Installation Injury Summaries for ACTIVE DUTY SOLDIERS

What are Installation Active Duty Injury Summaries?
The APHC Installation Active Duty Injury Summary is an analysis of military medical records for Active Duty Army personnel working on Army or Joint Base installations. Soldiers’ new-onset injury rates and injury causes are described for each installation, Major Command, and Army-wide. Each installation’s annual Injury Summary includes:

- Number of medical encounters (visits), Soldiers affected, and hospital bed days (current year)
- Injury and overuse injury rates (6 year period)
- Injury rates by age and year (6 year period)
- Injury rates by gender and age (current year)
- Top 5 outpatient injury causes (current year)
- Quarterly injury rates (medical encounters, 4 years)
- Red/amber/green injury rate thresholds (see Figure)

Figure. Example-Installation Active Duty injury rates with red/amber/green thresholds

What are the data sources?
Medical visits for Active Duty Soldiers are obtained from the Defense Medical Surveillance System (DMSS), maintained by the Defense Health Agency. Injury rates are determined through queries of inpatient and outpatient records (direct medical treatment facilities (MTF) and purchased care (TRICARE) for primary diagnoses of injuries. The top five injury causes are identified from ICD external cause codes included in medical records.

What are the leading Active Duty injury types?
The vast majority of Army injuries are musculoskeletal injuries treated through outpatient services, which includes physical therapy. Though the installation Active Duty summaries do not describe specific types of body regions, evidence has repeatedly shown that the lower extremities (e.g., foot, ankle, knee, lower leg) and back are the most commonly injured. The most common injuries are:

- Sprains (injury to joint, usually acute)
- Strains (injury to muscle or tendon, from an acute event or from repetitive overuse)
- Inflammation/pain (from acute event or overuse)

Stress fractures are less frequently reported, but are costly outpatient injuries that are a concern especially during initial entry training.

What are the leading causes of Active Duty injuries?
Cause codes in a medical record provide some insight to the conditions or activity causing an injury. Unfortunately, these codes are not often documented. In CY15, less than 15% of injuries had a recorded cause code. Even when documented, a cause code is often only a generic description. The leading cause of hospitalized injuries has routinely been motor-vehicle accidents, followed by falls. But because the vast majority of injuries are treated on an outpatient basis, the installation summaries focus on outpatient causes. Recent data (CY15) found the leading causes of outpatient visits (for cause-coded injuries) to be:

- Overexertion, 22%
- Falls, 16%
- Being struck by or against something, 15%
- Natural and environmental hazards, 9%
- Motor vehicle traffic accidents, 8%

Given the limitations, installations should investigate their leading injury causes to identify high-risk activities or conditions. For example, overexertion injuries may occur as acute or overuse injuries, and during different activities (e.g., physical training, sports, or on the job).

Who are at the greatest risk for Active Duty injuries?
Females typically have higher injury rates than men. Rates tend to be higher in Soldiers >45 years of age. Scientific evidence also indicates that Soldiers who have poor physical fitness, start or increase physical training with inadequate progression, have very high or very low body mass index (BMI), very high or very low flexibility, or use tobacco are at greater risk of injury. Risks among different military occupations are still being evaluated.

In 2015, nearly 300,000 Soldiers were affected by injuries that resulted in over 1,100,000 medical visits (more than any other medical condition). The use of medical record diagnoses (International Classification of Disease (ICD)), TRICARE claims, and other Active Duty injury data (e.g., safety reports) provides installation personnel with a comprehensive awareness of their injury problem.

Installation-specific summaries help leadership prioritize prevention efforts to focus scarce resources on the leading injury causes, activities, and/or hazards. To complete the overall installation “injury picture”, annual installation summaries of civilian injury data are also prepared.

Can’t access your installation injury summary? Contact the APHC Injury Prevention Division (IPD)

Summaries are updated quarterly and available online on three CAC-enabled dashboards:

- Public Health 360 (PH360)
- Public Health Management System (PHMS)
- Army Strategic Management System (SMS)

Contact the APHC Injury Prevention Division (IPD) at 800-464-2450 or via email at APHC-InjuryPrevention@mail.mil.

For more information, visit the APHC website at aphc.mbx.injuryprevention@mail.mil.
How can common Active Duty injuries be prevented?

The general recommendations below can help reduce occurrence of injuries. The Information Sources offer further guidance.

<table>
<thead>
<tr>
<th>Primary Injury Causes</th>
<th>Common Activities &amp; Hazards</th>
<th>Injury Prevention Recommendations</th>
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<tbody>
<tr>
<td>Overexertion</td>
<td>Single acute events</td>
<td>• Modify workplace procedures:</td>
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<tr>
<td></td>
<td>• Lifting, lowering, pushing, pulling items at work, home, in hospital</td>
<td>1, 2, 12, 14</td>
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<td></td>
<td>• Physical training/sports - lifting twisting, pivoting too quickly or too much</td>
<td>- Eliminate unnecessary movement of material</td>
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<td>Repetitive/overuse</td>
<td>• Use proper individual procedures: 1, 12, 14</td>
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<td>• Running, road marching</td>
<td>- Reduce weights (smaller/lighter containers)</td>
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<td>• Work-related activity (lifting, pushing and pulling)</td>
<td>- Perform lifts in a smooth and even motion</td>
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<td>Falls</td>
<td>Ice and snow on steps and walkways</td>
<td>- Keep load close to the body; use the legs to lift</td>
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<td>Getting in or out of motor vehicles</td>
<td>- Replace a pull with a push whenever possible</td>
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<td>Improper parachute landings</td>
<td>• Gradually increase physical intensity (frequency, duration, weights)</td>
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<td>Playing sports (particularly basketball)</td>
<td>• Avoid repeat days of intensive activity of same body region (run/march)</td>
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<td>Walking, climbing, or climbing on uneven surfaces or while carrying objects</td>
<td>• Reduce excessive training of a single type or body region (running) 6</td>
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<td>Struck by or against</td>
<td>Hit head on crane at work</td>
<td>• Personal protective equipment (occupational and sports): Ensure personnel are wearing proper shoes, gloves, helmets/hard hats, mouthguards 14</td>
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<td></td>
<td>Hit by bat, ball, another player</td>
<td>• Establish system for personnel to report hazards. Make sure employees know how to report unsafe work site conditions/problems. 1</td>
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<tr>
<td>Natural/Environmental Factors</td>
<td>Weather (hot or cold)</td>
<td>• Minimize outdoor hazards. Keep walking surfaces clear and maintained:</td>
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<td>Inadequate water intake and/or vigorous exercise causing dehydration</td>
<td>- Ensure timely snow/water removal 15</td>
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<td></td>
<td>Prior cold or heat-related injury</td>
<td>- Refill and patch cracks and holes on walking surfaces 15</td>
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<td>Animal, insect bites</td>
<td>• Lighting: Install light fixtures in dimly-lit areas (e.g., steps) 15</td>
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<td>Motor vehicle and Motorcycle crashes</td>
<td>Excess speed, fatigue, and/or alcohol</td>
<td>• Use &quot;3-point contact&quot; for ladders, entering or exiting a vehicle (e.g., 2 feet and 1 hand) 15</td>
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<td>Not wearing appropriate protective equipment</td>
<td>• Getting in/out of military vehicles: Conduct installation-specific assessments to identify types of motor vehicle-related falls</td>
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<td>Unsafe road conditions</td>
<td>• Protective equipment: Promote benefits of using protective equipment in sports (e.g., ankle braces during basketball) 6</td>
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<td>Inexperienced motorcyclist</td>
<td>• Establish system for personnel to report hazards. Make sure employees know how to report unsafe work site conditions/problems. 1</td>
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Information Sources: