

# Project Management Helps the Department of Defense Protect Military and Civilians from Hazardous Materials

## *The Military Health System Gathers and Analyzes Data for Terrorism Defense*

Following the events of 9/11 and the subsequent increase in global terrorism, national security has become the United States' top priority. Among the government's efforts to improve national security is the monitoring, collection and analysis of information regarding human exposure to hazardous materials. The Department of Defense (DOD) Military Health System has contributed to these efforts by creating and maintaining a software system that collects, stores and evaluates the history of all military-related exposures to hazardous materials during the life of both military personnel and DOD civilians.

### Project Background

Prior to the terrorist attacks of 9/11, the detection of hazardous materials in the environment was a primary concern to the United States military only during wartime or combat situations. However, 9/11 illuminated the potential for terrorist activity involving chemical or biological weapons, and placed a priority on the early identification of dangerous environmental hazards.

To help speed the government's response to potentially catastrophic situations affecting the military or general public, the DOD began development of the Defense Occupational and Environmental Health Readiness System—Industrial Hygiene (DOEHRS-IH). Treating patients who had encountered a dangerous substance often proved difficult as their medical histories and other paperwork were not always readily available. Developed as a web-based application, the DOEHRS-IH would provide nearly real-time environmental monitoring capability and would eliminate the need for patients' paper records.

### Challenges

Scheduling posed a challenge on the DOEHRS-IH project as teams for governmentsponsored projects must often coordinate their schedules with those of other government initiatives. In the case of DOEHRS-IH, the project manager needed to integrate the scheduling and sequencing of the technical work on the project with the Defense Acquisition System's requirements and constraints.

An urgent deadline also contributed to scheduling challenges. The project had been delayed for nearly three years and was at risk of being shut down altogether as users of the would-be system disagreed about minimum system requirements. Following 9/11, however, the potential for additional terrorist attacks placed a new urgency on the project.

The system's requirements also created additional budget and schedule challenges. The system would be web-based, but would also need to be mobile and operable when not connected to the Internet, a requirement not in the original scope.

At the start of the project, the team discovered it did not have sufficient funding to provide the DOD with an adequate finished product. Additionally, the design challenges of creating such a system would make it difficult for the team to meet the already tight deadline.

Communicating with the project's stakeholders also presented a challenge. The DOD, Army, Navy and Air Force required prompt and accurate communications on the project's progress. In order to prevent skepticism or frustration, the project team needed to ensure that each of these groups received the appropriate information at the appropriate times.

## Project Management Solutions

In order to successfully navigate these scheduling, budget and communications challenges, the DOEHRS-IH team used project management knowledge areas and methodologies described in *A Guide to the Project Management Body of Knowledge (PMBOK® Guide)*. In addition, the DOEHRS-IH project benefited from the expertise and knowledge of its team and its manager – a certified Project Management Professional (PMP)®.

The team used schedule and scope management processes to overcome scheduling challenges and to compensate for time lost during previous delays and setbacks. The project team also reused many components of the web-based system when creating the mobile system, saving significant development time and eliminating the need for user training on an entirely different system.

To overcome budget challenges, the team used change control methodologies, which enable project teams to closely monitor activity to ensure that each action is the most efficient means of reaching a project's goals. By using these methodologies, the project team was able to reevaluate the scope of work and successfully execute what was expected, and remain under budget.

The project team used several software tools, such as Together Control Center (TCC), to help organize the project components and facilitate communication with the various stakeholders. Using these tools, the project team was able to create software, develop code and synchronize efforts throughout the various stages of the project. In addition, these tools helped the design team complete tasks quickly and in a more organized fashion.

The team also held daily status meetings between representatives of the government, each of the military services and the contractor to highlight progress and discuss concerns. To a great extent, it was this steady and controlled communication effort that helped the project team develop and deploy DOEHRS-IH.

## Results

The DOD deployed the DOEHRS-IH in August 2005. The result of the project team's efforts is the near real-time availability of information crucial to the safety of military personnel and civilians. By eliminating the need to manually enter personnel records or retrieve thousands of paper copies of exposure records, industrial hygienists for the Army, Navy and Air Force are able to access more accurate and current data from the online system for patient care, or to respond to potential crises.

Project management practices did not cease upon deployment of the DOEHRS-IH. Once the project team completed the development and deployment of the system, the project management office began conducting regular meetings with the DOD working group to review the status of the system and reevaluate any further changes or necessary updates.

- In spite of the initial challenges facing the project, the DOEHRS-IH was **completed on time and on budget**.
- The completed DOEHRS-IH has **1.4 million lines of code, 880 individual web pages and more than 565 database tables**.
- The DOEHRS-IH system is capable of supporting **2,000 users** but is scalable to as many as 70,000 users.
- By enabling the on-demand retrieval of patient medical history and local environmental conditions, DOEHRS-IH not only saves lives, but also **reduces medical costs** by helping to **prevent widespread health issues**.