

Use of HFMEA (Healthcare Failure Mode and Effect Analysis) Strategy to Improve Surgical Teams' Fire Prevention Awareness Rate

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Background

In recent years, fire accidents have frequently occurred to hospitals. For example, in 2012, the fire accident taking place at Tainan Xinying Hospital, Beimen Branch caused 13 deaths and 59 injuries. In 2018, the fire accident at Ministry of Health and Welfare Taipei Hospital caused 15 deaths and 37 injuries. In particular, in 2020, fire accidents occurred to Taipei Mackay Memorial Hospital, Taipei Cheng Hsin Hospital, Taipei Municipal Chung Hsiao Hospital, National Taiwan University Hospital Yunlin Branch, National Cheng Kung University Hospital, Pingtung Hospital one by one. At our unit, in August 2020, one of the colleagues created thick smoke when using microwave oven. In October of the same year, there was white smoke from the autoclave and sparks from the operating bench wires. During the cardiac surgery in the operating room in November, due to the use of multiple large medical instruments at the same time, the power tripped in the room. Although it did not cause casualties, it has shown that in hospital fire safety prevention, the concept of disaster prevention of healthcare personnel should be improved.

Purpose

The purpose of the plan is to improve the awareness rate of fire prevention of surgical teams.

Method

This study used the concept of Healthcare Failure Mode and Effects Analysis (HFMEA) to develop a questionnaire on surgical teams' fire prevention awareness. The surgical teams (surgeons, nursing personnel and service personnel) were invited to complete the questionnaires anonymously. A total of 211 subjects were enrolled, with a valid questionnaire return rate of 89%.

Results

This study interfered with the formulation of the standard emergency disaster response process, held emergency disaster drill courses, and added the unit's daily fire source and high-power equipment checklists in the operating room. Besides, this study invited Australian fire emergency response scholars and medical policy scholars to the inspect the unit and offer suggestions and improvements. This study also coordinated with the Public Works Division to mark the maximum flow meter of the power socket in the operating room and installed the microwave infrared personnel sensor in the unit. The surgical team's awareness rate of fire prevention increased from 58% to 90%.

Conclusion

It is necessary to improve the fire response awareness and ability of the surgical teams to provide a safe working environment and maintain the safety of surgical patients.

Keywords: Operating Room, Fire Safety, Awareness

