

US Army Medical Cost Avoidance Model (MCAM) Hazard Analysis Overview

Purpose

The Medical Cost Avoidance Model (MCAM) can be used to optimize investment decisions using the Return on Investment for preventive controls. The MCAM provides the information needed to make informed decisions based on anticipated cost avoidance benefits, potentially reducing injuries and saving lives.

The Hazard Analysis Tab of the MCAM is based on the concept of risk assessment, considering the severity and probability of possible health hazards assessed by the Health Hazard Assessment Program in materiel systems. The algorithms within the model incorporates severity categories and probability levels with medical treatment data, salary data, and disability data to provide an estimated itemized and total cost avoidance expected for implementing mitigation strategies designed to reduce health hazards risks to Soldiers.

Background

The MCAM was originally developed in 1998 and updated in 2005 using Headquarters, Department of the Army (HQDA) Study funding. It was published in the DSOC Injury Prevention Report No. 12-HF-04MT-08 in December 2008 and published in the January 2010 edition of the American Journal of Preventive Medicine. The MCAM became a publicly available web application in 2013 and was last updated to include occupational fields in 2016.

Data Sources for the MCAM

- Military Health System Management Analysis & Reporting Tool (M2) database. The M2 database was used to extract medical treatment data (inpatient and outpatient) for active component Army Soldier for fiscal years 2011, 2012, and 2013 from the Military Health System. The medical treatment data include medical care provided by military treatment facilities and civilian providers.
- Army Military-Civilian System (AMCOS) Lite Database. Salary and training cost information for active duty Army for fiscal year 2015 was extracted from the AMCOS Lite Database to determine the lost time costs and training replacement costs of the MCAM.
- US Department of Veterans Affairs. Disability compensation data provided by the Veteran Benefits Administration for fiscal years 2011, 2012, and 2013 was used to determine the disability costs of the MCAM. This data is not available publicly.

Assumptions

- Average incidence by ICD-9 for disposition codes for clinic visit time, limited duty, quarters assignment, and convalescent leave were used in conjunction with average military grade to calculate predicted lost time costs.
 - Clinic visit time = 2 hours for direct care & 4 hours for purchase care
 - Limited duty = 15 days of 30% reduced productivity
 - Quarters = 3 days (8 hours/day)
 - Convalescent leave = 30 days (8 hours/day)
- Fatality costs only includes death benefits (Servicemember's Group Life Insurance and death gratuity), equaling to \$500,000 for each fatality.