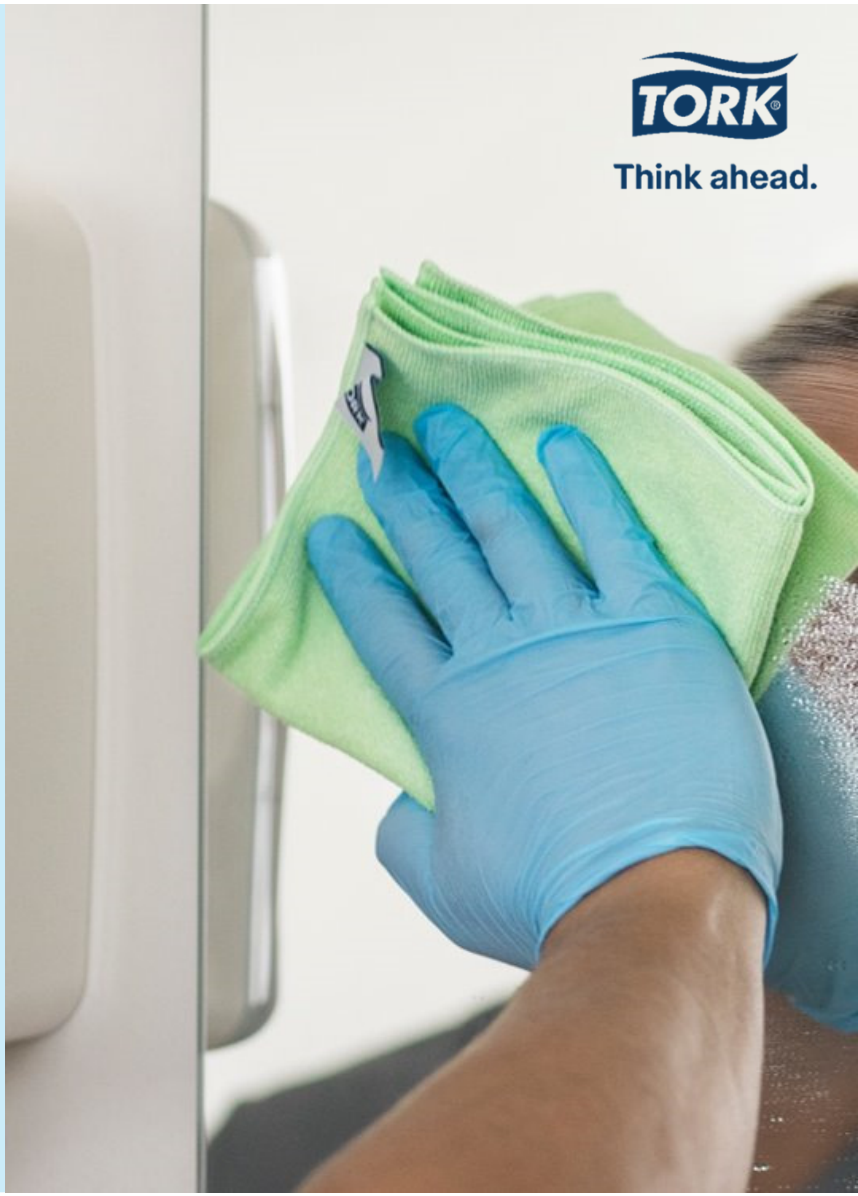
Surface Hygiene and Microfiber

Train-the-trainer



Welcome

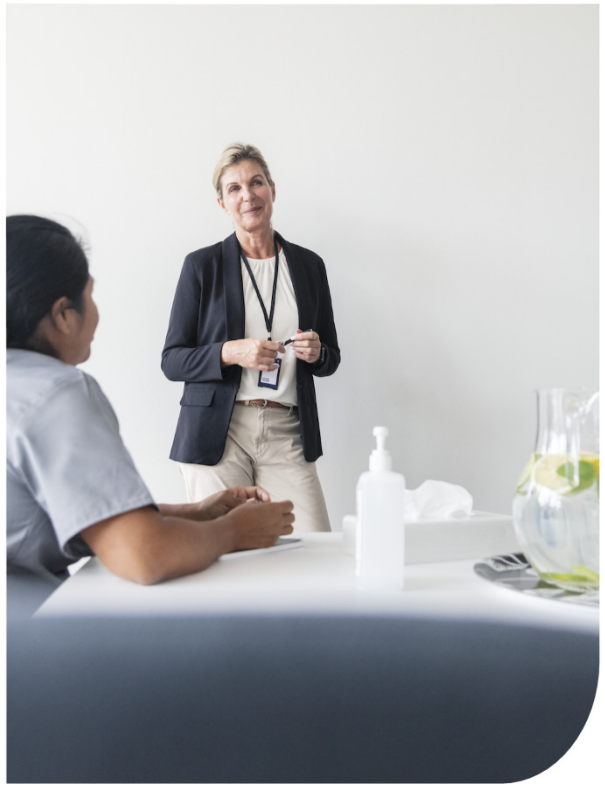
Think ahead.

In this training material we have gathered all the know-how you need in order to establish proper surface cleaning routines to promote a safer care environment in healthcare facilities.

It also shows you how to successfully train your cleaning team using our Interactive Clean Hospital training
– a visual and engaging way to make staff understand how important their work is for patient safety.

The completion time is approximately 45-60 minutes.

Let’s go!



Content

Think ahead.

Surface hygiene, cleaning and microfiber

How to train your cleaning team

Appendix

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The importance of surface hygiene

The importance of surface hygiene

Think ahead.

- It is widely accepted that environmental contamination plays an important role in the transmission of certain pathogens in the healthcare environment
- The transmission of microorganisms from environmental surfaces to patients occurs largely via hand contact with the surface. Contamination of surfaces can also result from droplet transmission (coughing, sneezing, talking).
- Although hand hygiene is important to minimize the impact of this transfer, cleaning and disinfecting environmental surfaces is fundamental in reducing their contribution to the incidence of healthcare associated infections (HAIs)

Cleaning forms the foundation for the environmental hygiene

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Hospital surfaces

Think ahead.

Hospital surfaces can be divided into two groups:

1. those with minimal hand-contact (e.g., floors, and ceilings)
2. those with frequent hand-contact (“high-touch surfaces”)

- The methods, thoroughness, and frequency of cleaning and the products used are determined by the health-care facility policy

- However, high-touch housekeeping surfaces in patient-care areas (e.g., doorknobs, bedrails, light switches, wall areas around the toilet in the patient’s room, and the edges of privacy curtains) should be cleaned and/or disinfected more frequently than surfaces with minimal hand contact

Recent evidence of Transmission

- Daily disinfection reduces acquisition of pathogens on hands (vs. cleaned when soiled)
- All touchable surfaces are equally contaminated (high vs. low touch)
- Pathogens can be disseminated from the floor (socks/shoes) to the hands and surfaces
- Portable equipment can spread microorganisms throughout the hospital
- Sink traps can be a breeding ground for microorganisms that are spread into the room with splashes

HAIs

Healthcare Associated Infections

What is an HAI?

- A Healthcare Associated Infection, usually referring to a microbial pathogen

Where do you get it?

- Hospitals, outpatient surgery centers, nursing homes, rehab facilities or wound care services

How do you get it?

- Inoculated through a wound, a device (like catheter) or mucus membrane (nose, mouth)

What are the sources?

- Endogenous (from internal microorganisms) – 40-60%
- Exogenous (from external microorganisms) – 20-40%
- Other (environment) – 20%

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Think ahead.

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Why are HAIs important?

Think ahead.

- HAIs are the primary cause of death for 136,000 patients per year in Europe & NA (99 000 USA / 37 000 EU)
- HAIs cost €13 billion in direct cost alone
- HAIs affect 5-10% of all hospital patients
- In the US, 2 million patients are affected by HAIs annually. The incidence of HAIs has increased by 36% in the last 20 years.
- HAIs cause 16 million extra days of hospital stays in Europe annually

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HAIs – up close and personal

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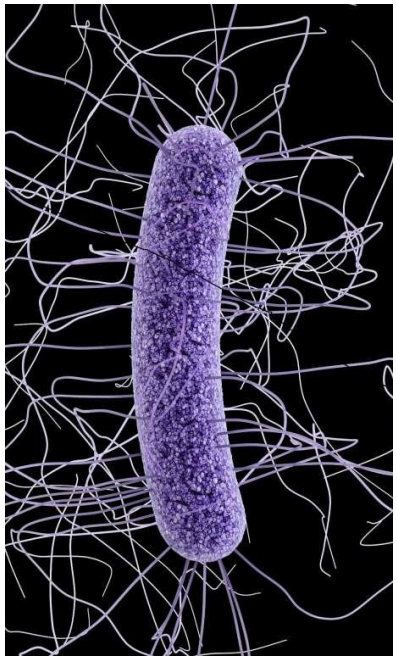
Think ahead.



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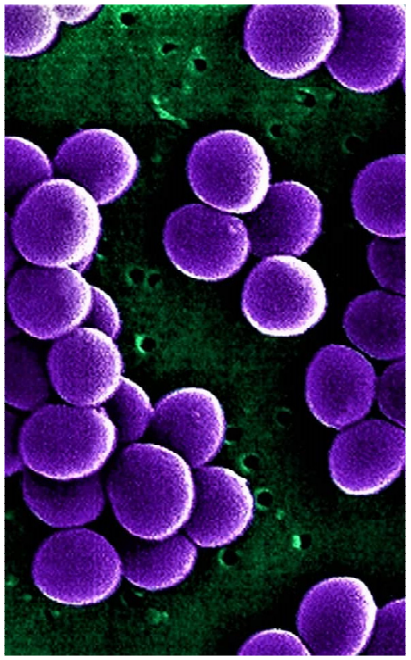
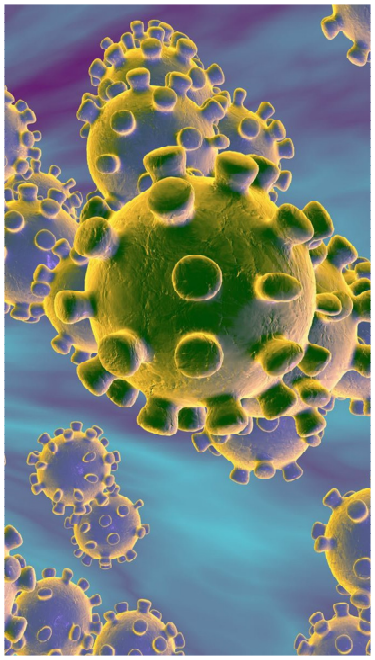
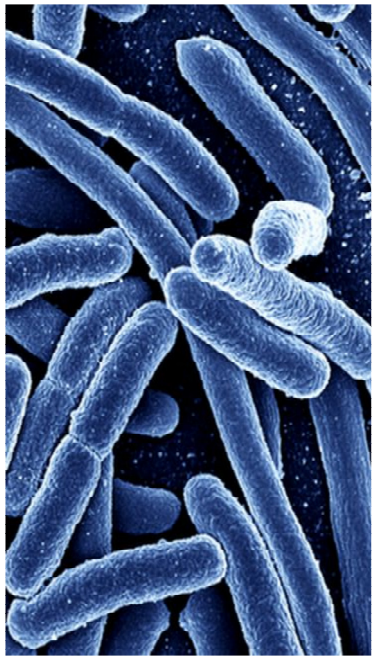


Staph



Coronavirus



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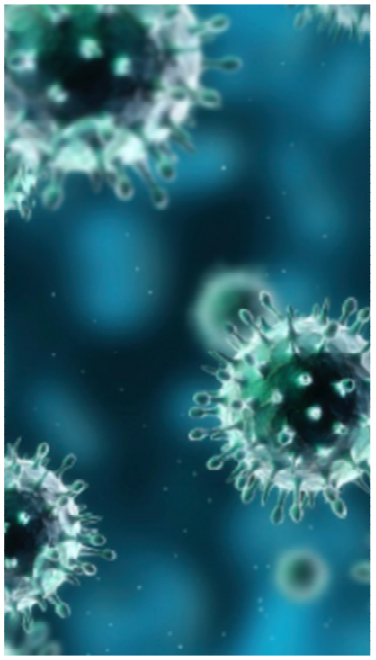

Norovirus

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Cleaning strategies

The 3 step approach

Before you start to clean

Think ahead.

It is important to conduct a **visual preliminary site assessment** to determine if:

- Patient status could pose a challenge to safe cleaning
- There is any need for additional PPE or supplies (e.g., if there are any spills of blood/body fluids or if the patient is on transmission-based precautions)
- There are any obstacles (e.g., clutter) or issues that could pose a challenge to safe cleaning
- There is any damaged or broken furniture or surfaces to be reported to supervisor/management

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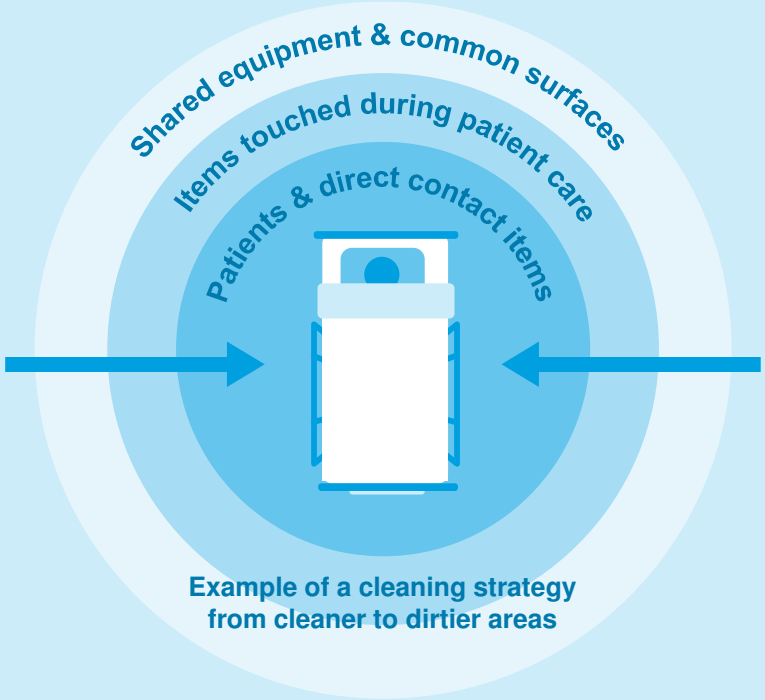
1. From Cleaner to Dirtier

Think ahead.

Proceed **from cleaner to dirtier** areas to avoid spreading dirt and microorganisms. Examples include:

- During terminal cleaning, clean low-touch surfaces before high-touch surfaces.
- Clean patient areas (e.g., patient zones) before patient toilets.
- Within a specified patient room, terminal cleaning should start with **shared equipment and common surfaces**, then proceed **to surfaces and items touched during patient care** that are outside of the patient zone, and finally to **surfaces and items directly touched by the patient** inside the patient zone. In other words, high-touch surfaces outside the patient zone should be cleaned before the high-touch surfaces inside the patient zone.
- Clean general patient areas not under transmission-based precautions before those areas under transmission-based precautions.



Example of a cleaning strategy from cleaner to dirtier areas

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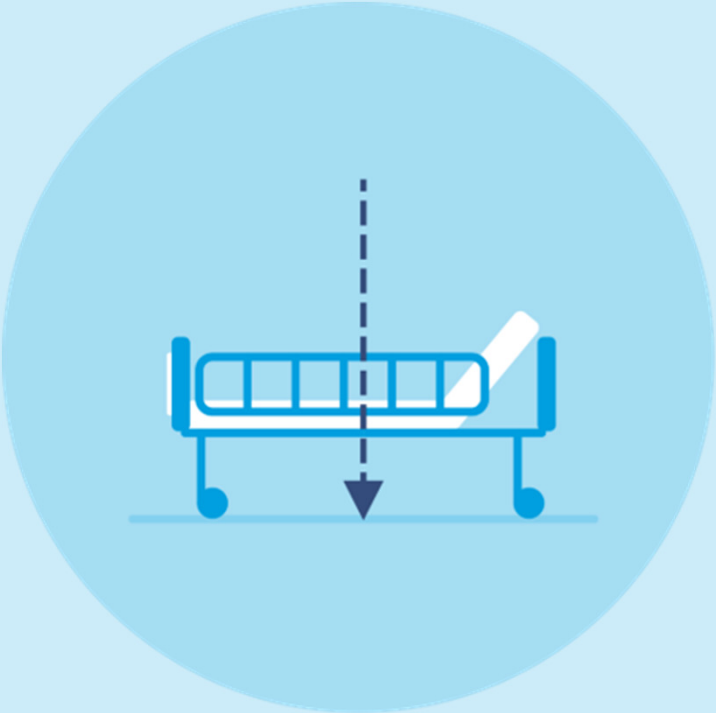
2. From High To Low (Top to Bottom)

Think ahead.

Proceed from high to low to prevent dirt and microorganisms from dripping or falling and contaminating already cleaned areas.

Examples include:

- Cleaning bed rails before bed legs
- Cleaning environmental surfaces before cleaning floors
- Cleaning floors last to allow collection of dirt and microorganisms that may have fallen



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3. Clockwise or Counterclockwise?

Think ahead.

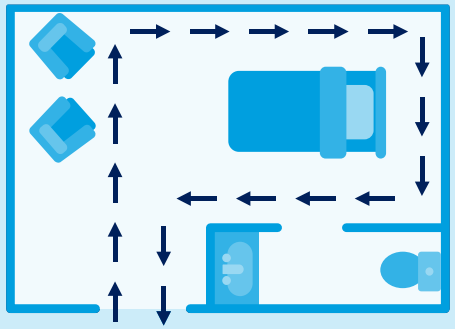
Proceed in a **systematic manner** to avoid missing areas – for example, left to right or clockwise. In a multi-bed area, clean each patient zone in the same manner – for example, starting at the foot of the bed and moving clockwise.

Immediately Attend to Body Fluid Spills

- Clean spills of blood or body fluids immediately

This is the general surface cleaning process:

1. Thoroughly wet (soak) a fresh cleaning cloth in the environmental cleaning solution.
2. Fold the cleaning cloth in half until it is about the size of your hand. This will ensure that you can use all of the surface area efficiently (generally, fold in half, then in half again, which will create 8 sides).
3. Wipe surfaces using the general strategies as described above (i.e. clean to dirty, high to low, systematic manner), making sure to use mechanical action (for cleaning steps) and making sure to that the surface is thoroughly wetted to allow required contact time (for disinfection steps).
4. Regularly rotate and unfold the cleaning cloth to use all sides.
5. When all sides of the cloth have been used or when it is no longer saturated with solution, dispose of the cleaning cloth or store it for reprocessing.
6. Repeat process from step 1.



Example of a cleaning strategy for environmental surfaces, moving in a systematic manner around the patient care area

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Best practices for environmental cleaning of surfaces:

Think ahead.

- Use fresh cleaning cloths at the start of each cleaning session (e.g., routine daily cleaning in a general inpatient ward).
- Change cleaning cloths when they are no longer saturated with solution, for a new, wetted cloth. Soiled cloths should be stored for reprocessing.
- For higher-risk areas, change cleaning cloths between each patient zone (i.e., use a new cleaning cloth for each patient bed). For example, in a multi-bed intensive unit, use a fresh cloth for every bed/incubator.
- Ensure that there are enough cleaning cloths to complete the required cleaning session.

High-touch surfaces

High-touch surfaces

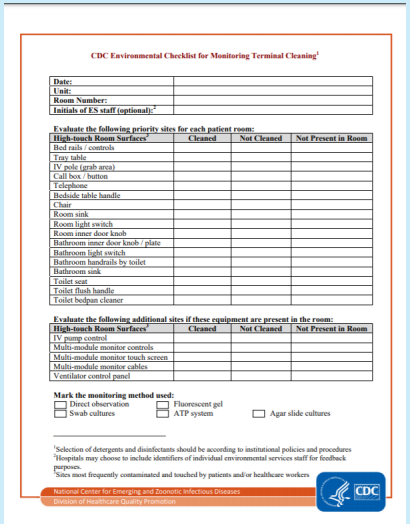
Think ahead.

The identification of **high-touch surfaces** and items in each patient care area is a necessary prerequisite to the development of cleaning procedures, as these will often differ by room, ward and facility.

Perform assessments and observations of **workflow** in consultation with clinical staff in each patient care area to determine key high-touch surfaces.

Include identified high-touch surfaces and items in **check-lists and other job aids** to facilitate completing cleaning procedures. Common high-touch surfaces include:

- bedrails
- IV poles
- sink handles
- bedside tables
- counters where medications and supplies are prepared
- edges of privacy curtains
- patient monitoring equipment (e.g., keyboards, control panels)
- transport equipment (e.g., wheelchair handles)
- call bells
- doorknobs
- light switches



CDC Environmental Checklist for Monitoring Terminal Cleaning[1]

Date:	
Unit:	
Room Number:	
Initials of ES staff (optional):[2]	

Evaluate the following priority sites for each patient room:

High-touch Room Surfaces[3]	Cleaned	Not Cleaned	Not Present in Room
Bed rails / controls			
Tray table			
IV pole (grab area)			
Call box / button			
Telephone			
Bedside table handle			
Chair			
Room sink			
Room light switch			
Room inner door knob			
Bathroom inner door knob / plate			
Bathroom light switch			
Bathroom handrails by toilet			
Bathroom sink			
Toilet seat			
Toilet flush handle			
Toilet bedpan cleaner			

Evaluate the following additional sites if these equipment are present in the room:

High-touch Room Surfaces[3]	Cleaned	Not Cleaned	Not Present in Room
IV pump control			
Multi-module monitor controls			
Multi-module monitor touch screen			
Multi-module monitor cables			
Ventilator control panel			

Mark the monitoring method used:
☐ Direct observation ☐ Fluorescent gel
☐ Swab cultures ☐ ATP system ☐ Agar slide cultures

[1]Selection of detergents and disinfectants should be according to institutional policies and procedures
[2]Hospitals may choose to include identifiers of individual environmental services staff for feedback purposes.
[3]Sites most frequently contaminated and touched by patients and/or healthcare workers

National Center for Emerging and Zoonotic Infectious Diseases
Division of Healthcare Quality Promotion

Read more about high-touch surfaces on the CDC website https://www.cdc.gov/infectioncontrol/pdf/strive/EC102-508.pdf

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Cleaning processes

Key factors for successful surface cleaning

Think ahead.

- Verified policies and procedures
- Appropriate cleaning and disinfecting products
- Training of staff – EVS / FSC and nurses
- Monitoring compliance and feedback

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Spaulding classification of surfaces

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Think ahead.

Critical
Devices which enter normally sterile tissue or vascular system (e.g. surgical devices, catheters)

Semicritical
Devices that touch mucous membranes or non-intact skin (e.g. tongue depressor)

Noncritical
Devices that touch only intact skin (also includes environmental surfaces)

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Treatment of surfaces

Think ahead.

Treatment of surfaces:

- Critical: Clean, sterilize
- Semi-critical: Clean, medium-high level disinfection
- Non-critical: Clean, low-medium level disinfection

2 Steps required to properly treat the surface:

- Step 1: Clean
- Step 2: Sterilize / disinfect (Some chemical products perform cleaning / disinfecting in 1 step)

All surfaces

- All parts of beds, ceilings, walls, vents, floors, tables, chairs, stationary / mobile medical equipment, light switches, knobs, sinks, toilets, showers, handlebars, light fixtures, linens, curtains

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Tools of the trade

Think ahead.

- Cleaning chemicals
- Disinfecting chemicals
- Cloths / wipers
- Combo products – wet wipes, 1 step cleaner/disinfectant
- Floor tools
- Other equipment – UV, peroxide fogger
- PPE – gowns, goggles, shields, respirator

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Monitoring

Think ahead.

Monitoring – Noncritical Surfaces

–Cleaning – Visual

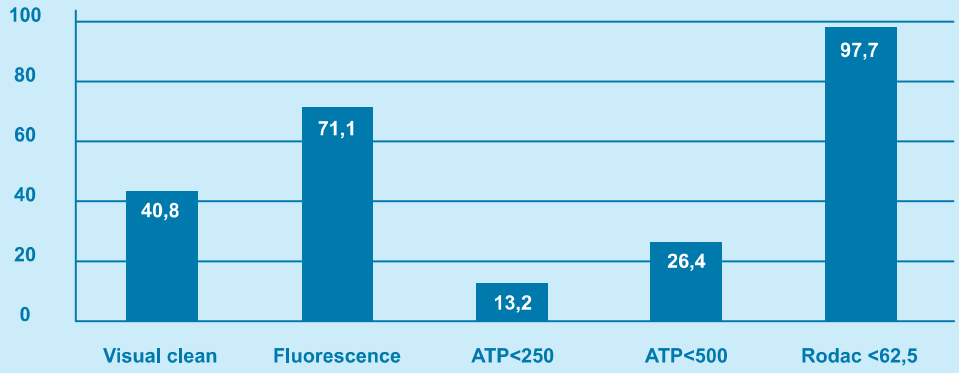
–Disinfection

- –Swab cultures
- –ATP
- –Fluorescent marker (GloGerm)

Percentage of surfaces clean by different measurement methods

Rutala, Kanamori, Gergen Sickbert-Bennet, Huslage, Weber. APIC Poster 2017.

Fluorescent marker is a useful tool in determining how thoroughly a surface is wiped and mimics the microbiological data better than ATP



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Surface cleaning

Cleaning surfaces

Think ahead.

- Surface cleaning is the necessary first step of any disinfection process
- Cleaning will remove organic matter, salts and visible soil – but also a substantial amount of unwanted microbes
- If the surface is not cleaned before the terminal reprocessing procedures are started, the success of the sterilization or disinfection process is compromised

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What's the difference between cleaning, sanitizing and disinfecting?

Think ahead.

Cleaning
Cleaning uses detergents and water to physically remove dirt, germs and other impurities. It doesn't always kill microorganisms but reduces the risk of infection spread by lowering the number of germs.

Sanitizing
This process lowers the number of microorganisms to a level which has been deemed safe in public health standards or requirements. It works by either cleaning or disinfecting surfaces to lower the risk of spreading infection.

Disinfecting
Disinfecting works by using chemicals to kill microorganisms on surfaces and objects. It does not necessarily clean dirty surfaces or remove germs (as opposed to cleaning), but by killing germs (after cleaning) it further lowers the risk of spreading infection.

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Basics of surface cleaning

Cleaning

- Water is one of the main components of cleaners and disinfectants. It dissolves or suspends soil, which then can be absorbed or picked up using cloths. However, water is not good at dissolving substances such as oil and fat.
- Detergents have an added component called surfactants that help dissolve oily dirt. Once the surfactant dissolves the oily dirt, the water in the detergent can suspend the dirt and the cloth can absorb it.
- Friction between a cleaning instrument (e.g. cloth) and surfaces is also important for removing dirt. Friction helps to release dirt from the surface and allows it to be suspended so that it can be absorbed by a cloth.

Basics of surface cleaning

Disinfection

- Chemical disinfectants have components that kill microorganisms. The types of microorganisms killed by the disinfectant is dependent on the type of chemical, the concentration and the time of exposure.
- Other factors that affect the efficacy of disinfection chemical usage are:
  - prior cleaning of the object – dirt inactivates disinfectants and harbors microorganisms
  - level of microbial contamination
  - physical nature of the objects cleaned (cracks and crevices)
  - presence of biofilms – which harbor / protect microorganisms
  - temperature / pH of the disinfection process
- It is important to note that not all disinfectants are able to kill spores

Basics of surface cleaning

Disinfection

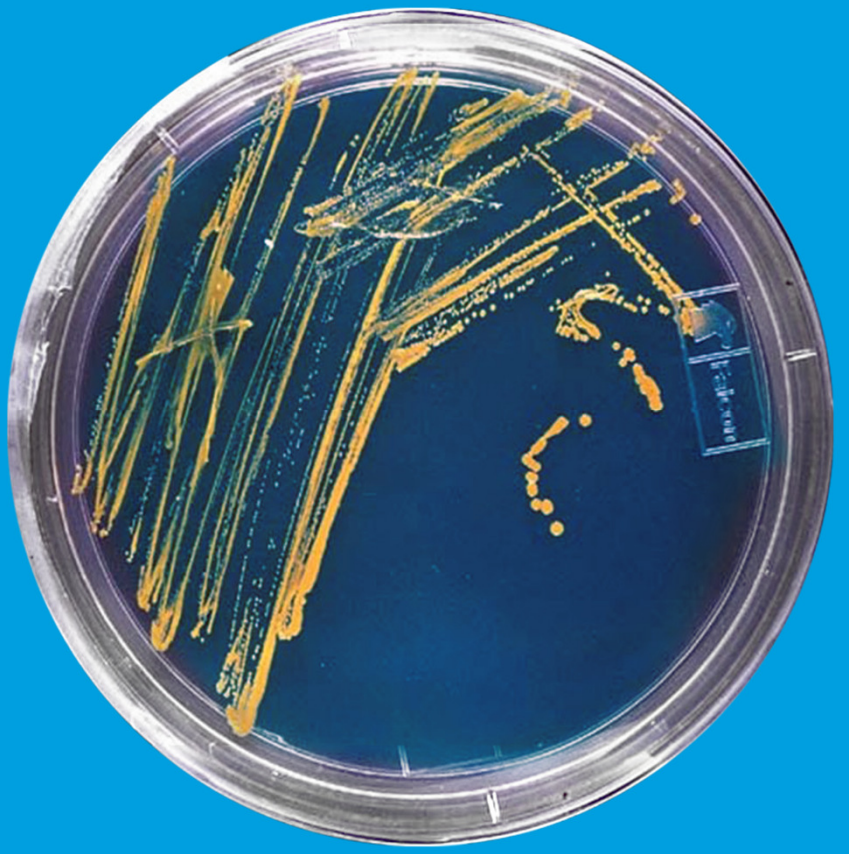
There are several types of disinfectants used in healthcare; the most common are:

- Quaternary Ammonium Compounds
- Chlorine Compounds
- Hydrogen Peroxide
- Peracetic Acid

Other types of technology are also being used for disinfection but are recommended as an extra level of security… not to replace the chemical methods of disinfection

- Ultraviolet radiation
- Hydrogen peroxide fogging

Mini microbiology school



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Mini Microbiology School

Think ahead.

What are microorganisms?

Bacteria – good and bad!

Where do bacteria hide and grow?

How to find them?

How to fight them?

Some special microbes of concern in hospitals

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Microorganisms on surfaces

Think ahead.

The number and types of microorganisms present on environmental surfaces are influenced by the following factors:

a) number of people in the environment

b) amount of activity

c) amount of moisture

d) presence of material capable of supporting microbial growth

e) rate at which organisms suspended in the air are removed

f) type of surface and orientation [i.e., horizontal or vertical]

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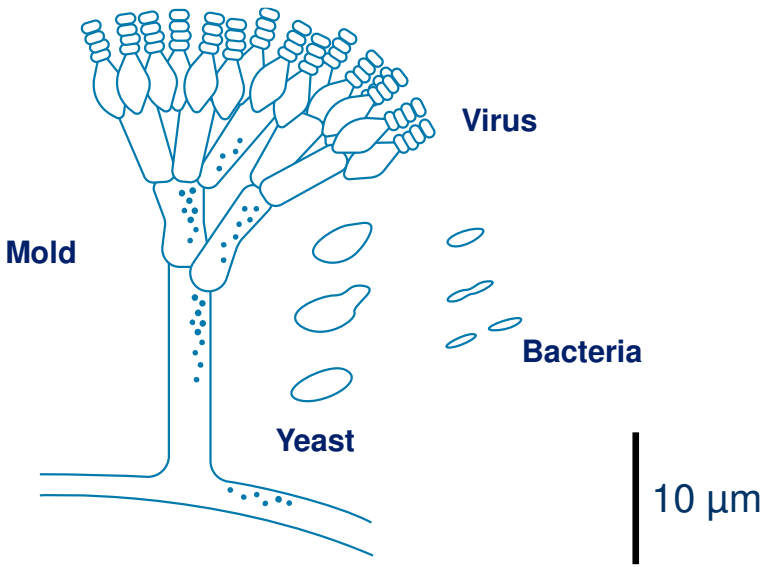
What are microorganisms?

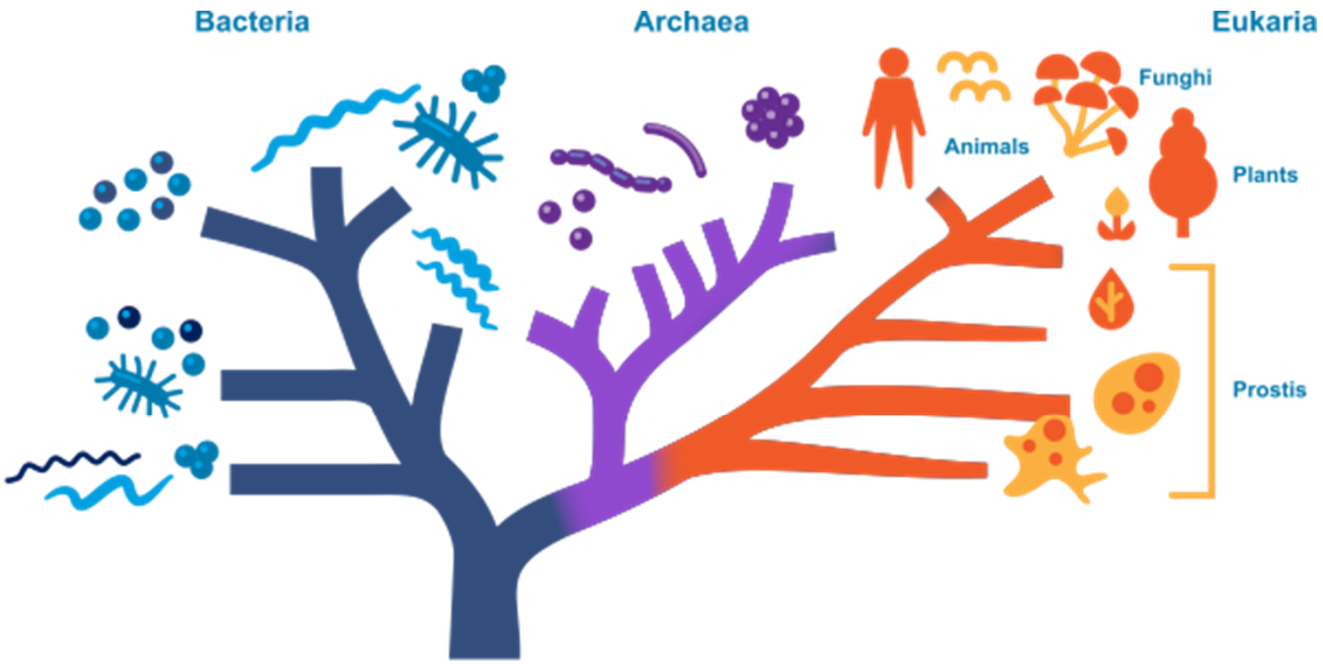
Think ahead.

- Microorganisms are small – we can't see them with our naked eye
- But differ in size – mold is the biggest and we can see mold growing on our food
- Examples of microorganisms are mold, yeast, bacteria and viruses
- They grow and multiply using different techniques:
  - **Viruses** cannot multiply on their own – they must enter another living cell – infect.
  - **Bacteria** grow by dividing – one cell becomes two, that become four etc.
  - **Yeast** reproduces by budding where a small bud is formed on the parent cell
  - **Mold** grows with long hyphae and spreads using spores



Microorganisms are all small – but different from each other

Think ahead.



A yeast cell and humans are more closely related than a bacteria and a yeast cell.

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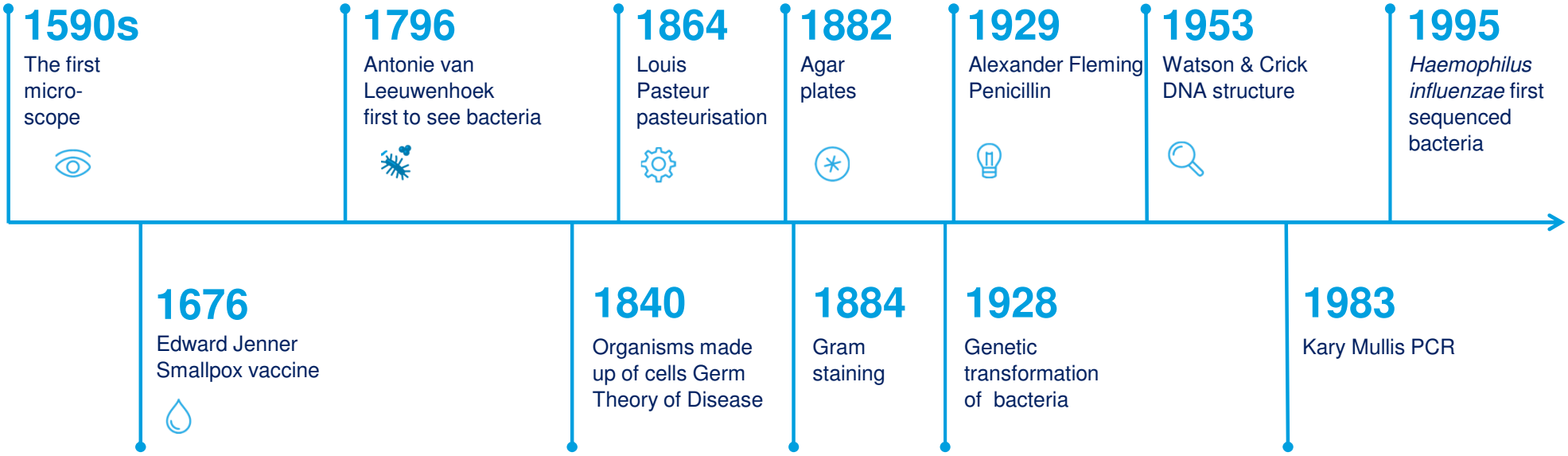
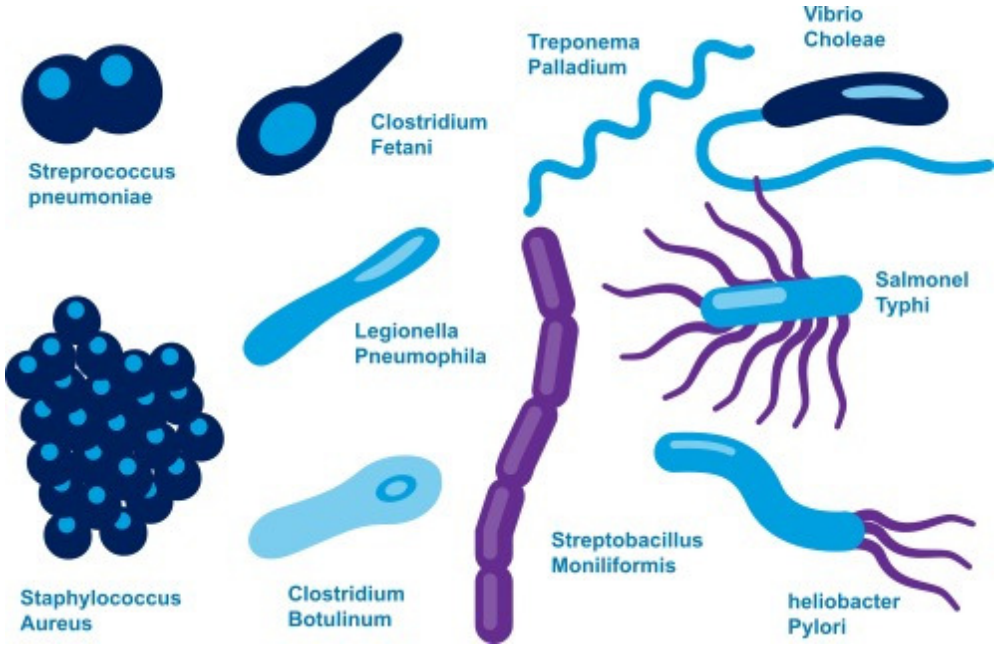
A short history of microbiology

Think ahead.



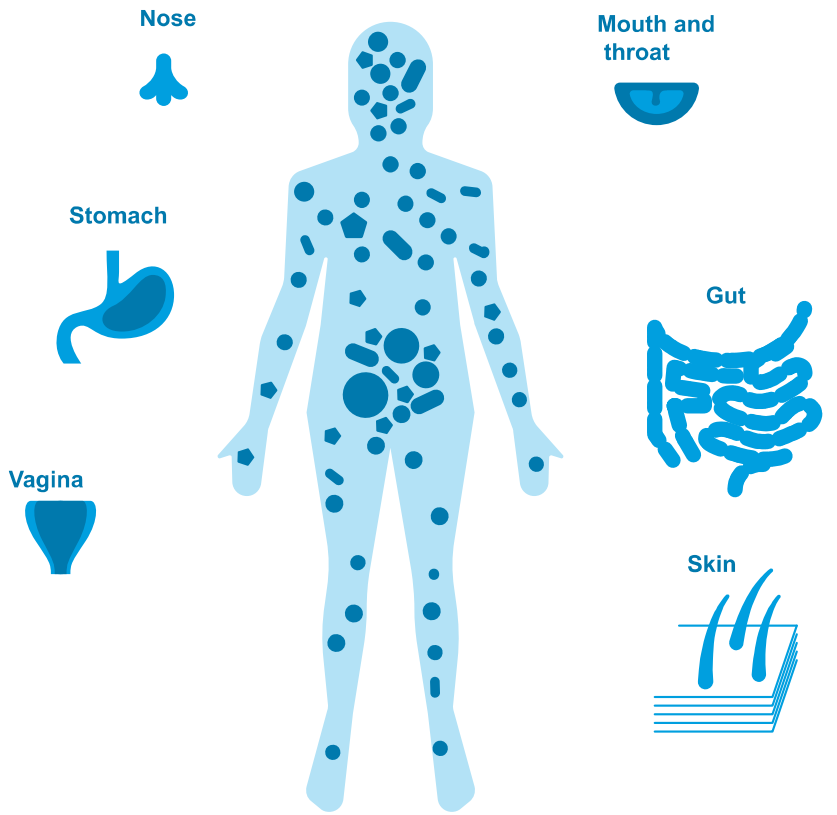
Gram positive and Gram negative…

- Most bacteria can be divided into two groups – Gram positive and Gram negative – their cell walls are different.
- Bacteria have different requirements on for example nutrition.
- They also come in different shapes – cocci, rods etc.
- Size of a bacteria is around 2 micrometer.
- Some bacteria can swim with a flagella (long tail)



Bacteria – good and bad

- Most bacteria do not disturb us at all – we are in contact with them every day without noticing
- Many bacteria are important for our health and well-being – they are part of our **microflora**. They help us stay healthy!
- Some bacteria can make us sick – the **pathogens**.
- But we are in contact with pathogens every day without getting sick – it depends on:
  - Who I am – my health and immune defense system
  - Where on my body the bacteria is introduced
  - The total number of bacteria – the infection dose differs



Where in the environment can microorganisms grow?

Think ahead.

- Almost everywhere **where there is water**!
- Bacteria are very good at finding nutrition
- But the environmental conditions select for which microorganisms:
  - Some bacteria need oxygen to grow – to other bacteria, oxygen is toxic.
  - Some prefer high and others prefer cold temperatures.

The Baltic sea is home to bacteria that prefer cold, salty water and not too much nutrition. Nature selects which microorganisms will grow in different places. But water is always needed.

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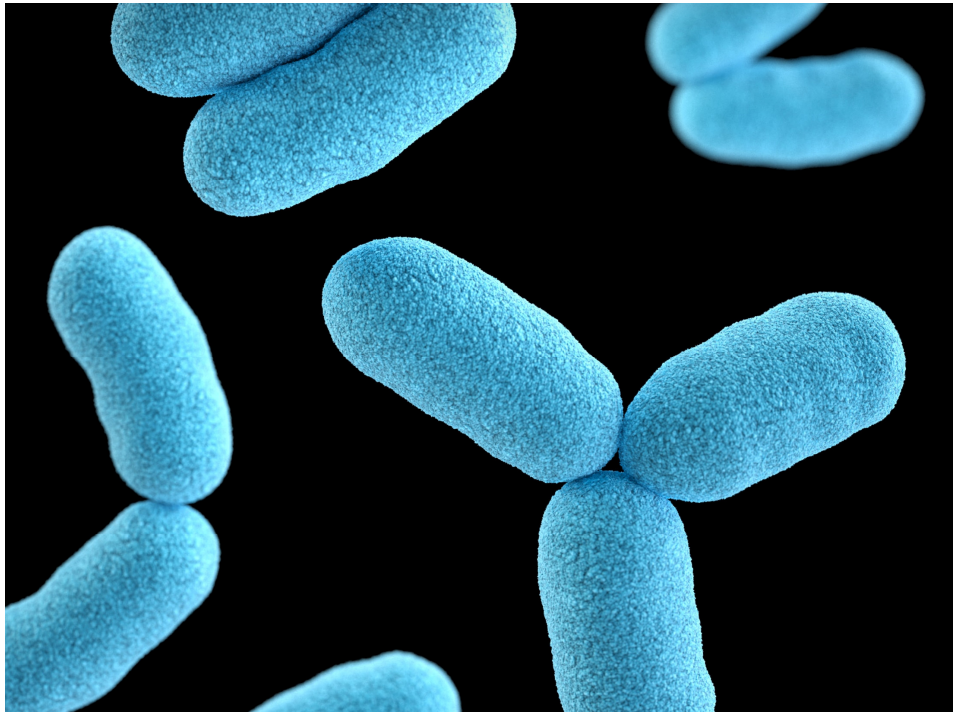
Bacteria like to grow on surfaces where they usually form a slimy layer – a biofilm

Think ahead.

- In favorable conditions, bacteria can multiply quickly
- On wet surfaces they form slimy layers – **biofilms**
- In biofilms they are protected and more difficult to remove or kill.
- Examples in our houses is on wet surfaces in the kitchen and the bathroom.
- Examples in nature is on rocks in the sea.



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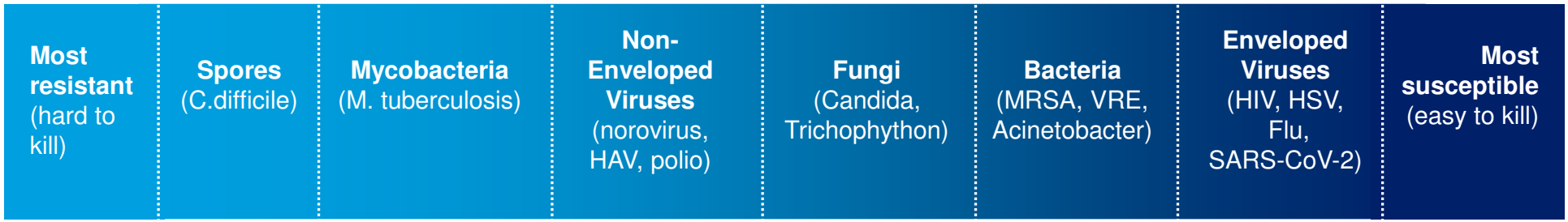
Pathogens - Prevalence / Resistance

Think ahead.

- The susceptibility / resistance of pathogens to antiseptics and disinfectants varies
- Common pathogens in outbreaks (hard to kill):
  C Difficile, Norovirus, Rotavirus, Adenovirus
- Most prevalent pathogens in outbreaks (easy to kill):
  E coli, Staph, Klebiella, E faecalis, P aeruginosa, C albicans, Enterbacter, E faecium



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For how long do pathogens survive on a surface?

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Think ahead.

Pathogen	Survival Time
S. aureus (including MRSA)	7 days to > 12 months
Enterococcus spp. (including VRE)	5 days to > 46 months
Acinetobacter spp.	3 days to 11 months
Clostridium difficile (spores)	> 5 months
Norovirus (and feline calicivirus)	8 hours to > 2 weeks
Pseudomonas aeruginosa	6 hours to 16 months
Klebsiella spp.	2 hours to > 30 months

Adapted from Hota B, et al. Clin Infect Dis 2004;39: 1182-9 and Kramer A, et al. BMC Infectious Diseases 2006; 6: 130

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How to find bacteria?

It’s a problem that they are so small…

Think ahead.

…and sometimes it’s easier to measure something else to determine the prevalence of bacteria:

- **ATP** is an energy rich molecule. It’s found in all living cells like in bacteria, our skin cells etc. It is an easy and rapid method best used for checking cleaning efficiency.
- **UV-light**. Can be used to visualize staining and dirt. Detergents are also fluorescent. Can be useful training tool.
- **Swabbing and protein color indicator.** Where proteins are found-also bacteria can be found. There are kits on the market with swab and test-tube. It is semi-quantitative. More color change means more proteins.
- **Swabbing or contact plate followed by cultivation of bacteria**. These methods measure living and culturable bacteria. Time is required to grow the bacteria and it can also be difficult to efficiently pick them up from surfaces. Specific kits are available.
- **Molecular methods – like qPCR.** Surfaces are swabbed and DNA from collected bacteria are purified, copied and analyzed.

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Of special concern in hospitals

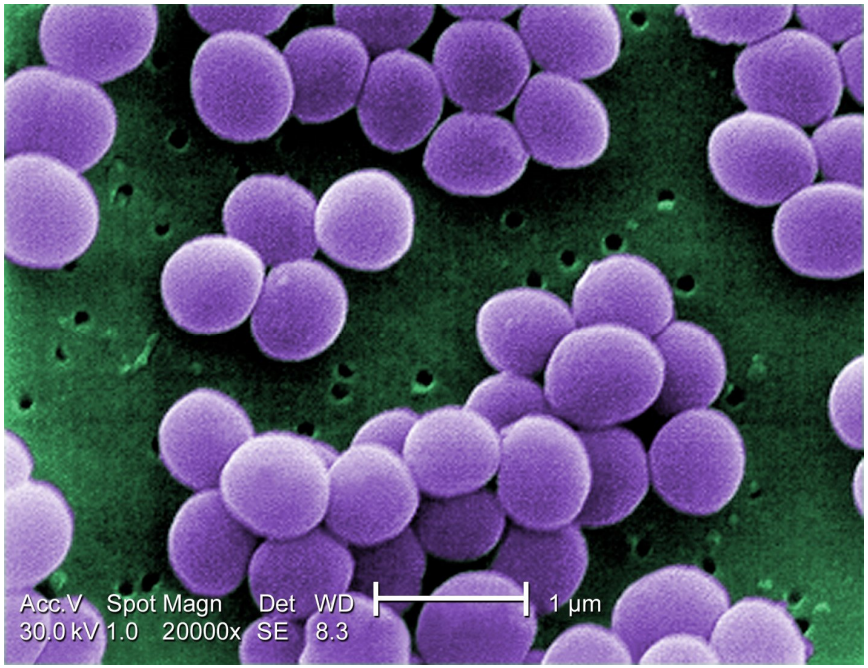
Antibiotic Resistant bacteria – ex. MRSA and ESBL and VRE

- **Antibiotic resistance** is one of the biggest threats to global health, food security, and development today.
- Antibiotic resistance occurs naturally, but **misuse of antibiotics and some biocides** are accelerating the process. The world urgently needs to change the way it prescribes and uses antibiotics.
- A growing number of infections – such as pneumonia, tuberculosis, etc. are becoming harder to treat, and sometimes impossible, as the antibiotics used to treat them **become less effective**.
- Antibiotic resistance leads **to longer hospital stays, higher medical costs and increased mortality**.
- **Infection prevention is important for decreasing the need for antibiotics** and hence it will help control the spread of antibiotic resistance.
- Important for infection prevention is to ensure that hands, instruments, and environment are clean.

MRSA

– Methicillin-resistant *Staphylococcus aureus*

- Staphylococcus aureus can normally be found on skin and in the nose without causing any problems. But sometimes they can cause infections.
- MRSA is a Staphylococcus aureus that has become resistant to common antibiotics – therefore these infections are more difficult to treat.
- MRSA is commonly associated with healthcare acquired infections but today, it is also spread in the wider community
- Often it is associated with skin infections. It starts as a painful skin boil but can become open wounds. MRSA may also cause life-threatening bloodstream infections, pneumonia, and surgical site infections.



S. aureus are gram positive cocci

Clostridium difficile

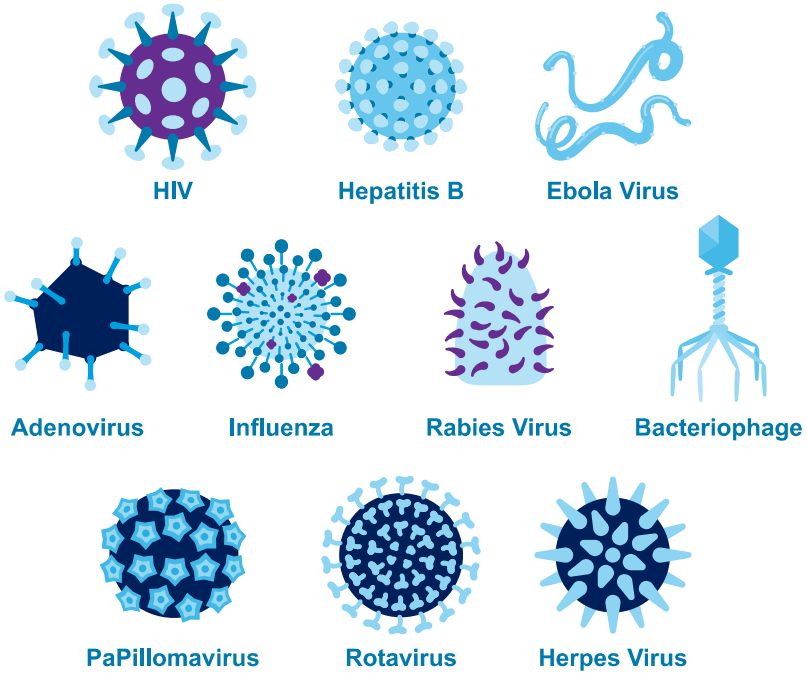
Spore former

- Some bacteria can form spores – their own survival mode.
- Spores are much more resistant to high temperatures, drying, disinfectants etc.
- Clostridium difficile is a spore former that can cause illness.
- It produces two different types of toxins and is a common cause of infectious diarrhea in hospital patients.
- Some people carry C. difficile in their intestine but never become sick, but it may also cause mild diarrhea and in other cases life-threatening inflammation of the colon.
- Illness is more common for older adults in hospitals or in long-term care facilities and typically occurs after use of antibiotic medication.

The spore is formed inside the living cell.

Viruses

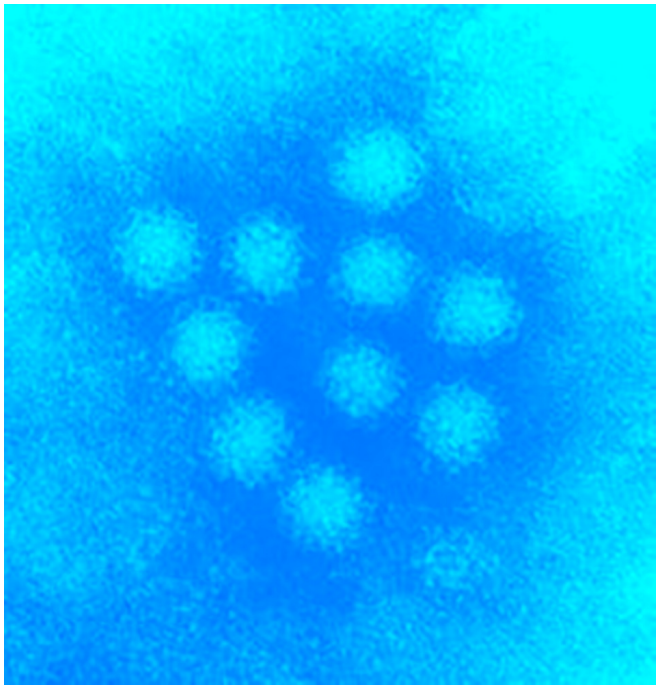
- Viruses are extremely small (20-300 nanometers)
- They contain genetic material – DNA or RNA
- They can never propagate on its own. They need to infect a living host.
- Viruses have an outer coat a capsid made of proteins
- Some viruses have an additional envelope (membrane) outside of the coat. This envelope is made of phospholipids and more easy to destroy.
- For this reason, enveloped viruses are more easy to kill with heat, ethanol, etc. One example of enveloped viruses are *Corona viruses*
- If a virus does not have an envelope, it is more resistant and more difficult to kill. One example of non-enveloped viruses are *Noroviruses*



Norovirus

Think ahead.

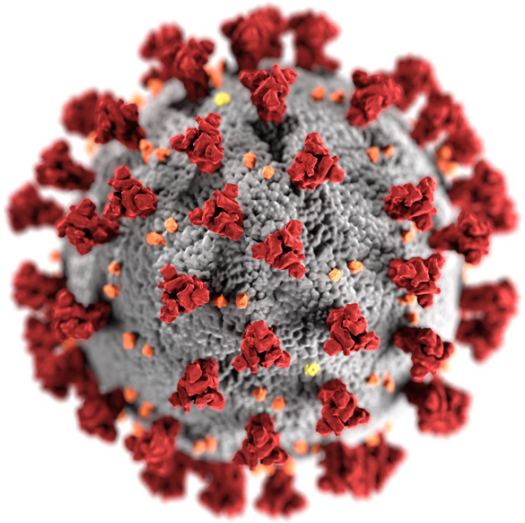
- Is a non enveloped virus, belonging to the Calicivirus family, that can cause vomiting and diarrhea.
- People with norovirus illness can shed billions of norovirus particles. And only a few particles can make other people sick. Therefore it is easily spread.
- Since it’s quite resistant it can survive for weeks on hard surfaces.
- Hand sanitizers can help a bit – but most efficient is to wash hands with soap and water followed by drying on paper towels.
- A person with **norovirus** is most **infectious** from when their symptoms start until 48 hours after all their symptoms have stopped, although they may also be **infectious** for a short time before and after this.
- Many outbreaks start in food service settings where people get sick from eating the food. Outbreaks in daycare and health care settings are also quite frequent.



Corona viruses

Think ahead.

- Corona viruses (CoV) are enveloped positive-strand RNA viruses. Corona viruses are detected in both humans and animals.
- On the envelope (the outermost membrane) there are club-shaped glycoproteins. These structures anchor the virus to human cell surfaces, which is the starting point for an infection.
- The corona virus is usually spread via small air droplets from an infected person. But may also be transferred via hands or surfaces.
- Since they are enveloped, they are quite easily killed by disinfectants, high temperatures etc. Washing hands with soap and the use of ethanol hand sanitizers are efficient.
- Human Corona viruses (HCoV) account for 15-30% of common colds, usually only causing mild upper respiratory symptoms.
- Recently more severe Corona viruses has developed. We have SARS and MERS and now the pandemic disease Covid-19 which is caused by the corona virus called SARS-CoV-2.



Microfiber – the science behind

What is microfiber?

- Microfiber is a fiber of <1 denier / dtex, ~100 X's finer than hair
- Microfibers are mostly used for cleaning products (cloths, mops), clothing, upholstery and industrial filters.
- Typically microfiber cleaning cloths are made with fibers that are a blend of polyester and polyamide polymers, ~70-80% Polyester, 20-30% Polyamide.
    - The cross-section picture shows the cross section of these fibers. The polyester is the star part of the fiber and the polyamide is the pie piece part.
    - During the process of making the microfibers, these parts are separated to make the very fine fibers. The process to split the fibers is chemical, thermal or mechanical. Chemical is the most common process for microfiber cloths.

Cross section of microfibers

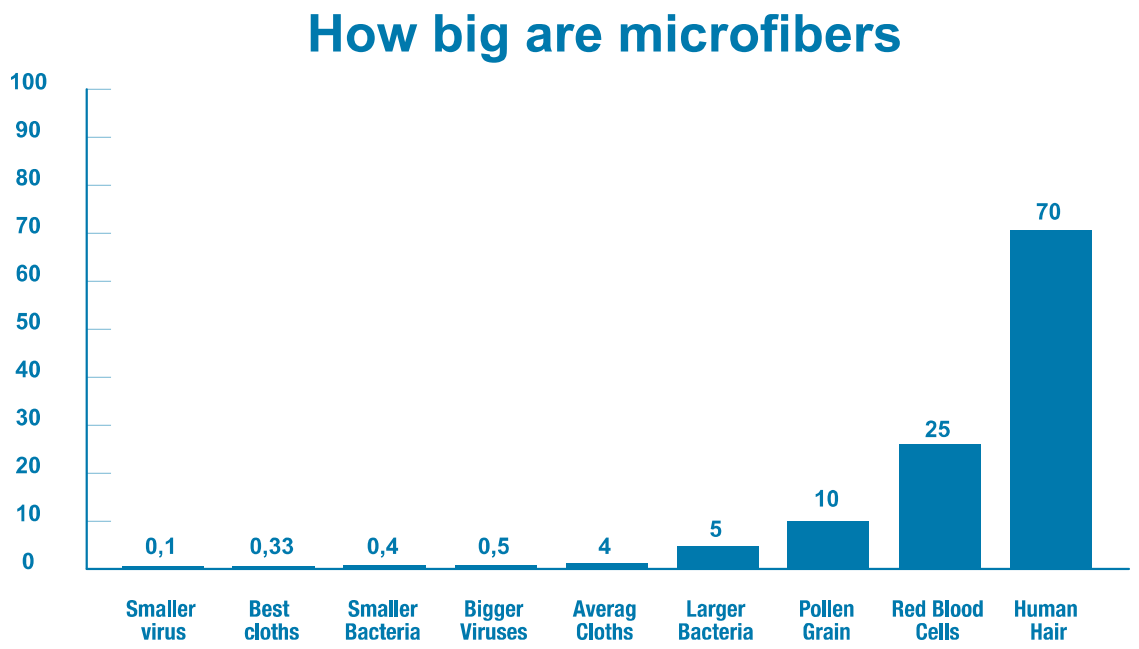
What are the important properties to look for in a microfiber?

Think ahead.

- Fiber Splitting – for the microfiber to work it's best, the splitting must be optimized
- Fineness of the fiber – some cloths might be called microfiber, but they are not by definition (< 1 decitex)
- Blend of polyester and polyamide (70/30 or 80/20) – there are 100% polyester microfiber cloths are not split and thus not as fine and don't clean and absorb as well
- Number of fibers per square inch – more fibers mean better cleaning and better durability (300 washings or more)

Why are microfibers good for cleaning?

- When the microfibers are split, they create very fine fibers.
- From the chart, you can see the best cloths have fibers that are smaller than bacteria, viruses, pollen and red blood cells.
- Since fibers cannot effectively remove anything much smaller than they are, this means that the best microfibers are able to remove bacteria, viruses….



Why are microfibers good for cleaning?

Think ahead.

- These very fine fibers aid in cleaning by:
  - Gaps between split fibers easily pick up dirt and dust but are also fine enough to pick up microbes where big round fibers just push it all around
  - Polyamide is absorbent, to pick of liquids
- When woven together into a textile cloth, these microfibers create a cloth with excellent and efficient cleaning properties!
- Even without chemicals, the dampened cloth itself does a really good job of cleaning!

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Microfiber Benefits vs. Cotton Cloths

Think ahead.

- **More effective in microbial removal** – Finer fibers have greater surface area which pick up the microbes
- **Better cleaning performance** – Finer fibers have greater surface area which absorb more liquid and pick up more dirt and dust
- **Better durability** – Stronger fibers that can withstand washing and physical force
- **Less linting**
- **Quicker absorbing and drying**
- **Less smell** – quicker drying, less germs grow

The proof

In independent studies such as those published by the Environmental Protection Agency (EPA)[1] and by Dr. William Rutala,[2] extremely fine (.37 micrometer diameter) microfiber was both laboratory and clinically tested and proven to remove up to 98 percent of bacteria and 93 percent of viruses from a surface using only water (no chemicals). In comparison, traditional cotton fibers have been shown to only remove 30 percent of the bacteria and 23 percent of the viruses from a contaminated environmental surface.

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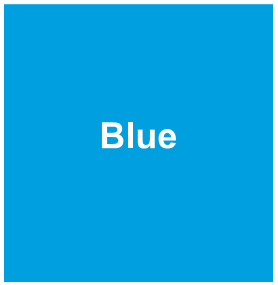
Why do some use different color microfibers?

Think ahead.

- Color coding let's patrons know that the microfiber used in the washroom is not the same one used near the patient!
- Some regions follow this system (e.g. Germany) and some do not (e.g. US). However, there is an opportunity to introduce this as a best practice in any country or location!
- Some microfiber suppliers are using green as a mirror, window, glass (esp. US)

High Risk Areas / Restroom Cleaning (toilets, Urinals)



General Lower Risk Areas (Excluding food areas)

Food Processing / Servicing General Food and Bar Use

Washbasins, Sinks, Cabinets and Other Washroom Surfaces

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Tork Interactive Clean Hospital training

How to train your cleaning team

About this training

Think ahead.

- Makes cleaning staff understand how important their work is for the patient safety
- Very visual and intuitive
- Engaging (interactive)
- Translated into many languages

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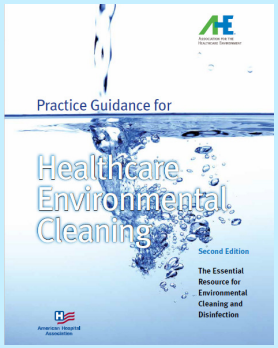
Training content

Think ahead.

1. Cleaning strategy: the 3 step approach and hand hygiene technique

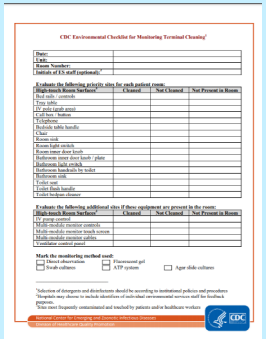
2 a. Daily cleaning – occupied patient room (based on AHE Practice Guidance)

- Steps for cleaning
- Tasks

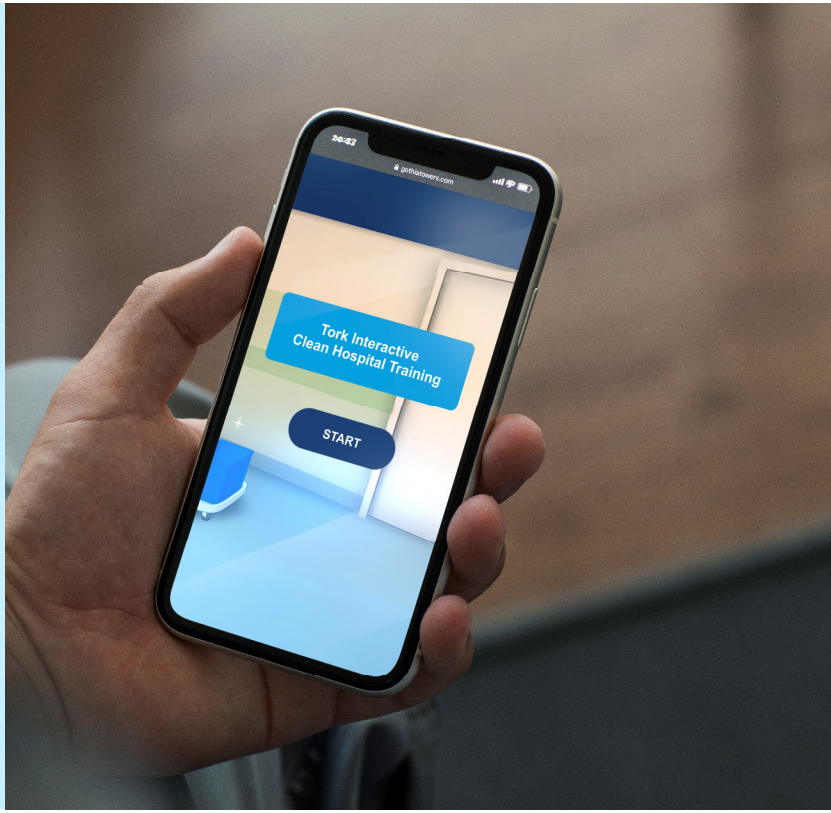


2 b. Discharge cleaning (based on AHE Practice Guidance)

- Steps for cleaning
- Tasks



Test included in the training. See how well you managed to clean all high-touch surfaces in the patient room (according to CDC definition)



How to train your team

Think ahead.

- Gather your team (preferable 10-20 employees)
- Make sure you have enough time for questions
- Access the Tork Interactive Clean Hospital Training on www.torkusa.com/surfacehygiene
- Make sure you have access to a big screen

Guide your team through;

1. 3 step approach and hand hygiene technique
2. Walk them through the cleaning steps and tasks in the occupied room and the discharge cleaning
3. Finish the game and you'll see how well your team scored on cleaning all high-touch surfaces in the patient room.

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How to train your team.cont.

Think ahead.

- During the training - challenge your team on the steps and make sure to highlight the tips and tricks throughout the training
- Let everyone try it out themselves. The training is available in many different languages. They can access the app on their phone, tablet or computer
- Print out a test template from www.torkusa.com/surfacehygiene. With this test you can see how well they remember the correct order of the cleaning steps
- Hand out diplomas to your team! You can easily print diploma templates from www.torkusa.com/surfacehygiene.

Good luck!

Did you know!

You can customize your own training according to your hospital guidelines

Appendix

Additional reading material

Additional cleaning process resources

Think ahead.

- CDC – Guideline for Disinfection & Sterilization in Healthcare Facilities 2009
- OSHA – Employee Safety Laws
- AHE – Practice Guidance for Healthcare Environmental Cleaning US
- The Joint Commission – Accreditation across hospital, including EVS services
- National or local guidelines

Think ahead.

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