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Standard Guide for Full Body Spinal Immobilization Devices (FBSID) Characteristics [1]

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INTRODUCTION

The objective of this guide is to begin to address the recognized need to support and immobilize the components of the spine or spinal cord. Although this guide does not quantitatively address performance standards for this device, it does address the characteristics of the device(s) used to provide support and immobilization of the components of the central nervous system for the patient suspected of receiving trauma to that body system.

1. Scope

1.1 This guide establishes minimum standards for devices, designated here as full body spinal immobilization device(s) (FBSID), commonly known as long boards. The FBSID is designed to be used as the base structure for immobilization and transport of a patient with potential spine or spinal cord injury by emergency medical service personnel.

1.2 This guide does not identify specific degrees of limitation of motion achieved by placement of a FBSID on a patient. Definitive requirements for immobilization of the spine, and, in particular, the degree of limitation associated with the use of a FBSID, have not been established in the medical literature.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

F1177 Terminology Relating to Emergency Medical Services

2.2 *Centers for Disease Control Standard:*

Guidelines for Prevention of Transmission of HIV and HBV to Healthcare and Public Safety Workers[3]

2.3 *OSHA Standard:*

29 CFR 1910.1030 Occupational Exposure to Bloodborne Pathogens; Final Rule[4]

3. Terminology

3.1 *Definitions:*

3.1.1 *retention system*—a retention system is an adjunct to or an integral part of the primary platform that allows the patient to be securely attached to that platform, used in whatever configuration and size necessary to accomplish the goal, while still allowing reasonable and necessary access to the patient.

3.1.2 *spinal immobilization*—spinal immobilization refers to immobilization of the entire spine and its contiguous structures, the pelvis and skull.

3.1.3 *spine*—the spine shall include the cervical, thoracic, lumbar, and sacral vertebrae.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *directions of movement*—include flexion, extension, rotation, distraction, lateral motion, and axial compression motion.

3.2.2 *full body spinal immobilization device*— a platform upon which a patient can be secured, that will support the entire length and weight of the patient during immobilization and transportation.

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[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

[3] Available from Centers for Disease Control & Prevention (CDC), 1600 Clifton Rd., Atlanta, GA 30333, http://www.cdc.gov.

[4] Available from Superintendent of Documents, U.S. Government Printing Office, Washington, DC, 20402.

3.2.3 *immobilization*—limitation of motion.

3.3 For definitions of other terms used in this guide, refer to Terminology F1177.

4. Significance and Use

4.1 The intent of this guide is to identify characteristics which a FBSID shall possess.

4.2 It is not expected that the FBSID will be used alone to provide the entire scope of required immobilization. Clinical situations may require differing combinations of devices for adequate total spinal immobilization. A FBSID may be one of the devices.

4.3 A device intended for use with adult patients shall accommodate the 95th percentile adult American male.

4.4 Devices that are labeled as intended for pediatric use shall not be required to accommodate an adult.

4.5 The device shall be able to be used by the practitioner in an ergonomically sound manner.

5. Characteristics

5.1 The FBSID, when lifted in accordance with manufacturer's instructions, shall support the 95th percentile adult American male patient, full length in the supine position.

5.2 The FBSID shall incorporate a means to accommodate the ergonomically sound handling and lifting of the device when fully loaded.

5.3 The FBSID shall allow X-ray to be taken through it and be MRI compatible.

5.4 The FBSID shall allow for the use of adjunct devices as necessary such that immobilization is provided in the planes of motion as noted in 3.2.1.

5.5 The FBSID shall support lower extremities in such a manner that it prevents motion of the pelvis and spine.

5.6 There shall be a retention system used in conjunction with the immobilization platform.

6. Durability

6.1 The FBSID shall maintain stated characteristics throughout its lifetime as indicated by manufacturer's recommendations.

7. Maintenance

7.1 The FBSID shall be disposable, or easily cleaned, consistent with CDC and OSHA decontamination procedures, without deterioration of the product or the retention of cleaning agents that may be harmful to the patient.

7.2 The cleaning/decontamination procedure shall be explained in the manufacturer's product information.

8. Capability

8.1 This guide does not presently quantify the limitation of motion expected to be imposed upon a patient as a result of the application of a SPINE device. This capability has not been omitted due to a lack of need, but as a result of the fact that such quantitative requirements have not been identified in the medical literature. It is hoped that such requirements can be developed, and included in this guide at its next review.

9. Keywords

9.1 immobilization device; long board; spinal cord; spine