

CRUCIATE LIGAMENT INJURIES

Background

This case definition was developed by the Armed Forces Health Surveillance Branch (AFHSB) for the purpose of epidemiological surveillance of a condition important to military-associated populations. In the military, cruciate ligament injuries are occupational and recreational hazards, and can lead to a significant loss of workdays for those affected.

Clinical Description

The anterior and posterior cruciate ligaments of the knee are short, fibrous cords that restrict forward and backward movements of the tibia with respect to the femur; when a cruciate ligament is torn, the knee loses stability. Injuries of these ligaments can occur in the form of sprains, partial tears, and complete tears. The injury is often painful, depending upon the severity of injury experienced. Treatment for cruciate ligament injuries ranges from conservative measures to surgical repair.¹

Case Definition and Incidence Rules

For surveillance purposes, a cruciate ligament injury case is defined as:

- *One hospitalization* with any of the defining diagnoses of cruciate ligament injury (see ICD9 and ICD10 code lists below) in *any* diagnostic position; or
- *Two outpatient medical encounters*, occurring *within 180 days* of each other, with any of the defining diagnoses of cruciate ligament injury (see ICD9 and ICD10 code lists below) in *any* diagnostic position.

Incidence rules:

For individuals who meet the case definition:

- The incidence date is considered the date of the first hospitalization or outpatient medical encounter that includes a diagnosis of a cruciate ligament injury.
- An individual can be considered an incident case *once every 180 days*.

Exclusions:

- None

¹ Armed Forces Health Surveillance Center. Cruciate Ligament Injuries, Active Component, U.S. Armed Forces, 2000-2009. *Medical Surveillance Monthly Report (MSMR)*. 2011 February; Vol 18(2): 8-11.



Codes

The following ICD9 and ICD10 codes are included in the case definition:

| Condition | ICD-10-CM Codes | ICD-9-CM Codes |
|----------------------------|--|--|
| Cruciate ligament injuries | <i>M23.61 (other spontaneous disruption of anterior cruciate ligament of knee)</i> | 717.83 (old disruption of the anterior cruciate ligament) |
| | - M23.611 (other spontaneous disruption of anterior cruciate ligament of <i>right</i> knee) | 717.84 (old disruption of the posterior cruciate ligament) |
| | - M23.612 (other spontaneous disruption of anterior cruciate ligament of <i>left</i> knee) | <i>Note: ICD9 codes above translate to ICD10 M23.5- (chronic instability of knee). These codes are not included in the code set as they do not specify cruciate ligament injury.</i> |
| | - M23.619 (other spontaneous disruption of anterior cruciate ligament of <i>unspecified</i> knee) | |
| | <i>M23.62 (other spontaneous disruption of posterior cruciate ligament of knee)</i> | |
| | - M23.621 (other spontaneous disruption of posterior cruciate ligament of <i>right</i> knee) | |
| | - M23.622 Other spontaneous disruption of posterior cruciate ligament of <i>left</i> knee | |
| | - M23.629 (other spontaneous disruption of posterior cruciate ligament of <i>unspecified</i> knee) | |
| | <i>S83.5 (sprain of cruciate ligament of knee)</i> | |
| | <i>S83.50 (sprain of unspecified cruciate ligament of knee)</i> | |
| | - S83.501 (sprain of unspecified cruciate ligament of <i>right</i> knee) | |
| | - S83.501A (sprain of unspecified cruciate ligament of <i>right</i> knee, initial encounter) | |
| | - S83.502 (sprain of unspecified cruciate ligament of <i>left</i> knee) | |
| | - S83.502A (sprain of unspecified cruciate ligament of <i>left</i> knee, initial encounter) | |
| | - S83.509 (sprain of unspecified cruciate ligament of <i>unspecified</i> knee) | |
| | - S83.509A (sprain of unspecified cruciate ligament of <i>unspecified</i> knee, initial encounter) | |

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| | <i>S83.51 (sprain of anterior cruciate ligament of knee)</i> | |
| | - S83.511 (sprain of anterior cruciate ligament of <i>right</i> knee) | |
| | - S83.511A (sprain of anterior cruciate ligament of <i>right</i> knee, initial encounter) | |
| | - S83.512 (sprain of anterior cruciate ligament of <i>left</i> knee) | |
| | - S83.512A (sprain of unspecified cruciate ligament of <i>left</i> knee, initial encounter) | |
| | - S83.519 (sprain of anterior cruciate ligament of <i>unspecified</i> knee) | |
| | - S83.519A (sprain of unspecified cruciate ligament of <i>unspecified</i> knee, initial encounter) | |
| | <i>S83.2 (sprain of posterior cruciate ligament of knee)</i> | |
| | - S83.521 (sprain of posterior cruciate ligament of <i>right</i> knee) | |
| | - S83.521A (sprain of posterior cruciate ligament of <i>right</i> knee, initial encounter) | |
| | - S83.522 (sprain of posterior cruciate ligament of <i>left</i> knee) | |
| | - S83.522A (sprain of posterior cruciate ligament of <i>left</i> knee, initial encounter) | |
| | - S83.529 (sprain of posterior cruciate ligament of <i>unspecified</i> knee) | |
| | - S83.529A (sprain of posterior cruciate ligament of <i>unspecified</i> knee, initial encounter) | |

Development and Revisions

- In November of 2016 the case definition was updated to include ICD10 codes.
- The case definition was developed in 2011 by the AFHSC *Medical Surveillance Monthly Report (MSMR)* staff for use in a *MSMR* article on cruciate ligament injuries.¹ The case definition was developed based on reviews of the ICD9 codes, the scientific literature, and previous AFHSC analyses.

Case Definition and Incidence Rule Rationale

- The signs of cruciate ligament injuries are non-specific and health care providers may include the condition in the differential diagnosis for an individual prior to making a definitive diagnosis. As



such, the case definition requires two outpatient visits to confirm a true case. The diagnosis is permitted in any diagnostic position because of the possibility of co-morbid diagnoses.

- The interval of 180 days between outpatient visits is used because full recovery is usually achieved 6 months post-surgical repair for cases that require surgery, re-opening the possibility of subsequent injury.

Code Set Determination and Rationale

- The ICD9 and ICD10 codes were chosen to use all possible descriptions of cruciate ligament injuries. Codes that did not specifically specify cruciate ligament injury were not included.
- The ICD9 codes do not specify laterality (right or left side) of the injury. Therefore, there is a potential for underreporting if a Service member sustains separate injuries to the left and right knees in the same 180 day period. For example, if a Service member injures his right anterior cruciate ligament and meets the case definition, a subsequent injury to the left anterior cruciate ligament within 180 days of the right-sided injury would not be recorded as a new occurrence.

Reports

AFHSB reports on cruciate ligament injuries in the following reports:

- None

Review

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| Nov 2016 | Case definition reviewed and updated by the AFHSB Surveillance Methods and Standards (SMS) working group. |
| Jun 2011 | Case definition reviewed and adopted by Surveillance Methods and Standards (SMS) working group. |
| Dec 2010 | Case definition developed and adopted by the AFHSC MSMR staff. |

Comments

None

