

Medical treatment —————

Prevention of Infections Starts from Your Daily Environment

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1. Foreword

Kobe Ekisaikai Hospital provides refresher courses to ship health supervisors. Nurses like myself are in charge of lectures on taking measurements, dressing and bandaging, toileting assistance, etc. However, these lectures have never allotted time for health supervisors to talk about the problems they face on a daily basis, and time has gone by with my wondering if something had to be done about this situation. For this reason, on this occasion I think I would like to write about building the daily environment for ensuring medical safety and preventing infections, and about healthcare. "Being able to do ordinary things as expected" is very important in medical safety and infection prevention. I am sure you have all heard about the difference between "to have heard about something before," "to know," "to understand," and "to be able to do." Preventive measures are the very examples of this. It is important for everyone to "be able to do something." Serious infections can occur as a result of just one person not being able to do something. Raising the compliance rate is especially important for safety and infection control. I think what is required of health supervisors is "thinking about how to educate everyone and establish the workplace environment and putting the thought into action" so that everyone is able to do "what they are required to do." Japanese nurses are said to be outstanding probably because they are able to not only carry out nursing work but also in-between work normally.

From the beginning, nurses start working at hospitals as health-care workers. So most of the time, nurses get on with their daily work as a matter of course. They have not learnt these things at school, but on site, and I would like to share them with you as well.

2. Infection prevention measures

Hospitals are full of infected persons and compromised hosts. Bacteria and virus do not have legs and feet, so they will not attack you by themselves. Take for

instance air-borne infections, these will only be established if “they are carried by someone.” You can make the disinfection and cleaning to eliminate bacteria, but it is impossible to maintain germfree conditions. Let’s image how germs are spread, and prevent them from eventually entering the mouth and mucous membrane.

“Always clean in one direction”

When cleaning by mopping or wiping, wipe in one direction so that dirt does not travel in two directions.

Make sure places once cleaned do not get dirty again.

In particular, wipe tables used for eating, wash the cloth and then wipe the tables once again.

Imagine how doctors preparing for surgeries wash their hands. They would face their fingers upward with their elbows positioned horizontal. This is to prevent water droplets from flowing back to the fingers. You can apply this in your daily lives, even though it does not have to be this thorough. It is important to know places which need to be kept clean. For instance, do not wipe eyes and mouths with towels which have been used to wipe various places.

“Differentiate floors and tables”

You all know that “floors are dirty.” It is important not to place on tables, bags or things that have been placed on the floors, rest your feet on a chair, or put things that have been on the floors at places where you may touch with your hand. Also after taking off your shoes, you should not walk on the floor with your bare feet. In Japan, you have the custom of sitting and placing your hands on tatami mats, so dirty feet means your hands will touch more dirty things. Medical and sanitary supplies, etc. should never be placed on the floors even if they are kept in boxes. As a rule, they must be placed more than 10 cm above the floor.

It is important to know where you mainly touch with your hands, and differentiate these places clearly.

“When to wash hands”

Since germs often spread from your hands, it is important to wash your hands whenever they are dirty, and make sure you always wash your hands before you eat. No matter how much you clean places which you touch, germs multiply



very quickly. If you know when is the best time to wash your hands and practice this, you can prevent infections. The PC keyboard, etc. are places where germs will accumulate. Since these places cannot be kept germ-free, it is important to wash your hands after touching these places. As for cleaning items and facilities, it is also the role of health supervisors to manage what is needed for preventing infections and provide instructions after checking if hand-washing facilities are provided at cafeterias, if disinfection alcohol is constantly provided, if these are used on a daily basis, etc. In addition, it is important to know how often you usually touch your eyes or nose by habit. According to a certain survey, you normally touch your face with your hands once every one to two minutes. To prevent your own infections, and to prevent infecting your vicinity with your hands, “when to wash your hands” is a significant point.

“Maintain the clean state after cleaning”

How dishes, spoons and other tableware which have been used are stored after they have been washed is important. In other words, the hygiene state immediately after washing should be maintained until just prior to use. If they are placed on dishcloth, when was the dishcloth last washed? If they are placed in a drawer, is that drawer clean? There is no limit once you start thinking about such things, but in the medical scene, nurses bear such things in mind all the time, and handle items with the premise that they are kept clean until just before use. It is not possible to sterilize the environment. Germs increase over time. They start dividing in 10 minutes, and multiply by several ten times and several thousand times in two hours. Taking that tables and handrails are always contaminated, always wash hands right before eating, and do not place things that put into the mouth on tables. Make sure that the tips of chopsticks and spoons are raised from the table (place on a chopstick rest). Do not touch bread directly but over the bag. Also do not place drinking glasses upside down. Leaving dishcloth, dustcloth, dish washing sponge constantly wet helps germs multiply. Always set aside spare ones and keep them dry. Although all this may seem like nothing, remember that once infected, germs can spread in no time. Thus, how well you can practice this in your daily lives determines the degree of the risks of getting infections.

“Wash hands thoroughly after toileting”

What about the toilet environment?

At hospitals, patients with diarrhea never share toilets because of the high risks of infection.

Infectious diarrhea spreads instantaneously when toilets are shared. Disinfection by alcohol does not work for Norovirus, etc. that you often hear going around. They can only be cleaned by sodium hypochlorite (so called bleach).

In general places, it is probably impossible not to share toilets. So there is need to plan normal toilet cleaning methods and cleaning methods when toilets are contaminated. Sanitation around the toilet plays a crucial point in times of food poisoning and infectious enteritis.

Touching the water faucet after washing hands is meaningless and sharing towels is out of the question. After wiping your hands using paper towel, water faucets should be closed with the paper towel. This is impossible for each one of you to do alone, and there is a need to prepare the environment for this.



Places to be disinfected against *Norovirus*

“Confine contaminants and vomit”

It is important not to touch blood and body fluids with bare hands. To prevent infection, it is essential to teach those on site not to touch blood or vomit which has scattered with their bare hands when cleaning up and decide the cleaning method and layout of items beforehand.

Contaminated items must be put in plastic bags to confine the germs on the site. Never leave contaminated items in buckets. Contaminants can disperse after drying.

At hospitals, garbage in dustbin is not transferred into something else. Individual garbage can be confined in plastic bags and collected, but the transfer of dustbin contents into one pile for collection is not recommended.

“Store sanitation materials”

When materials used for treating wounds become contaminated, this can lead to direct infection. Sanitation materials wet with water are considered “dirty” (contaminated). I cannot imagine what the medical office on ships is like, but sea wind must have a huge influence. Even if sanitation materials may not appear wet, they will become contaminated if the humidity is high. On ships, particularly take into account temperature and humidity when selecting the storage places and containers.

It is important not to touch sanitation materials unnecessarily. At hospitals, they have a system where materials can be taken out without having to look for them. The more you touch things, the greater the risks of contamination and damage. At medical care sites, items are labeled clearly, and they are taken out in one direction and replenished from the opposite direction to make sure items are used from old stock. The order of replenishing and using items is decided to maintain the quality of sanitation materials.



“Appropriate breaks”

Nurses on shifts set their work shifts to be procyclical ones.

Your biorhythm is said to characteristically shift backwards by one hour every approximately 25 hours. The “procyclical” shift where work starts at a later time is ideal. For three-shifts, the procyclical shift of “day shift → semi-night shift → break → midnight shift” is said to be easier for the body to adjust to a new rhythm than the countercyclical shift of “day shift → midnight shift → semi-night shift.” Presently, the two-shift work system is more popular, but the issues with this system are how to secure time to have a nap and how to have quality sleep. No doubt, these issues are more important for those working on shifts on ships over a long term. Efforts must be made to ensure quality rest and sleep as much as possible.

Sleep quality changes just by taking into account sound, lighting, and bedding. In the past, health-care workers used to devote themselves to work with the spirit of volunteer. Today, more focus is placed on how their body and mind are rested as much as possible instead of trying to put up with the harsh environment. Stress has major adverse effects on your physical functions, as well as affects work efficiency. To improve the workplace environment as much as possible, it is important to rest your brain. To reset your brain, I recommend bathing in morning sun, meditating and emptying your minds by Zen or yoga. If you can enhance the quality of your break time, that will be even better.

3. Summary

These have just been some of my random thoughts. For health supervisors, measures for external injuries and illnesses as well as measures to prevent illness are very important. Although it may not be possible to create the same environment as hospitals, I hope that you will be able to apply the information I have shared here, and that it will contribute to your future activities.