The Importance of Effective Disinfection in Infection Control

1 Pathogens Overview

Infectious diseases are caused by pathogens, which include bacteria, fungi, spores and viruses.

Fig 1 illustrates the main pathogen groups. Some pathogens are difficult to kill; those at the bottom of the diagram are easier to kill than those at the top. Additionally, some pathogens have the capacity to survive on surfaces for days, weeks or even longer.

Reducing the number of pathogens in the healthcare environment helps to break the chain of infection (Fig 2). To keep patients and people who work in the healthcare setting safe, it is of paramount importance that the infection control products used are as effective as possible, whilst at the same time being safe to use.
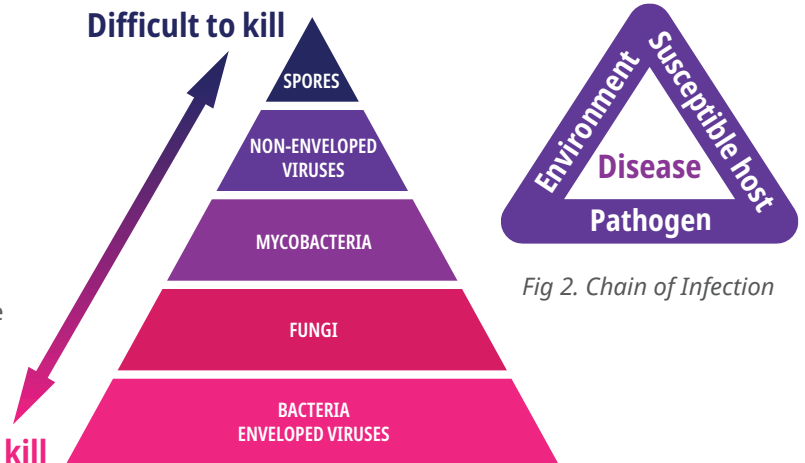
Difficult to kill

- SPORES
- NON-ENVELOPED VIRUSES
- MYCOBACTERIA
- FUNGI
- BACTERIA ENVELOPED VIRUSES

Easy to kill

Fig 1. Pathogen Groups

Environment — Susceptible host — Pathogen — **Disease**

Fig 2. Chain of Infection

Risk Level

High
Pre & post surgery wards
High dependency units
Food preparation areas

Intermediate
General wards
Children wards
Wash rooms

Low
Reception areas
Waiting rooms
Corridors
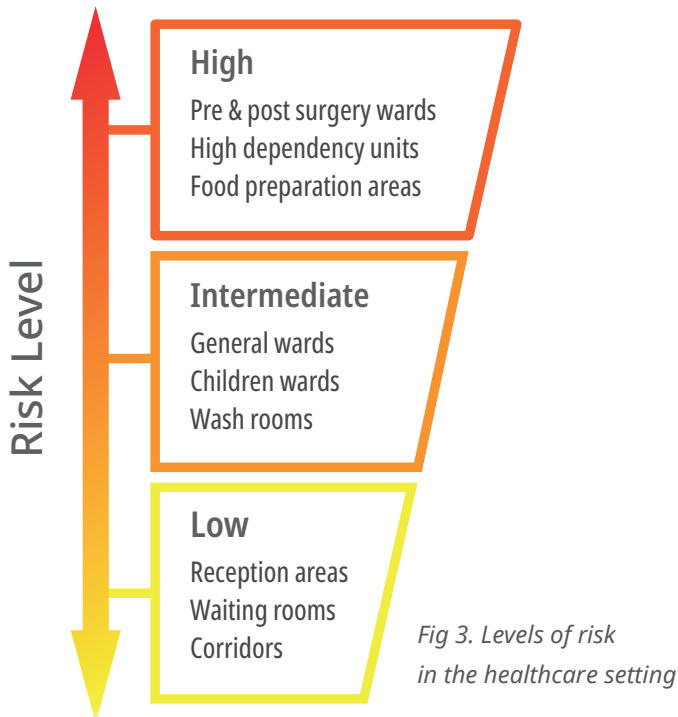
Fig 3. Levels of risk in the healthcare setting

2 Prevalence of Infections

All people admitted to hospital and those who work in the healthcare sector are at some risk of contracting a Hospital Acquired Infection (HAI). Some people are more vulnerable than others (such as the elderly; those with lowered immunity / medical conditions and the very young). There are additional risk factors including:

- length of stay
- operation or surgical procedure
- hand hygiene discipline
- high-risk areas such as intensive care units (ICU) or high dependency units (HDU)

Fig 3 depicts which areas present a greater risk of acquiring HAIs.

3 The Solution

Reducing the number of pathogens in the healthcare environment is reliant on efficient cleaning protocols together with the use of effective products. 'Log Reduction' is an industry standard term which conveys how effective a product is at reducing pathogens (Fig 4). Often, products that are used for high level disinfection can be hazardous for the user and the environment.

Bio Technics is committed to developing market-leading products that are specially formulated to have high levels of performance yet are safe to use, with minimum impact on the environment and, are tested and accredited to the highest standards possible.

Reduction of Pathogens

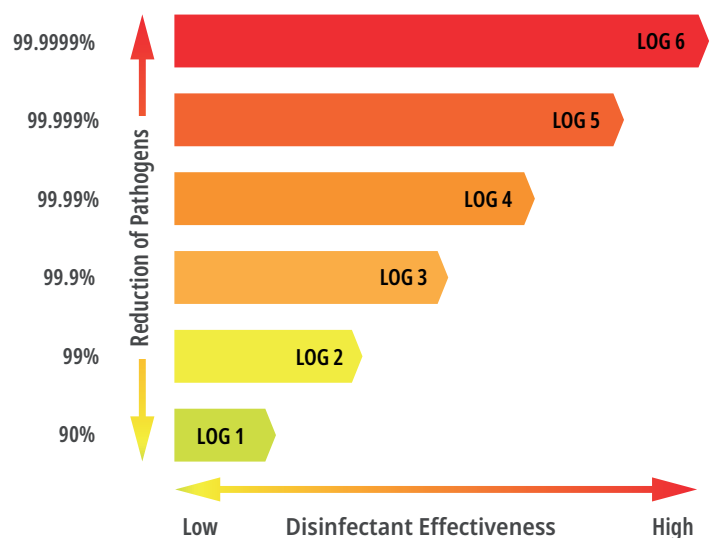|	
99.9999%	LOG 6
99.999%	LOG 5
99.99%	LOG 4
99.9%	LOG 3
99%	LOG 2
90%	LOG 1

Low ← **Disinfectant Effectiveness** → High

Fig 4. Log Reduction graphic