

CBAHI FMS Chapter Review

Why we need standards?

By Dr Ibrahim Andijani



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How safe is healthcare?

Healthcare

Driving

Regular air
transport

Mountain
climbing

Chemical
industry

European
railways

Bungee
jumping

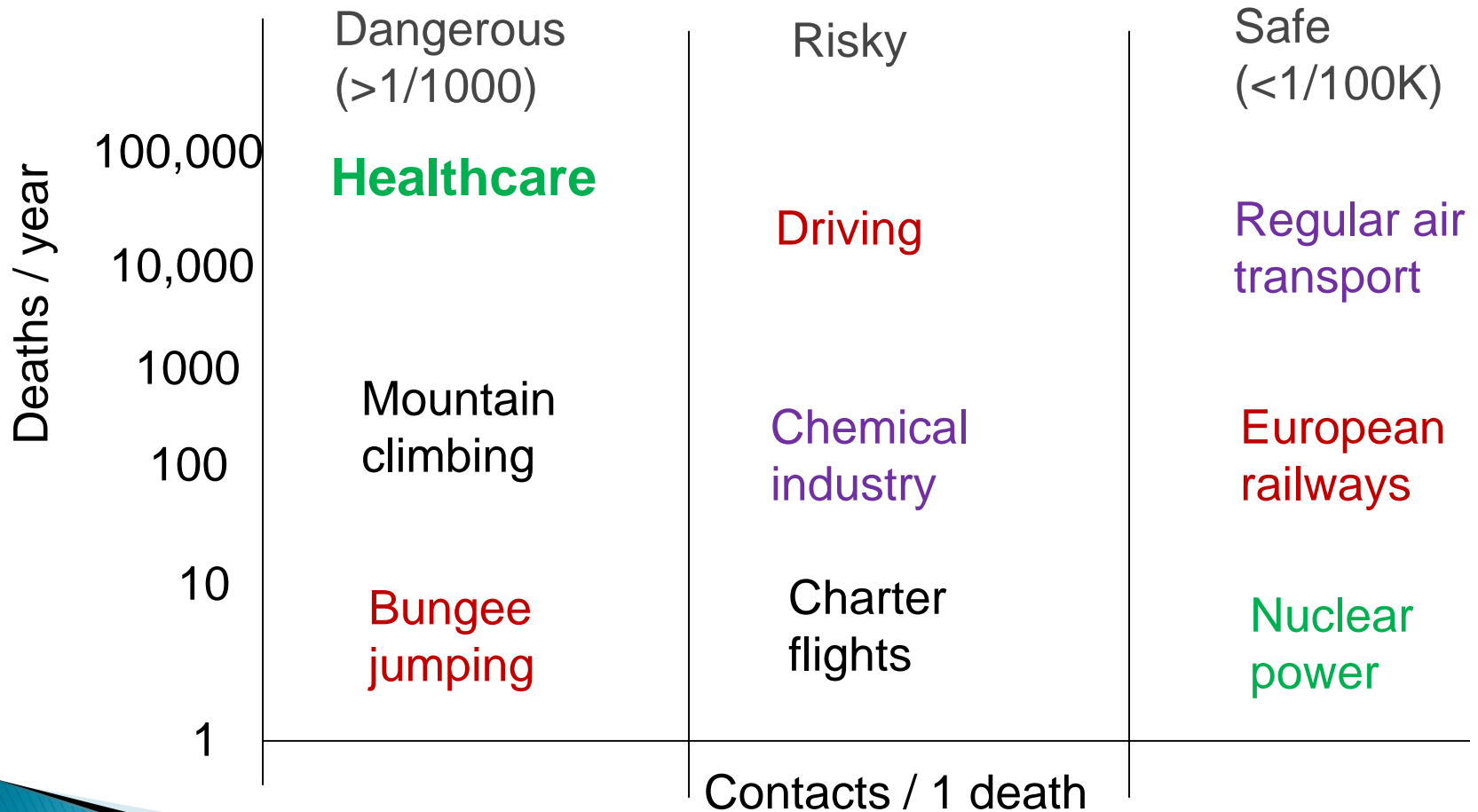
Charter
flights

Nuclear
power

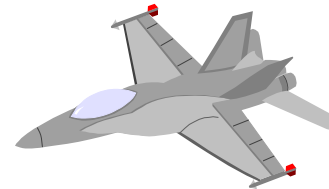
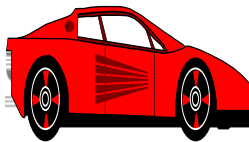
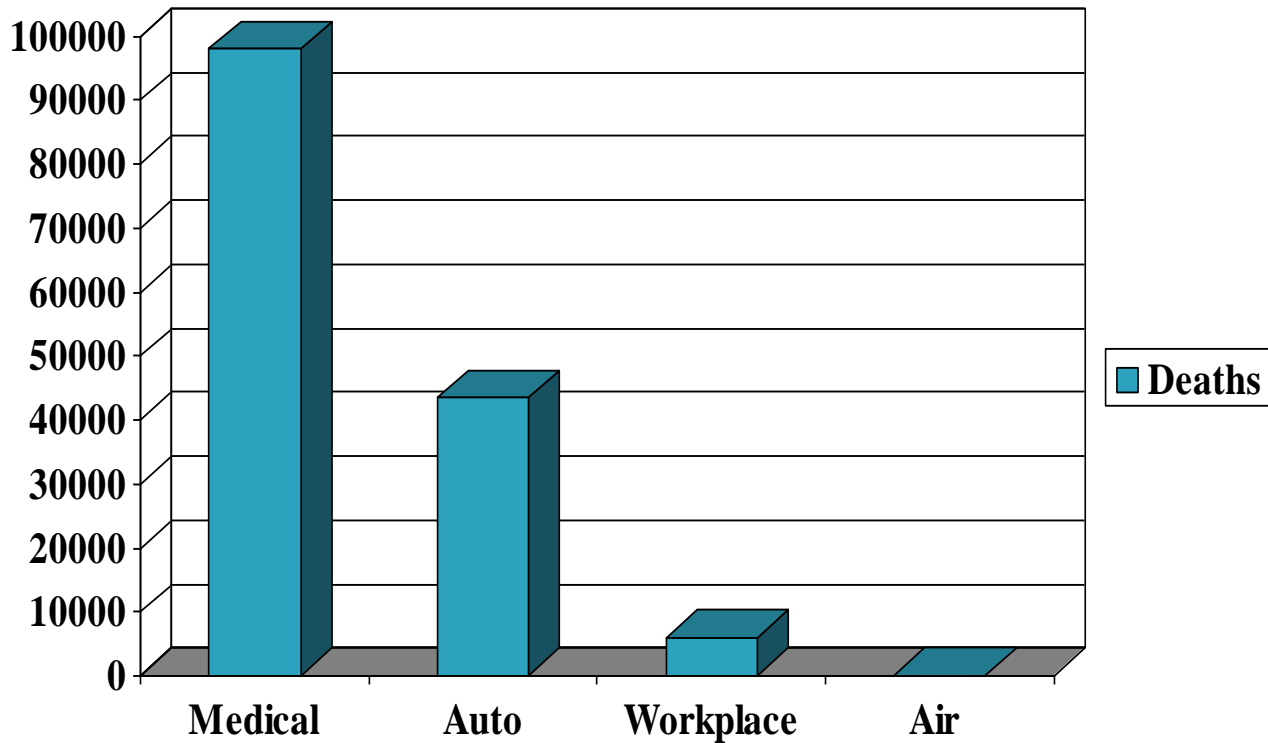
How safe is healthcare?

Dangerous ($>1/1000$)	Risky	Safe ($<1/100K$)
Healthcare	Driving	Regular air transport
Mountain climbing	Chemical industry	European railways
Bungee jumping	Charter flights	Nuclear power
Contacts / 1 death		

How safe is healthcare?



Annual Accidental Deaths (USA)



A fire started in a patient room. What the staff did ?

- ▶ Faisal escaped
- ▶ Sami Called civil defense 999
- ▶ Ali is trying to extinguish the fire with his Shomagh
- ▶ Adel called the hospital switch board
- ▶ Mary is trying to evacuate patients
- ▶ Hasan closed oxygen valve of the ward and patient died in room 212

Everyone took action in his own way.!!!



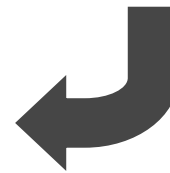
Solution

Standards

Preparation of plans, policies, regulations and programs

Staff training

Coordinated team work effort



PPPP

POLICIES & PROCEDURES, PLANS, PROGRAMS

- ▶ **Policies & Procedures**

Removal of equipment from service. Tagging medical equipment. Eliminate the use of extension cords. Inspection on all new equipment before put into operation.

- ▶ **Plans**

Medical Equipment Management Plan.

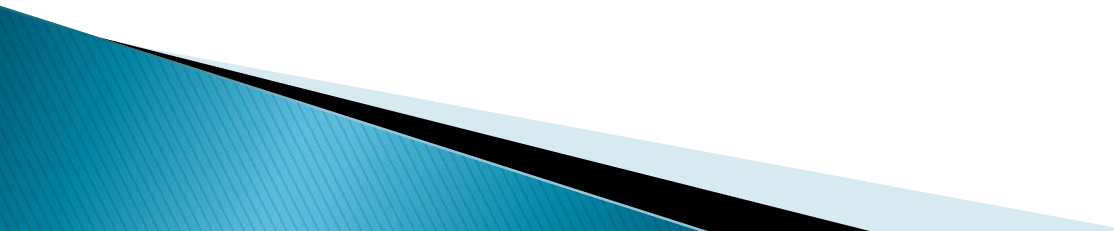
- ▶ **Programs**

Biomedical Engineering Training Program, PPM Program



FMS

Facility Management & Safety

1. Building Safety
 2. Security
 3. Hazardous Materials & Waste Disposal
 4. Emergencies
 5. Fire Safety
 6. Medical Equipment
 7. Utility Systems
- 

Engineering Standards

Europe & US

- ▶ A/C (ASHRAE)
- ▶ Electrical (NEC)
- ▶ Fire (NFPA)
- ▶ Elevators (EN81)
- ▶ Structure (NBC)

Residence, Commercial, Healthcare, and Factories.

Healthcare Standards

Saudi

CBAHI

المركز السعودي لاعتماد المنشآت الصحية

Saudi Central Board for Accreditation
of Healthcare Institution

Good News



Thank You!



CBAHI Medical Equipment Standards

By
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FMS Standards Overview

• [FMS.1 – FMS.10]

Facility Safety



• [FMS.11 – FMS.13]

Security



• [FMS.14 – FMS.15]

Hazardous Materials



• [FMS.16 – FMS.17]

Emergency Preparedness and Plans



• [FMS.18 – FMS.24]

Fire Safety



• [FMS.25 – FMS.27]

Medical Equipments



• [FMS.28 – FMS.39]

Utility Systems



Medical equipment

FMS.25 The hospital has a biomedical equipment plan to ensure that the medical equipment are regularly monitored, maintained, and ready for use.

- ▶ FMS.25.1 The hospital has adequate number of qualified biomedical staff.

Medical equipment

FMS.25 The hospital has a biomedical equipment plan to ensure that the medical equipment are regularly monitored, maintained, and ready for use.

- ▶ FMS.25.2 There is a written biomedical equipment plan that covers the following:
 - FMS.25.2.1 A comprehensive inventory of medical equipment with their corresponding locations.

Medical Equipment Inventory and their location:

Asset No.	Asset Description	Location	Manufacturer	Model	Serial No.	Supplier
007754	Anesthesia Machine	Operating Room	Drager	Fabius GS	ARUM-0155	Drager



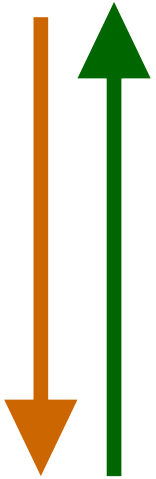
Medical equipment

FMS.25 The hospital has a biomedical equipment plan to ensure that the medical equipment are regularly monitored, maintained, and ready for use.

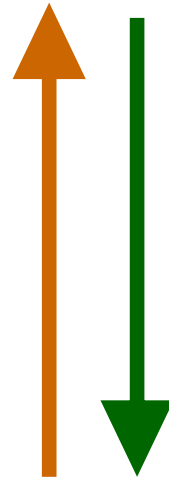
- ▶ FMS.25.2 There is a written biomedical equipment plan that covers the following:
 - FMS.25.2.2 Preventive maintenance program that conforms with the manufacturer's instructions.

PPM Vs CM

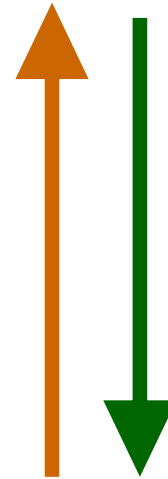
PPM



CM



ACCEDINETS



Medical equipment

FMS.25 The hospital has a biomedical equipment plan to ensure that the medical equipment are regularly monitored, maintained, and ready for use.

- ▶ **FMS.25.2 There is a written biomedical equipment plan that covers the following:**
 - **FMS.25.2.3 The program specifies, for each equipment, the frequency of checks, methods of checks, acceptance criteria, and actions to be taken in the event of unsatisfactory results.**

Medical equipment

FMS.25 The hospital has a biomedical equipment plan to ensure that the medical equipment are regularly monitored, maintained, and ready for use.

- ▶ **FMS.25.2 There is a written biomedical equipment plan that covers the following:**
 - **FMS.25.2.4 The program includes the process for investigation and follow-up of equipment failure that addresses reporting of failure, immediate remedial actions, assessment of the failure effect on reported results and services (needs alignment), and requalification of the equipment.**

Medical equipment

FMS.25 The hospital has a biomedical equipment plan to ensure that the medical equipment are regularly monitored, maintained, and ready for use.

- ▶ **FMS.25.2 There is a written biomedical equipment plan that covers the following:**
 - FMS.25.2.5 Electrical safety testing for patient related equipment.
 - FMS.25.2.6 History record for the maintenance schedule, failure incidence, and repairs done.

Medical equipment

FMS.25 The hospital has a biomedical equipment plan to ensure that the medical equipment are regularly monitored, maintained, and ready for use.

- ▶ FMS.25.3 Technical service manuals for all equipment are available at the biomedical workshops.
- ▶ FMS.25.4 Operator manuals are available at all departments using the equipment.

Medical equipment

FMS.25 The hospital has a biomedical equipment plan to ensure that the medical equipment are regularly monitored, maintained, and ready for use.

- ▶ FMS.25.5 The hospital ensures that all maintenance works are conducted by qualified and trained staff.

Medical equipment

FMS.25 The hospital has a biomedical equipment plan to ensure that the medical equipment are regularly monitored, maintained, and ready for use.

- ▶ FMS.25.6 Equipment maintenance and repairs are documented to help in the decision making for replacement.

Medical equipment

FMS.25 The hospital has a biomedical equipment plan to ensure that the medical equipment are regularly monitored, maintained, and ready for use.

- ▶ FMS.25.7 Investigation procedures conform to manufacturer's instructions.
- ▶ FMS.25.8 There is an equipment recall system that is implemented.

Medical equipment

FMS.25 The hospital has a biomedical equipment plan to ensure that the medical equipment are regularly monitored, maintained, and ready for use.

- ▶ FMS.25.9 Each department has a back-up or alternative for each critical equipment to cover for prolonged downtime.
- ▶ FMS.25.10 Preventative Maintenance data are used for upgrading/replacing of equipment.

Medical equipment

FMS.26 The hospital has policies and procedures that support the medical equipment management program.

- ▶ FMS.26.1 There is a policy to perform inspection on all new equipment for conformity before commissioning including those brought for "demos".

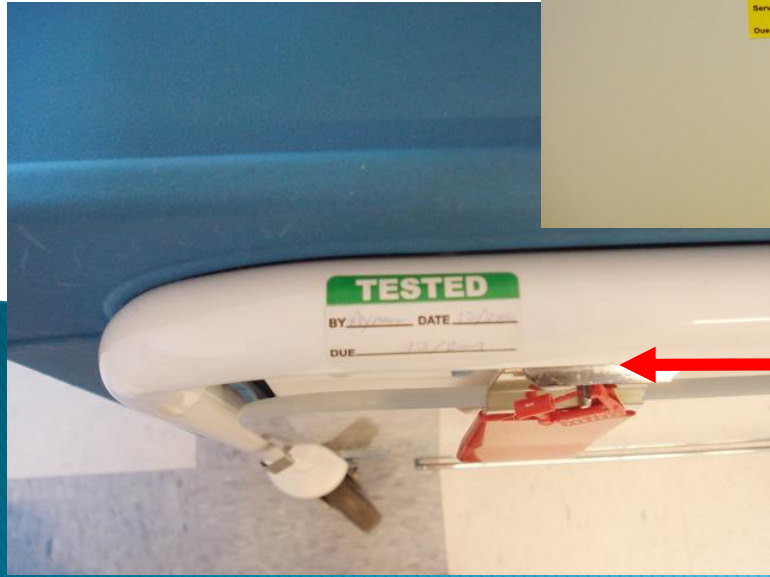
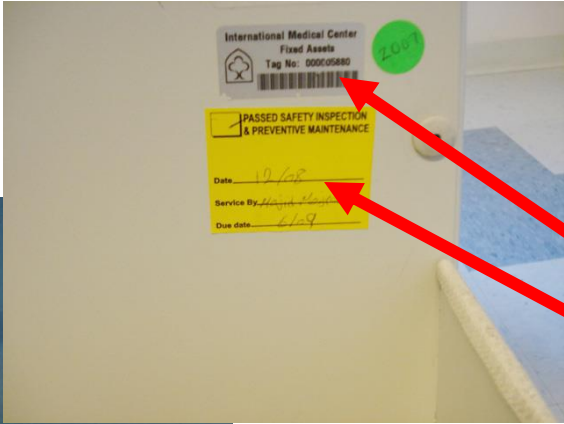
Medical equipment

FMS.26 The hospital has policies and procedures that support the medical equipment management program.

- ▶ FMS.26.2 There is a written policy for tagging medical equipment as follows:
 - FMS.26.2.1 Preventive maintenance with testing date and due date.
 - FMS.26.2.2 Inventory number.
 - FMS.26.2.3 Removal from service.
 - FMS.26.2.4 Electrical safety check.

Medical Equipment Tagging policy :

-To identify the status of the medical equipment for patient safety & which equipment needs the P.P.M. or an electric charging for the internal battery



Medical Equipment Tagging policy :

The Preventive Maintenance Sticker is Yellow safe for use & indicates the next due date for PM

ملصق أصفر للصيانة الوقائية

<input type="checkbox"/>	PASSED SAFETY INSPECTION & PREVENTIVE MAINTENANCE
Date	_____
Serviced by	_____
Due date	_____

The Electrical Safety check sticker is Dark Green

ملصق أخضر غامق للتأكد من سلامة الجهاز كهربائياً

ELECTRICAL SAFETY CHECK	
Tested By	_____
Date Tested	_____
Due Date	_____
ELECTRICAL SAFETY CHECK	
Tested By	_____
Date Tested	_____
Due Date	_____

The Warranty Sticker is Blue

ملصق أزرق للأجهزة تحت الضمان

This Equipment is Under WARRANTY	
Please Call Blomed First for Problems	
Installation Date	_____
End of Warranty	_____
Vendor	_____

Medical Equipment Tagging policy :

The Orange sticker (Attention) reminds the users to attach the device /equipment to the battery
ملصق برتقالي لإبقاء البطارية مشحونة



The Red sticker (Defective) indicates that the device/equipment is out of order (unsafe for use**)**
ملصق أحمر يشير إلى عطل الجهاز وبالتالي عدم استعماله



The equipment which need a functional test the appropriate tag will be the Tested one
ملصق يبين عمل الفحص وتاريخ الفحص القادم



Medical equipment

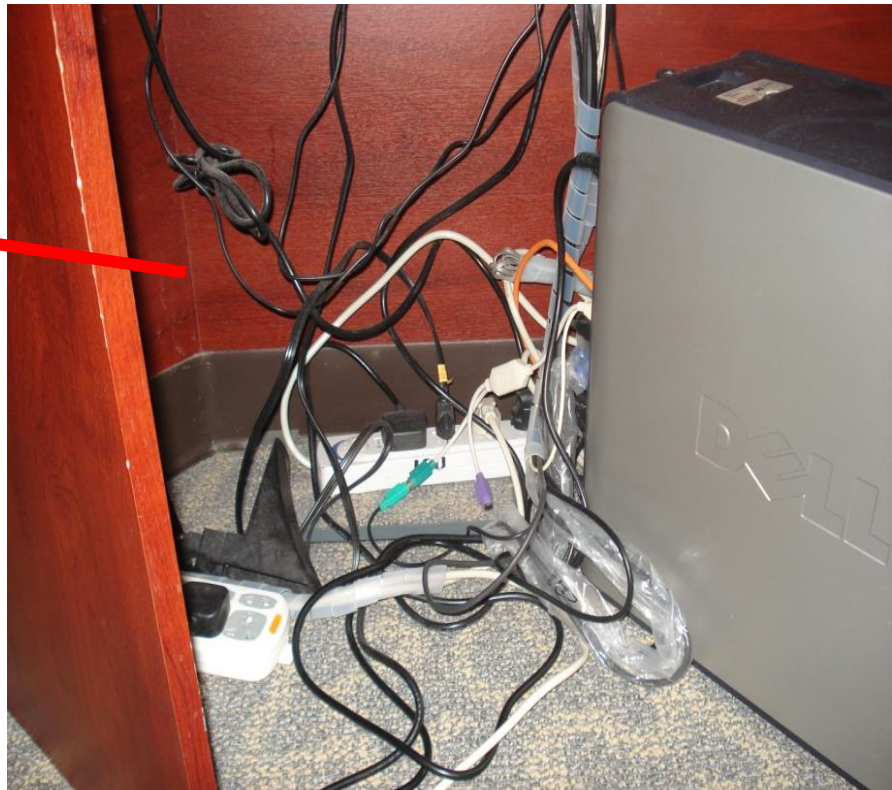
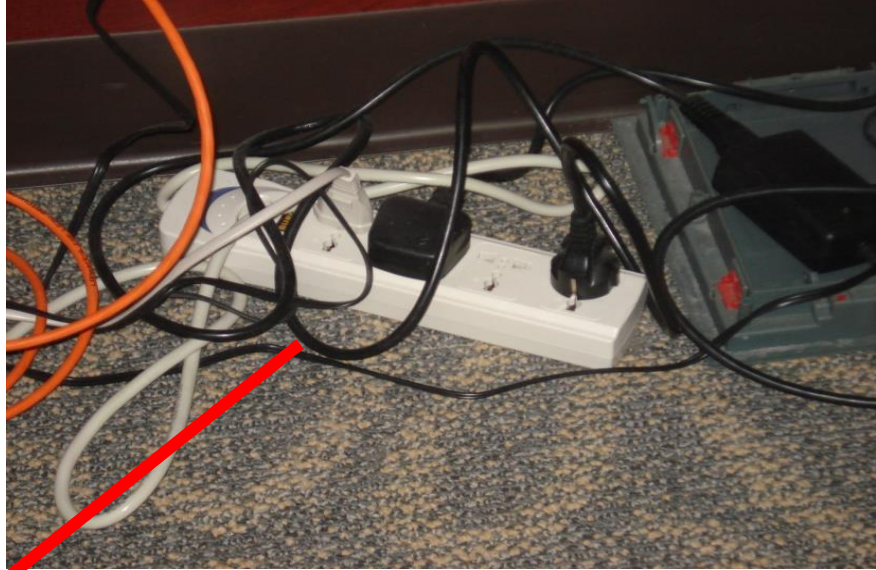
FMS.26 The hospital has policies and procedures that support the medical equipment management program.

- ▶ FMS.26.3 There is a policy for removal of equipment from service.
- ▶ FMS.26.4 There is a policy to address agent or contractor repairs.

Medical equipment

FMS.26 The hospital has policies and procedures that support the medical equipment management program.

- ▶ FMS.26.5 There is a policy to eliminate the use of extension cords.



Medical equipment

FMS.26 The hospital has policies and procedures that support the medical equipment management program.

- ▶ FMS.26.6 There is a policy to restrict the use of cellular phones in the intensive care units, operating room, and cardiology units, as needed.

الرنين المغناطيسي
MRI



جهاز سيمنس للتصوير بالرنين المغناطيسي
(الرنين)
SIEMENS
MAGNETIC RESONANCE IMAGING
(MRI)



Warning Sign
Magnetic field
Danger



Warning Sign
High frequency
Danger

ممنوع الاقتراب
NO APPROACH

ممنوع استخدام الهاتف
Please do not use mobile phone



ممنوع دخول أو اقتراب
الأشخاص غير المصرح لهم
Unauthorized approach / entry
forbidden



Medical equipment

FMS.27 Hospital staff are trained on safe operation of medical equipment.

- ▶ FMS.27.1 Hospital staff are trained to operate safely all medical equipment.
- ▶ FMS.27.2 The training includes physicians, nurses, and paramedics.

Medical equipment

FMS.27 Hospital staff are trained on safe operation of medical equipment.

- ▶ FMS.27.3 The training considers the following:
 - FMS.27.3.1 New equipment.
 - FMS.27.3.2 Staff transferred from a department to another.
 - FMS.27.3.3 New staff hired.
 - FMS.27.3.4 Recurrent misuse of equipment.

Thank You!



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