



Episode 1: Basic Terminology

There are several different terms that you should be familiar with as they apply to environmental hygiene.

Levels of clean: Clean, Sanitize, Disinfect, Sterilize, one-step vs two-step cleaning

Cleaning is the process of removing soil from surfaces. This could be a wide range of things from food, or anything that can come out or off of another person.

Sanitize or sanitizing – to sanitize something is to destroy some of the germs on it. ... Sanitizer also refers to products that can be used in several areas of business, from food services, to cafeterias in hospital and for use in other areas in healthcare as well as in your own home. They are used to prevent the spread of disease by killing some germs on surfaces and skin. Sanitizers do not work on viruses, only bacteria.

Sterilize – to kill all living things. Sterilization is performed on instruments that are used for surgery

Disinfectant - a chemical that destroys many forms of harmful microorganisms (such as bacteria and fungi, viruses) on surfaces especially on surfaces but that may be less effective in destroying spores, which are harder to kill.

One step vs 2 step – what this tell you with a one-step product is the product will clean and disinfect at the same time, unless there is visible soiling. Two step products, require that a cleaning step is first performed, waiting for the contact time to be met and then wiping the area again, which performs the disinfecting step.

When working with chemicals it is important to know the shelf life or expiration date. A chemical, if it is a concentrate can have a shelf life for the concentrate and then once diluted, another shelf life, which is generally shorter. Rotating of stock is important. Labeling of a diluted product to know if the expiration date is the end of the day, 24 hours or 28 days after dilution is also important as it effects its efficacy.

The Bugs

Many different pathogens, also known as germs, may be encountered in the workplace where you perform as well as the possibility that you could be exposed to them out in the community. Pathogens can cause infection. We all carry bacteria on and in our body. Bacteria which you may have heard about are staph aureus as well as Multidrug resistant staph. There are several bacteria that have become resistant to treatment with antibiotics. E. coli is a bacteria that is in our gut and the guts of animals.

Viral pathogens, would be measles, mumps rubella, varicella (chicken pox) and of course SARS-CoV-2 that is causing the pandemic at the present time. Viruses are divided into two groups – enveloped which are EASY to kill and Non-Enveloped which are hard to kill and some are harder than others. HIV, Hep B and Hep C are those viruses that are addressed within the Blood borne pathogen regulations.

The common cold and the flu are also caused by viruses, however, there are times when a secondary bacterial infection can develop.



People get freaked out when they hear that their child has lice or maybe you have a grandparent in a facility and there is a scabies outbreak. Other examples are ringworm, cryptosporidiosis, and these are parasites and the human is the host on which they feed off of. They need the host to survive and won't survive for very long outside or off of the host. Pathogens and germs are also called microorganisms. Pathogens that accumulate in large numbers can develop into what is called biofilm. It becomes adhered to the surface, for example, your teeth, if you don't brush them, "plaque" builds up. It becomes very difficult to remove.

Words ending in "cidal" means to kill and words ending in "static" will inhibit growth. So if it a product states that it is fungicidal it will kill the fungus. Ringworm is an example of a fungus that also is like a parasite. In SDFHC there is an excellent video, on basic Microbiology that goes into greater detail.

Surfaces

Surfaces become contaminated all the time. This means that the germs/microorganisms are on the surface and if measures are not taken, cleaning and disinfection of the surfaces, and they are touched, then these germs can potentially end up causing an infection or disease.

Dependent on the setting, these are surfaces that throughout a shift or a normal work day have a high frequency of having hand contact.

In healthcare, HTS would be bedrails, the over bed table, IV pole, bedside table and controls, while in a school environment they could be each students desk as well as the instructors, light switches

High touch surfaces – HTS surfaces will vary on the setting you are in. In buildings or education or general buildings, these could be the elevator buttons to call for the elevator as well as the floor buttons, the rails inside the elevator, hand rails in stair wells, door knobs/handles/bars, and fountain buttons.

What is contact time?

To me these terms are pretty synonymous. It is the time required for the disinfectant to be on a surface for the specific time stated in the MIFU and remain wet in order to kill the pathogen or germ. Different products have different contact times. For example a Quat, is generally 10 min contact time, a Quat/Alcohol may be 2 minutes and an AHP product may be 1 minute.

Other terms

Additional terms that you might hear are Antiseptic, Antimicrobial, Efficacy and parts per million or PPM.

In providing education in the healthcare setting I like to say that an antiseptic is to skin what a disinfectant is to a surfaces. So an antiseptic helps to inhibit the growth of some microorganisms on a person's skin. Antiseptic agents are used as skin preps before surgery and for some other procedures in which you want a lower number of bacteria present at the site so when the procedure is being performed they aren't being put into the body and reduces the risk of infection.

When the word antimicrobial is brought up in conversation, some may think that we are always talking about antibiotics. And it's true that antibiotics have antimicrobial activity, they stop the growth of the bacteria. Antibiotics are not used to kill viral infections. Then there are antifungal and antiviral medications as well. For our purpose, Efficacy means that a product (s) have an effect on something – so we know, that some products have a greater or broader efficacy than others.

Parts per million – PPM - Is another way of measuring how strong a diluted solution is. With certain chemical, you need to be sure that they are at the correct parts per million to be sure that the available disinfectant will kill the pathogens.



What is the difference between an

AN EPIDEMIC is a disease that affects a large number of people within a community, population, or region.

A PANDEMIC is an epidemic that's spread over multiple countries or continents. This is an Epidemic that has a passport – crosses the country borders.

AN OUTBREAK is a greater-than-anticipated increase in the number of endemic cases. It can also be a single case in a new area. If it's not quickly controlled, an outbreak can become an epidemic.

Epidemic vs. Pandemic vs Outbreak – in health care or even a community, one case of a pathogen that is not normally seen can be considered an outbreak. This can be viewed and any increase in activity. Each year during flu season the local health department watches numbers very carefully. A LTC may see an outbreak. Or during summer months, if you are all at a picnic and the potato salad wasn't kept cold, there may be an outbreak of food poisoning among those at the picnic that are the warm potato salad.

Could that turn into an epidemic, for that scenario, probably not, however if a there was a problem in a food manufacturing plant, and food was found to be contaminated because many people were found to be sick in different areas of the country and through investigation the common source was found to be a specific food product, for example with Listeria, and product is shipped all over the country, and people got sick in all of these different area, then you could see an "Epidemic" or it can even be localized to a specific area. Two years ago there were epidemics of measles and Hep A in different areas of the country.

Then you have the situation of a disease with widespread illness, either across a country or around the world. With global travel be higher than ever and taking it doesn't take long to get somewhere, we may begin to see pandemics occur more frequently.

OTHER TERMS – not in the podcast but may be worthy of note.

Concentrate – a product that needs to be diluted with X to make a solution. Ex. concentrated orange juice (frozen) you then need to add 3 cans of water to make the dilution.

Dilution - is the process of reducing the concentration of a solute in solution, usually simply by mixing with more solvent. Many disinfectants are diluted from a more concentrated form, before use. The dilution ratio is determined by the maker of the product, and is set at that ideal point. Adding more concentrate to a dilution does not make it better, it can actually make a solution less effective. Over diluting (adding more water) will also affect how well a solution can work. Nothing should be added to a diluted solution except your cloth!

Ratio - A ratio between two or more quantities is a way of measuring their sizes, ex. 1 oz. of bleach to 1 Gal of water. If instructions state that a solution needs to be mixed at a 1 to 10 or 1 to 100, this is a ratio.

Manufacturer's Instructions for Use – MIFU - These are the directions provide by the manufacturer of the product as to how to use the product. Please, do not mix chemicals together.

Quaternary Ammonium Compound– also known as a "Quat", Most chemicals used for cleaning buildings are probably what Quaternary Ammonium compounds. They may be need to be diluted to the proper ratio so following the MIFU. This is a very common cleaner/disinfectant.

RTU – Ready to use- does not require dilution. If used on a wet surface, it will dilute the product which you don't want. An example would be - If you are cleaning the shower room in the athletic department and using a RTU, don't run the showers and then apply the RTU product.

PPE – Personal Protective Equipment. These are gloves (vinyl, latex or nitrile or heavier material), Eye protection with and/or without a face shield, to keep the chemicals out of your eyes as you are diluting a concentrate to the dilution



needed. When stripping floors, wearing of long pants and long sleeves are a type of PPE, as you don't want the product to get on your skin.

Dependent on what you are using this could even be wearing long sleeves or long pants especially if you are using a floor stripper.

SDS – Safety Data Sheet – This is the information provided on any chemical used, indicating the risk of the chemical to the user, and PPE, ventilation and exposure control for that chemical. It also provides information if the chemical will affect the environment. The employer has the responsibility to have these readily available. As you work in different buildings with different chemicals, so require that an eyewash station is available if you accidentally had a splash into your eyes.

Standard Precautions – This implies that as you perform your role, if you are to come conduct cleaning and disinfection of an area. For example in a rest room that you would use the appropriate PPE that was discussed earlier to protect yourself from fluids, excretions, and secretions that were from another person. I like to think of this as “If it is Moist, Wet and doesn't belong to YOU”, that you are to use the PPE needed to clean and disinfect the area.