UNIVERSITY OF TOLEDO

SUBJECT: CLINICAL ALARM SYSTEMS Procedure No: ME-08-012

PROCEDURE STATEMENT

In keeping with the patient safety goals of the University of Toledo Medical Center, it is the policy of the hospital to ensure the effectiveness of all clinical alarm systems.

PURPOSE OF PROCEDURE

Clinical alarm systems add an auditory means of identifying patients at risk for adverse events.

DEFINITIONS

These systems include, but are not limited to, physiological monitor alarms, elopement alarms, infusion pump alarms, ventilator alarms and nurse call systems.

PROCEDURE

The testing of a "system" is more than just testing the alarm itself. It is all-inclusive, from the technical circuitry of the alarm, to the volume set by the user, to the ambient noise in the environment.

I. Inventory

A. All equipment resident in the equipment inventory is to be evaluated using a risk assessment tool that considers the severity and probability of an appropriate response by staff to a clinical alarm. The rating criteria is identified below:

Severity Rating	4 - Serious personal injury or death 3 - Major personal injury 2 - Minor personal injury 1 – No significant injury
Probability of an inappropriate response by staff	4 – Probable 3 – Possible 2 – Improbable 1 - Not Possible
Assessment Scoring	Severity Rating x Probability Rating = Total Score

Those alarm systems with total scores greater than or equal to 9 will be evaluated further.

II. Testing

A. For alarms that are an integral part of a patient care device (infusion pump, ventilator, physiological monitor, etc.), the alarm functions will be tested as part of the scheduled inspection of the device, in accordance with the Biomedical Engineering Medical Equipment Management Plan. If the alarm fails to meet manufacturer's standards, the device will be repaired in accordance with the Biomedical Engineering Medical Equipment Management Plan.

B. For independent alarm systems (nurse call systems, med gas alarms, etc.), the system will be tested periodically, as determined in section I.A. above. If the alarm fails to meet manufacturer's standards, the device will be repaired in accordance with the Utility Management Plan.

III. User Responsibilities

A. Clinical staff members, as appropriate, are trained in the use of medical devices and alarms during initial orientation. The correct and safe use of these devices and alarms is also part of the annual competency review.

B. It is the responsibility of the user to ensure that alarm systems are used appropriately and safely, and that sound levels are sufficient to notify staff in the event of an alarm.

1. For alarms that are an integral part of a patient care device (infusion pump, ventilator, physiological monitor, etc.), the user must ensure that the alarms are set appropriately (alarm turned on, volume set to appropriate level, alarm parameters set appropriately for the patient, etc.) and functioning correctly before each use. At no time should a clinical alarm be turned off or silenced for an extended period of time. If the alarm system is found to be deficient, the device should be removed from service if possible, tagged and an occurrence report should be made out.

2. If an independent alarm system (nurse call systems, med gas alarms, etc.) is found to not respond appropriately, or volume levels are inadequate for the environment, the use should notify Facilities Maintenance as soon as possible. If possible, the system should be tested for proper operation by the user before each use.

IV. Purchasing Considerations

A. All medical devices considered for purchase will be evaluated as to the ease-of-use and effectiveness of alarms. Special attention should be given to the environment the device will be used in, to ensure appropriateness of the alarms.

B. The hospital will not purchase medical devices that allow any alarms to be permanently disabled without the review of Biomedical Engineering and Nursing.

REFERENCES:

Emergency Care Research Institute (ECRI). Guidance Article: Critical Alarms and Patient Safety – ECRI's Guide to Developing Effective Alarm Strategies and Responding to JCAHO's Alarm Safety Goal. Health Devices 2002 November; 31(11):397-417.

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