Introduction of optimal cleaning guide for use of monitors in healthcare facilities and antimicrobial properties used in the monitor's housing to protect the monitor

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Abstract

Experts agree that the careful cleaning of environmental surfaces is essential to the cleanliness of healthcare facilities. This paper addresses the knowledge, attitudes, and practices related to the cleaning of monitors used in clinical environments.

Background

The cleaning of environmental surfaces in healthcare facilities is essential, but medical displays are easily and more frequently overlooked than other types of equipment. One reason for such oversight is a variety of personnel-related issues, since the level of cleanliness achieved depends on the level of the performance of cleaning, such as the amount of time spent cleaning and the number of wipes used. Many hospitals do not have sufficiently strict policies for the cleaning of medical displays used in both clinical and surgical environments.

In addition to personnel-related issues, there are factors that can have adverse effects on the efficacy of traditional cleaning practices. For example, the type of surface being cleaned may affect which and how easily contaminants can be removed. Failure to follow a manufacturer's recommendations and the lack of chemical activity may also affect the efficacy of cleaning practices.

The purpose of this paper is to summarize the methods for the cleaning of clinical review and surgical monitors, as well as to introduce the antimicrobial properties that are used in the housings of the monitors and that inhibit the growth of bacteria to protect the monitor.

The cleaning methods of medical monitors

Recommended cleaning products

To achieve the desired effects, a cleaning method should be appropriately executed. LG Medical Displays have been tested for resistance to the following chemicals for cleaning:

Surgical Monitor

- Isopropanol
- Ethanol 70%
- 0.9% NaCl solution

*Cleaning Available Part : All

Diagnostic Monitor & Clinical Review Monitor

- Isopropanol
- Ethanol 70%
- 0.9% NaCl solution

*Cleaning Available Part : All exterior housing except for screen

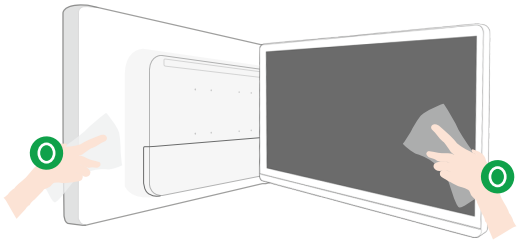
* Chemicals other than those mentioned above have not yet been tested, and LG does not recommend using other cleaning agents.

Applying methods of cleaning products

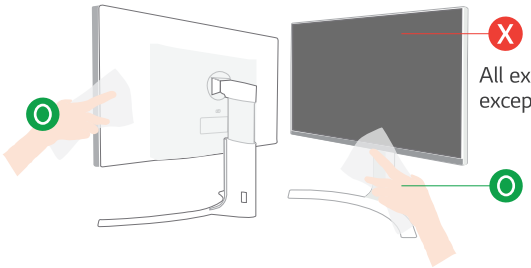
Prior to cleaning, a display should be turned off and disconnected from its power source. All LG Medical Displays should be cleaned only with a soft cloth that has been soaked in the tested chemicals given in the above list. The cloth should be gently wiped with a force of less than 1 N over surfaces. Care must be taken to prevent liquid chemicals from seeping into the interior of the monitor, as severe damage may result. A surgical monitor can be cleaned in its entirety, which includes the front glass and exterior housing. The front LCD panel of a clinical review monitor should not be wiped, so as to avoid damaging or scratching the display.

Do not use solvents such as benzene or paint thinner, or any acid, alkaline or abrasive detergents. The cleaning of any medical displays or the use of any of the chemicals should not be attempted by any patients but only by medical-related professionals, i.e. nurses or physicians.

Surgical Monitor



Diagnostic & Clinical Review Monitor



Introducing antimicrobial properties that are used in the housing of clinical review and surgical monitors to inhibit the growth of bacteria to protect the monitor

Given the multitude of challenges in achieving and maintaining the adequate cleanliness of healthcare facilities, the antimicrobial additive, which inhibits the growth of bacteria to protect the monitor, is used in the housing of LG Medical Display.

The antimicrobial properties, called Silver Zinc Zeolite* has been shown to prevent the bacterial contamination of surfaces.[1] Exchanging natural cations with the heavy metal ions in a structure, Zeolite is widely known as an effective antimicrobial agent and is generally applied to medical fibers or other antimicrobial agents.[2-4] Since Zeolites with silver ions exhibit more effective antimicrobial activity than does silver alone, Silver Zinc Zeolite in the housing of clinical monitors are built in to inhibit the growth of bacteria on the surface.[4]

The antimicrobial properties are applied to the housing of LG Medical Displays: 19HK312C (a 1.3MP clinical review monitor). The antimicrobial activities vary according to the number of antimicrobial materials present. LG Medical Displays comply with ISO22196 standards and their housings contain raw plastic materials that have been evaluated as having the necessary antimicrobial properties. The antimicrobial properties do not protect users or others against bacteria, viruses, germs, or other disease organisms.

Conclusion

In conclusion, the manual cleaning of environmental surfaces in healthcare facilities (daily and at patient discharge) is an essential element in healthcare facility cleaning programs. There are many factors that make hinder the achievement of cleanliness on a routine and sustained basis, but continued efforts to improve the quality and consistency of cleaning practices are required.

Given the many challenges to achieving the comprehensive cleanliness of surfaces, following traditional methods that use adequate chemicals and proven methods of cleaning on a regular basis are highly recommended. In addition, antimicrobial properties are built into the housing of clinical monitors such as 19HK312C to inhibit the growth of bacteria..

*Silver Zinc Zeolite is a European term used to refer to the antimicrobial materials mentioned in this article. The term used in other countries outside Europe may be different (for example: "Zeomic Type AW Silver Zeolite A" in the United States) depending upon the legal regulations of chemical substances in these countries.

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