Infection Prevention and Control Team Newsletter

NHS North East London

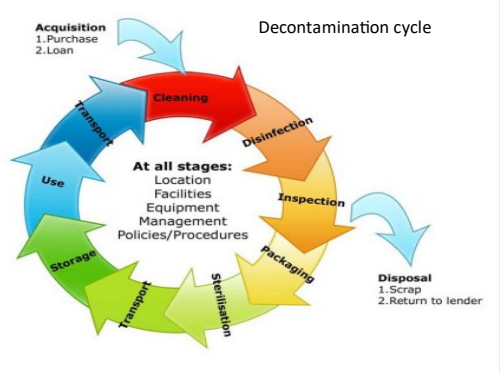
May 2024

Decontamination

What is decontamination?

Decontamination is a combination of processes that removes or destroys contamination so that infectious agents (bugs) or other contaminants don't to initiate infection, or other harmful response. Decontamination and disinfection are essential in care settings **to protect patients and control healthcare-acquired infections (HAIs)**.

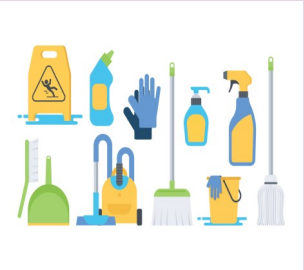
The terms *decontamination, cleaning*, and *disinfection* are often used synonymously, despite having different meanings, which can result in misunderstandings within different manufacturing and clinical environments. It is important to understand the correct definition of all decontamination processes. Cleaning, disinfection and sterilisation are all decontamination processes.



Cleaning: uses 'fluid' – usually detergent and water, and 'friction' – the mechanical or physical removal of dirt, debris, blood, and bodily fluids. With cleaning micro-organisms are removed rather then killed ; Example of cleaning: Routine cleaning with detergent or soap and water that removes dirt and grime from surfaces (ex: floors, walls, carpet, windows). Good cleaning leaves a surface or equipment visibly clean. This alone may be enough for 'low risk' environments; Cleaning is needed to ensure effective disinfection.

Disinfection: eliminate or reduce harmful micro-organisms (bugs) from objects and surfaces. For example: the use of chlorine based disinfectants in healthcare environments to disinfect a commode.

Sterilisation: The process of killing all bugs . Sterilisation is used only for high-risk items, i.e. surgical instruments. Examples: Steam under pressure, dry heat, ethylene oxide (ETO) gas, hydrogen peroxide gas plasma, vaporized hydrogen peroxide, and liquid chemicals are the principal sterilizing agents used in health care facilities. An example of sterilisation is the use of heat or chemicals to sterilise surgical equipment.



Contact time :A disinfectant must be in contact with a surface for the correct time and the surface needs to remain wet for that time. Staff should know the contact times for the disinfectants in use locally (see products manufacture guidelines).

Direction of cleaning: To minimise recontamination of an area and transfer of micro-organisms, staff should clean from: • top to bottom • clean to dirty.

Manual cleaning: surfaces should be cleaned using an 'S' shape motion.

Frequent touch points: Frequent touch points in clinical areas, such as door handles, call bells, light switches, bedtables, etc should be cleaned more frequently than other surfaces.

Other important facts

→Bugs can be transferred from the surfaces on cleaning cloths and wipes as well as hands. Care should be taken to avoid cross contamination.

→It is important that the correct amount of disinfectant and water are used. If the solution is not strong enough, the micro-organisms will not be killed, too strong solutions, and equipment or surfaces can be damaged.

→If a chlorine-based disinfectant solution is used it should be at a dilution of 1,000 parts per million (ppm) unless the item is contaminated with blood and/or blood stained body fluids when a dilution of 10,000 ppm should be used.

→a new solution of chlorine-base disinfectant should be made each day.

→When using disinfectant products, always wear disposable apron and gloves and, if indicated, facial protection.

→With all substances, COSHH (Care of Substances Hazardous to Health) guidance and manufacturer's instructions must be followed in order to achieve safe practice.

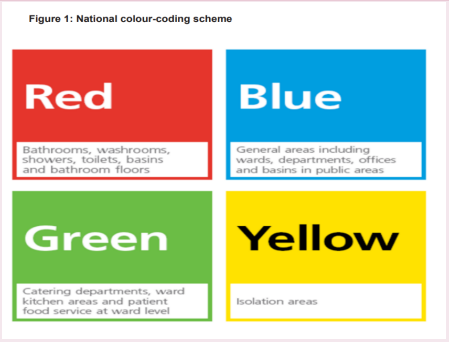
→Do not use a chlorine-based disinfectant solution directly on urine as toxic fumes will be released.

→**Enhanced cleaning** Organisations should recognise as part of their planning process that events may increase the resources their cleaning service requires, e.g. to manage IPC cleaning and during outbreaks. Cleaning planning should clearly indicate the specific extra steps required before, during and after a full clean in such circumstances.

National colour-coding scheme widely applied throughout healthcare organisations to reduce cross-contamination risk between different types of area (see figure 1)

Sterilisation It is unlikely that invasive reusable medical devices, e.g. surgical instruments, would be used in a care home settings. Decontamination must be performed at an accredited Decontamination Services Facility. Alternatively, single use disposable equipment can be used.

Disinfectants should be used for equipment that has been in contact with non-intact skin, mucous membranes, body fluids or a resident with a known or suspected infection. Disinfectants can be in the form of a wipe, e.g. 70% alcohol, or as solution made from chlorine releasing tablets, liquids or granules, e.g. Milton.



→At minimum, the disinfectant product should be bactericidal and virucidal.

→ A disinfectant will not be effective if there is visible dirt present, e.g. urine, blood. Therefore, if the disinfectant does not contain a detergent, the equipment should be cleaned before a disinfectant is used.

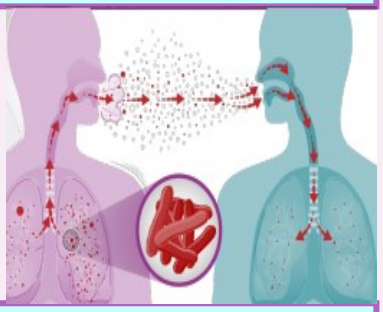
Picture credit : B0271-national-standards-of-healthcare-cleanliness-2021.pdf (england.nhs.uk) The S-shaped method for cleaning a flat surface. Photo credit: Gama... | Download Scientific Diagram (researchgate.net)

Tuberculosis (TB)

What is Tuberculosis ? Tuberculosis (TB) is an infectious disease that most often affects the lungs and is caused by a type of bacteria. It spreads through the air when infected people cough, sneeze or spit.

Tuberculosis is preventable and curable.

Incubation period : The incubation period is normally 2 to 10 weeks.



Common Symptoms of TB Include :

- ◊ a cough that lasts more than 3 weeks – you may cough up mucus (phlegm) or mucus with blood in it
- ◊ feeling tired or exhausted
- ◊ a high temperature or night sweats
- ◊ loss of appetite
- ◊ weight loss
- ◊ feeling generally unwell

If TB has spread to another part of your body such as your glands (lymph nodes), bones or brain, you may also have

- ♦ swollen glands
- ♦ body aches and pains
- ♦ swollen joints or ankles
- ♦ tummy or pelvic pain
- ♦ Constipation
- ♦ a headache
- ♦ feeling confused
- ♦ a stiff neck

How TB Spreads ?

⇒ TB bacteria spread through the air from one person to another.

⇒ When a person with TB disease of the lungs or throat coughs, speaks, or sings, TB bacteria can get into the air. People nearby may breathe in these bacteria and become infected.

⇒ When a person breathes in TB bacteria, the bacteria can settle in the lungs and begin to grow. From there, they can move through the blood to other parts of the body, such as the kidney, spine, and brain.

⇒ People with TB disease are most likely to spread it to people they spend time with every day. This includes family members, friends, and coworkers or school-mates.

Some people are considered more vulnerable to TB infection and its associated complications including:

- children younger than 5 years of age
- individuals with weakened immune systems (those with HIV/AIDS, patients on chemotherapy, corticosteroids, etc)
- homeless persons
- intravenous drug users (IVDUs)

Not everyone infected with TB germs becomes sick. As a result, two TB-related conditions exist:

A Person With Inactive TB (Latent TB)

- ♦ Has a small amount of TB germs in their body that are alive but inactive.
- ♦ Has no symptoms and does not feel sick.
- ♦ Cannot spread TB germs to others.
- ♦ Usually has a positive TB blood test or TB skin test indicating TB infection.
- ♦ Has a normal chest x-ray and a negative sputum smear.
- ♦ Needs treatment for inactive TB to prevent active TB

A Person With Active TB Disease

- ♦ Has a large amount of active TB germs in their body.
- ♦ Has symptoms and feels sick.
- ♦ May spread TB germs to others.
- ♦ Usually has a positive TB blood test or TB skin test indicating TB infection.
- ♦ May have an abnormal chest x-ray, or positive sputum smear or culture.
- ♦ Needs treatment for active TB disease.

The BCG vaccine gives protection against severe forms of the disease, like TB meningitis and miliary TB, in children under five years of age.

IPC Team contact details

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⇒ Tuberculosis (who.int)

⇒ B0271-national-standards-of-healthcare-cleanliness-2021.pdf (england.nhs.uk)

⇒ https://www.hse.gov.uk/biosafety/blood-borne-viruses/methods-of-decontamination.htm