gmail.com

MACAU
Keen Med Company Limited
T: +853 2872 1134
E: librasam@keen-med.com

MACEDONIA
Biomedika
T: +389 2 30 90 658
W: www.bmgrp.mk

MALTA
Associated Equipment
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NORTHERN IRELAND
SMC
T: +44 (0) 2890 410 136
W: www.smcni.com

NORWAY
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W: www.vingmed-as.no

PORTUGAL
Teprel Equipamentos
T: +351 229 999880
W: www.teprel.com

REPUBLIC OF IRELAND
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T: +353 1295 2501
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ROMANIA
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W: www.t-med.ro

SAUDI ARABIA
Fal Care Trading Est.
E: info@falcare.com
W: www.falcare.com

SERBIA
INEL d.o.o.
T: +381 (0)21 423 710
W: www.inel.rs

SINGAPORE
E.O Medical
T: +65 6100 5060
W: www.eo.com.sg

SOUTH KOREA
HP & C Limited
T: +82 2 553 7895
W: www.ihpnc.co.kr

SPAIN
Vesismin
T: +34 934 09 53 01
W: www.vesismin.com

SWEDEN
Vingmed AB
T: +46 8 583 593 00
W: www.vingmed.se

TAIWAN
Meta-Medic Co., Ltd
T: +886 2 2369 8172
E: product@mediunion.com.tw

TURKEY
Yefe Dis Ticaret Ltd. Sti.
T: +90 532 275 1133
W: www.yefe.com.tr