

# Skin Laceration Cliff

## Branch Baseline

A laceration is defined as a torn and ragged wound (Merriam-Webster, 2007). The epidermis is ripped, cut, or torn open. Bleeding is an obvious symptom, but once the bleeding ceases or is under control, infection will become the primary health concern. Monitoring and caring for the laceration are crucial in minimizing the risk of infection and cosmetic damage. Healing is also faster with the appropriate medical attention. (Merck Manual, 2009)

### Incidence Data Included in the Model

The model imports the following incidence information from the IMM database: incidence data category, space adaption status, incidence data, incidence and occurrence distribution data and incidence data characteristics. Data category defines the type of data available for incidence calculations (i.e. raw data vs. fixed data). Space adaptation identifies medical events that onset occurs in the first 5 days of flight and does not reoccur. Incidence values vary by data category and define the number of medical events per person-year or medical events per person-at-risk for each medical condition. Incidence values can be modified by crew characteristics such as gender. Modifying characteristics are noted below and incidence values are listed individually for each characteristic. Distributions are assigned to medical events incidence values and occurrences in the model. For each crew member in a given trial, the incidence and number of occurrences of each medical condition are randomly selected from these probability distributions. Detailed descriptions of the distributions are included in the IMM Technical Description Document.

#### Incidence

|                   |           |
|-------------------|-----------|
| Data Category:    | In-flight |
| Space Adaptation: | No        |
| Incidence Type:   | Rate      |

#### Distribution Data

|             |         |
|-------------|---------|
| Incidence:  | Gamma   |
| Occurrence: | Poisson |

#### Data Characteristics

|                                                      |                                  |
|------------------------------------------------------|----------------------------------|
| Events:                                              | 6                                |
| Person Years:                                        | 45.493                           |
| Space Flight Incidence Rate (Events / Person Years): | $6 / 45.493 = 0.131888422394654$ |

### Incidence Comments

Source of incidence data is a compilation of available in flight medical events (Walton, 2010). Scheuring has reported 28 laceration cases in-flight. Our data was collected by reviewing medical records and there is no consistent recording or coding of lesions, thus laceration data in IMM compilation (2) is lower than lacerations reported by Scheuring's study (Scheuring, 2009). Based on our definition; we found 1 incident of laceration during landing in Apollo, which was sutured on the recovery ship (Hawkins, 1975), and it is included in our incidence rate. We also found anecdotal report of an injury in STS and attempted use of Dermabond for a nail tip injury, which we have not included in the incidence.

Added 5 new medical events (all STS) to the existing 1 event and 18.17 person years to the existing 27.36 person years based on the real world systems incidence data (Saile, 2017).

Updated the Person-Years based on the revised real world system integrated incidence data. The integrated person years changed from 18.17 to 18.13 so the conditions person years changed from 45.53 to 45.49 (Saile L., 2017)

### Information Regarding Prevention

**Pre-flight screening** includes skin visual inspection plus photographs of any areas of significant interest (Apollo Biomedical results, 1975 (Hawkins, 1975))

**Disqualifying criteria includes:** All injuries, contusions, fractures, or surgery until healed and not associated with functional deficit. Specific to skin are adherent scars that interfere with the wearing of personal equipment or that impair movement to the extent that emergency egress would be impeded; infections of the skin, systemic or superficial, if communicable, extensive, or not amenable to treatment; any skin disorder, acute or chronic, that is severe enough to cause interference with emergency egress, wearing of flight equipment, or successful mission completion (International Space Station Program, 2009).

To date the most frequent medical incidents in the NASA-Mir orbital space program have involved minor traumatic injuries to the skin and mucus membranes (Gontcharov, 2005).

LSAH findings indicate that superficial skin trauma is one of the most common reasons of crew members to access resources of the medical kit. Marshburn reports current use of skin adhesive applying it inside a glove box or while using eye protection; however its use has not been documented in the medical records reviewed during data collection. (Marshburn, 2008)

Unstoppable bleeding that may cause circulatory shock is addressed in the Hypovolemic Shock Clinical Finding Form.

### Incidence Level of Evidence (LOE)

The IMM level of evidence appropriate assessment of the quality of the IMM input data. Since IMM incorporates input data from a wide variety of sources including astronaut population, terrestrial or analog populations, and external models, an innovative approach to assess the quality of input data was required. Information obtained from the astronaut population and/or space flight is the more relevant so it is assigned the highest level of evidence and less relevant data sources are assigned a lower level of evidence.

| Citation       | LOE Value | LOE Category |
|----------------|-----------|--------------|
| Walton, 2010   | 1         | Incidence    |
| Saile L., 2017 | 1         | Incidence    |

### Incidence data not included in the model

The model pulls the incidence information from the IMM database ... the information shown below does not go into the model.

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#### Incidence

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|                   |       |
|-------------------|-------|
| Data Category:    | Fixed |
| Space Adaptation: | No    |
| Incidence Type:   | Rate  |

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#### Distribution Data

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|             |         |
|-------------|---------|
| Incidence:  | Fixed   |
| Occurrence: | Poisson |

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#### Data Characteristics

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|             |       |
|-------------|-------|
| Fixed Rate: | 0.064 |
|-------------|-------|

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#### Incidence Comments

Singer published a secondary analysis of National Ambulatory Medical Care Survey and population data from US census. Age specific incidences of all emergency department visits reported in 2002 were 7.5 percent of visits for age 18-35 and 5.3 percent of visits for age 36-64 (Singer, 2006). The reported incidence in the table below was calculated as the average of the two age specific age incidence information.

## Incidence data not included in the model

The model pulls the incidence information from the IMM database ... the information shown below does not go into the model.

### Incidence

|                   |           |
|-------------------|-----------|
| Data Category:    | In-flight |
| Space Adaptation: | No        |
| Incidence Type:   | Rate      |

### Distribution Data

|             |         |
|-------------|---------|
| Incidence:  | Gamma   |
| Occurrence: | Poisson |

### Data Characteristics

|                                                      |                                |
|------------------------------------------------------|--------------------------------|
| Events:                                              | 28                             |
| Person Years:                                        | 26.45                          |
| Space Flight Incidence Rate (Events / Person Years): | $28 / 26.45 = 1.0586011342155$ |

### Incidence Comments

Scheuring studied the musculoskeletal injuries and minor trauma injuries of US astronauts. He reported 28 lacerations over 26.45 person-years period = 1.06 incidence rate. (Scheuring, 2009)

Challenges in collecting and analyzing the data were also reported by Scheuring, i.e. no referencing the crew member medical record, not including pre-flight and post-flight findings, data not always elicited from crew members, and changing manner in which data was collected (Scheuring, 2009).

### Incidence data not included in the model

The model pulls the incidence information from the IMM database ... the information shown below does not go into the model.

#### Incidence

|                   |       |
|-------------------|-------|
| Data Category:    | Fixed |
| Space Adaptation: | No    |
| Incidence Type:   | Rate  |

#### Distribution Data

|             |         |
|-------------|---------|
| Incidence:  | Fixed   |
| Occurrence: | Poisson |

#### Data Characteristics

|             |      |
|-------------|------|
| Fixed Rate: | 0.38 |
|-------------|------|

#### Incidence Comments

Wear studied overall injury rates in Shuttle astronauts. The reported incidence rate per 100 person years, during mission period was 38.6, while incidence rate for a comparison group was 1.3. We calculated the incidence 38.6/100 person-years. Wear's article does not include standard error, standard deviation, or confidence interval. (Wear, 1999)

## Incidence data not included in the model

The model pulls the incidence information from the IMM database ... the information shown below does not go into the model.

### Incidence

|                   |       |
|-------------------|-------|
| Data Category:    | Fixed |
| Space Adaptation: | No    |
| Incidence Type:   | Rate  |

### Distribution Data

|             |         |
|-------------|---------|
| Incidence:  | Fixed   |
| Occurrence: | Poisson |

### Data Characteristics

|             |      |
|-------------|------|
| Fixed Rate: | 0.04 |
|-------------|------|

### Incidence Comments

From 1997 to 2000, Thomas reported rates of medical events by age among officers and enlisted crew members from 240 submarine patrols. Officers (30+ years) reported 3.0 open wound/100 person-years and 1.0 superficial injury/100 person-years, enlisted crewmen 30+ years, 5.1 open wound, 1.2 superficial injuries. Study included 13,441 subjects, with over 2 million person-days at risk. For our purposes, the officers are most analogous to current space program participants. Therefore the incidence rate 0.04 per person year, which is the sum of open wounds and superficial injuries for officers is noted. No confidence interval, standard deviation, or standard errors were reported in the article.

Officers age 30 and older had higher rates of injuries, than did their younger counterparts. Among enlisted men, the highest morbidity rate was for injuries. Enlisted men under the age of 30 had nearly twice the rate of injuries as older crew members. Higher educational level was associated with lower rate of accidents. Life aboard a submarine is similar in many ways to that aboard a spacecraft, including isolation, closed environment with artificial atmosphere, working and living in crowded quarters, limited space for medical supplies, non-physician health care providers, pre-mission health screening, and the precedence of the mission over individual needs. However, there are also some important differences between space and submarine environments which would influence the type of health events seen as well as the ability to treat them. These include conditions of microgravity in space, age and educational status of the crew, the ability to communicate outside of the vessel, the size of the crew, and the role of medical care providers. The officers are most analogous to current space program participants (Thomas, 2003).

## Treatment and Outcomes

Based on the best evidence available best and worst case percentage ranges are assigned. The medical condition is divided into three clinical phases in all three clinical phases a functional impairment is assigned. The clinical phase I and II's functional impairments remain for the duration for that respective clinical phase. The function impairment in clinical phase III represents final impairment for this medical condition and remains for the rest of the mission. Other mission end states include evacuation and loss of crew life.

The IMM checks medical resource availability once the number of medical events and scenarios has been established. If there is not sufficient essential resources called out in the ClIFF, then the medical condition will go down an untreated best or worst case scenario pathway.

The table below summarizes the treated and untreated best and worst case scenarios.

|                                                               | Clinical Phase I<br>Diagnosis & Initial<br>Treatment <sup>1</sup> |                   | Clinical Phase II<br>On-going Treatment /<br>Convalescence <sup>2</sup> |                                    | Clinical Phase III<br>Recovered / Mission End<br>State <sup>3</sup> |               |               |
|---------------------------------------------------------------|-------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------|------------------------------------|---------------------------------------------------------------------|---------------|---------------|
|                                                               | FI*<br>(%)                                                        | Duration<br>(hrs) | FI*<br>(%)                                                              | Duration (hrs)<br>(Min - ML - Max) | FI*<br>(%)                                                          | EVAC**<br>(%) | LOCL**<br>(%) |
| ISS-based Treatment<br>(best case scenario %: 71.43 - 85.71)  | 100                                                               | 0.5 - 0.75        | 0 - 27                                                                  | 120 - 156 - 192                    | 0                                                                   | 0             | 0             |
| ISS-based Treatment<br>(worst case scenario %: 14.29 - 28.57) | 100                                                               | 0.75 - 1.5        | 11 - 42                                                                 | 120 - 156 - 192                    | 0 - 42                                                              | 0             | 0             |
| Untreated Best Case                                           | N/A                                                               | N/A               | 0 - 42                                                                  | 120 - 156 - 192                    | 0 - 27                                                              | 0             | 0             |
| Untreated Worst Case                                          | N/A                                                               | N/A               | 30 - 58                                                                 | 120 - 156 - 192                    | 30 - 58                                                             | 0 - 100       | 0             |

<sup>1</sup>Clinical Phase I: Clinical phase I covers only the initial assessment of the affected crew member to define his or her medical condition, and completion of appropriate initial treatment to stabilize the crew member. While the affected crew member is being assessed, he or she is not able to perform any assigned tasks, thus Functional Impairment during this phase is considered 100%. In the untreated case, there is no diagnosis performed or treatment given, therefore Functional Impairment and Duration will always be "not applicable".

<sup>2</sup>Clinical Phase II: On-going Treatment and Convalescence- During clinical phase II, the affected crew member is receiving any appropriate follow-on treatment for his or her medical condition to allow the crew member to recover as much as he or she is able to recover in the ISS environment. Clinical phase II also encompasses relapses or reoccurrences of the same original medical condition in clinical phase I necessitating additional treatment or recovery time due to unsuccessful primary treatment response. The duration in Clinical Phase II is expressed in minimum, most likely (ML) and maximum hours. This was updated for future capabilities in IMM but is currently not being used by the model.

<sup>3</sup>Clinical Phase III: Recovered/Mission End State- Clinical phase III is reached once the affected crew member has recovered from the medical condition as much as he or she is able to recover in the ISS environment. This may or may not be recovery from the given medical condition to the full extent possible. If this "recovered" state results in an evacuation or loss of the crew member, this will be noted in the mission end state results.

\*Functional Impairment (FI) is a measure of the affected crew member's health and performance ability.

\*\*Two mission end state results are addressed in the ClIFF: 1) Evacuation (EVAC) - crew and patient are evacuated from the spacecraft due to the medical condition, and 2) Loss of crew (LOCL) - death of affected crew member due to medical condition. EVAC is considered as an end state result if any of the following criteria are met: 1) potential LOCL, 2) potential significant permanent impairment, or 3) potential intractable pain. Probability distributions are assigned for each range of values within the Table of Treatments and Outcomes.

Refer to the Integrated Medical Model Technical Document for more information on how risk is reported by the IMM, Crew Health Index (CHI) and Quality Adjusted Mission Time calculations.

Definition and Probability of Best and Worst Case Scenario: (includes definitions of best and worst case scenarios and identifies the probability of those scenarios.)

### Scenario Comments

The **best case scenario** is defined as a laceration that requires skin adhesive or dressing for repair. The **worst case scenario** is defined as a laceration requiring sutures or staples for repair.

**Percentages of how often best versus worst case scenarios occur:** based on the Real World Systems data there were no worst cases so to integrate this data into the BC/WC percentage the algorithm developed with the original data set was used for all the medical events in both data sets. Therefore, if the next case is a worst case we would 2/7 or 29% of cases as worst cases. If the next case is best case, we would have 6/7 or 86%. Thus the percentages for worst case is 14-29% (Saile L., 2017)

### Best Case Comments

During **Clinical Phase I**, by definition, functional impairment is estimated to be 100%, and the duration is estimated to be 30 to 45 minutes, which is the time it takes to follow the procedures indicated in the ISS medical checklist for wound care/lacerations which do not require sutures or staples. (International Space Station Integrated Medical Group, 2006)

During **Clinical Phase II**, based on Table 8-2 skin disorders (American Medical Association, 2008), Functional Impairment (FI) is 0-27%, **Class 0**, 0% Skin disorder signs have been present in the past but are currently present <1% of the time, no medication is necessary, no interference with activities of daily living. **Class 1**, 1 to 9%, signs and symptoms are present 1 to 30% of the time; may intermittently require treatment with topical medications; when signs and symptoms are present there is minimal interference with ADLs. **Class 2 FI**, 11 to 27%, signs and symptoms are present > 30 to 60% of the time; often require treatment with topical or systemic medications; when signs and symptoms are present there is mild interference with some ADLs. Duration is estimated in 5 to 8 days (International Space Station Integrated Medical Group, 2006). During **Clinical Phase III**, total recovery is expected in the best case scenario and FI is 0%. EVAC and LOCL are not expected. (Hollander, 1999); (Edlich, 2010)

### Worst Case Comments

During **Clinical Phase I**, by definition, functional impairment is estimated to be 100%, during 45 to 75 minutes, which is the time it takes to follow the procedures indicated in the ISS medical checklist (International Space Station Integrated Medical Group, 2006) for wound care/lacerations, allowing extra time for stopping bleeding and suturing or stapling the wound. During **Clinical Phase II** FI is estimated to be 11 to 42%. **Class 2**, 11 to 27%, signs and symptoms are present > 30 to 60% of the time; often require treatment with topical or systemic medications; when signs and symptoms are present there is mild interference with some ADLs. **Class 3**, 30-42%, signs and symptoms are present > 60 to 90% of the time; require intermittent to constant treatment with topical or systemic medications; when signs and symptoms are present there is moderate interference with some ADLs. Duration of 5 to 8 days which is the estimated time for suture or staple removal in ISS procedures (International Space Station Integrated Medical Group, 2006) During **Clinical Phase III**, FI is estimated to be 0% to 42%, including the possibility of total recovery after treatment and partial recovery with limits imposed by pain, or limited activity dependent on location and severity of injury. (American Medical Association, 2008) EVAC and LOCL are not expected. (Hollander, 1999); (Edlich, 2010)

### Untreated Best Case Comments

During **Clinical Phase II** FI without available treatment is estimated to be 11 to 42%, **Class 2**, 11 to 27%, signs and symptoms are present > 30 to 60% of the time; when signs and symptoms are present there is mild interference with some ADLs. **Class 3**, 30-42%, signs and symptoms are present > 60 to 90% of the time; when signs and symptoms are present there is moderate interference with some ADLs. Lacerations may recover, albeit with some limited mobility and unsightly scars (Singer, 2006). During **Clinical Phase III**, FI is estimated to be 0% to 27%, including the possibility of total recovery after treatment and partial recovery with limits imposed by pain, or limited activity dependent on location and severity of injury. (American Medical Association, 2008) EVAC is not expected. LOCL is not expected.

### Untreated Worst Case Comments

During **Clinical Phase II**, FI is estimated to be 30 to 58%, without available treatment **Class 3**, 30-42%, signs and symptoms are present > 60 to 90% of the time; when signs and symptoms are present there is moderate interference with some ADLs. **Class 4**, 45 to 58%, signs and symptoms are present > 90% of the time; there is severe interference with most ADLs to the extent that confinement may be required (American Medical Association, 2008). Lacerations may recover, albeit with some limited mobility and unsightly scars over a 5-8 day time period. Singer (Singer, 2006) During **Clinical Phase III**, FI is estimated to be 0% to 27%, including the possibility of total recovery after treatment and partial recovery with limits imposed by pain, or limited activity dependent on location and severity of injury. On-board medical care is extremely limited. As a result, all patients with serious injuries will be evacuated to earth as soon as possible (Kirkpatrick, 2009). There is no capability in ISS or STS for repairing complex wounds such as hand tendon, eyelid or lacrimal sac lacerations; wilderness medical principles apply (Mashburn, 2008), i.e. stabilization and appropriate type of evacuation (Johnson, 2009). Thus EVAC is estimated to be 0-100%. LOCL is not expected.

#### Treatment and Options Level of Evidence (LOE)

The IMM level of evidence appropriate assessment of the quality of the IMM input data. Since IMM incorporates input data from a wide variety of sources including astronaut population, terrestrial or analog populations, and external models, an innovative approach to assess the quality of input data was required. Information obtained from the astronaut population and/or space flight is the more relevant so it is assigned the highest level of evidence and less relevant data sources are assigned a lower level of evidence.

| Citation                           | LOE Value | LOE Category |
|------------------------------------|-----------|--------------|
| American Medical Association, 2008 | 3         | FI           |
| Hollander, 1999                    | 3         | EVAC         |
| Edlich, 2010                       | 3         | EVAC         |
| Kirkpatrick, 2009                  | 5         | EVAC         |
| Johnson, 2009                      | 3         | EVAC         |
| Saile L., 2017                     | 1         | BCWC         |

#### **Additional Comments**

We searched PubMed using the terms skin lacerations, skin lacerations and incidence, skin and soft tissue injuries and epidemiology, minor injuries and space medicine. Our search yielded broad epidemiological information. We then refined the search by relevance and year of publication. There is a wide variation in incidence rates.

## The Resource Table (RT)

| Resource                                             | Units<br>Required<br>Best<br>Case | Units<br>Required<br>Worst<br>Case | Units<br>Available<br>At Start<br>Of<br>Mission | Consumable | Essential | Rationale                                                                                                                                                       |
|------------------------------------------------------|-----------------------------------|------------------------------------|-------------------------------------------------|------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Absorbable Suture 3.0                                | 0                                 | 1                                  | 2                                               | Yes        | Yes       | For wound closure.                                                                                                                                              |
| Bacitracin 500 units/gm. 28 gm tube                  | 0.1                               | 0.1                                | 1                                               | Yes        | Yes       | anti infective - topical                                                                                                                                        |
| BZK wipes                                            | 0                                 | 8                                  | 60                                              | Yes        | No        | Wound area cleaning (when suturing or stapling); To clean used instruments after surgical repair and prior to re-stowage; Cleaning injection port of saline bag |
| Camera                                               | 1                                 | 1                                  | 1                                               | No         | No        | To document rash, or wound                                                                                                                                      |
| CMRS                                                 | 0                                 | 1                                  | 1                                               | No         | No        | Restrain crew member to ensure safety                                                                                                                           |
| Dermabond applicator 0.5mL                           | 1                                 | 0                                  | 4                                               | Yes        | Yes       | liquid skin adhesive used by doctors to close wounds To piece nail fragments together and bond to the nail bed                                                  |
| Gauze pads (4x4)                                     | 2                                 | 12                                 | 50                                              | Yes        | No        | to absorb blood or fluids from skin                                                                                                                             |
| Iodine Swab Stick                                    | 2                                 | 2                                  | 14                                              | Yes        | No        | to clean wound surrounding area                                                                                                                                 |
| Lidocaine (Xylocaine) plain 1%, 10mL multi dose vial | 0                                 | 0.5                                | 3                                               | Yes        | Yes       | To numb area where sutured are to be placed.                                                                                                                    |
| Medical tape                                         | 0.03                              | 0.06                               | 5                                               | Yes        | No        | single-coated tapepressure adhesive tape                                                                                                                        |
| Needle (23G)                                         | 1                                 | 1                                  | 20                                              | Yes        | No        | To draw medication from vial                                                                                                                                    |
| Needle Driver (AA)                                   | 0                                 | 1                                  | 1                                               | No         | Yes       | To drive suture needle through skin                                                                                                                             |
| Nitrile gloves (large, medium, and small) (pair)     | 2                                 | 2                                  | 30                                              | Yes        | No        | Personal Protective equipment for CMO                                                                                                                           |
| Nylon Suture 2.0                                     | 0                                 | 1                                  | 2                                               | Yes        | Yes       | For wound closure                                                                                                                                               |
| Nylon Suture 5.0                                     | 0                                 | 1                                  | 2                                               | Yes        | No        | For wound closure.                                                                                                                                              |
| Scissors - Trauma                                    | 1                                 | 1                                  | 1                                               | No         | Yes       | To cut gauze, tape                                                                                                                                              |
| Sharps container                                     | 0                                 | 1                                  | 40                                              | No         | No        | To dispose of medical waste such as used medical needles, scalpels, IV catheters, razors, vials                                                                 |
| Skin Staple Remover                                  | 0                                 | 1                                  | 1                                               | No         | Yes       | To remove skin staples from suture line.                                                                                                                        |
| Skin stapler                                         | 0                                 | 1                                  | 2                                               | Yes        | Yes       | to close skin wounds                                                                                                                                            |
| Sterile gloves (large, medium, and small) (pair)     | 0                                 | 1                                  | 6                                               | Yes        | No        | worn when there is contact with sterile instruments or a patient's sterile part                                                                                 |
| Suture Scissors (BB)                                 | 0                                 | 1                                  | 1                                               | No         | No        | To cut excess suture                                                                                                                                            |
| Toothed Forceps (EE)                                 | 0                                 | 1                                  | 1                                               | No         | No        | To capture ends of sutures                                                                                                                                      |
| Tylenol (Acetaminophen) 325 mg                       | 4                                 | 8                                  | 250                                             | Yes        | Yes       | pain relief                                                                                                                                                     |

| Resource                                                      | Units<br>Required<br>Best<br>Case | Units<br>Required<br>Worst<br>Case | Units<br>Available<br>At Start<br>Of<br>Mission | Consumable | Essential | Rationale   |
|---------------------------------------------------------------|-----------------------------------|------------------------------------|-------------------------------------------------|------------|-----------|-------------|
| Vicodin HP (Hydrocodone/<br>Acetaminophen HP) 10 mg/660<br>mg | 0                                 | 6                                  | 30                                              | Yes        | Yes       | Pain relief |

#### Resource Comments

The source of resources table data was derived from The ISS Medical Check List (International Space Station Integrated Medical Group, 2008).

#### Required Resources Level of Evidence (LOE)

The IMM level of evidence appropriate assessment of the quality of the IMM input data. Since IMM incorporates input data from a wide variety of sources including astronaut population, terrestrial or analog populations, and external models, an innovative approach to assess the quality of input data was required. Information obtained from the astronaut population and/or space flight is the more relevant so it is assigned the highest level of evidence and less relevant data sources are assigned a lower level of evidence.

| Citation                                                   | LOE Value | LOE Category |
|------------------------------------------------------------|-----------|--------------|
| International Space Station Integrated Medical Group, 2008 | 2         | Resources    |

#### Level Of Evidence

| Input Data                 | LOE Average | Description | Range |
|----------------------------|-------------|-------------|-------|
| Incidence                  | 1           | Excellent   | 1-2   |
| Functional Impairment      | 3           | Good        | 2.1-3 |
| Best Case / Worst Case     | 1           | Fair        | 3.1-4 |
| EVAC / LOCL                | 3.5         | Poor        | 4.1-5 |
| Resources                  | 2           |             |       |
| <b>QUALITY OF EVIDENCE</b> | <b>2.1</b>  |             |       |

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