

## **Using Occupational Safety Models To Enhance Patient Safety in a Hospital System**

### ***Background:***

The Institute Of Medicine (IOM) estimates that at least 44,000 Americans die each year as a result of medical errors, and makes a series of recommendations for decreasing the number of medical errors by 50% over the next five years<sup>1</sup>. The Institute recommended that health care look to external models in which a similar challenge was faced and progress was made. The report cites two examples - aviation and the industry wide effort to reduce occupational injury and illness. Both efforts have been tremendously successful in reducing error in their respective domains.

The National Safety Council reports that the occupational fatality rate fell 90% from 1933 to 1997, from 37 per 100,000 worker to 4 per 100,000<sup>2</sup>. The Department of Labor's (DOL) Voluntary Protection Program (VPP) is a state of the art, successful occupational safety and health program that can be modified and brought to bear on the challenge of increasing patient safety. This highly effective program was initiated in 1982 and is responsible for precipitous drops in the occupational injury and illness rates of program participants. The program has proven successful at highly hazardous, complex work sites with closely coupled process systems such as oil refineries and construction sites, i.e. analogous to the complexities of hospitals and acute care delivery systems.

### ***Objective:***

The specific aim of this project is to adapt and apply the five VPP elements of management commitment, employee participation, worksite (care delivery) analysis, hazard control and training to the challenge of increasing patient safety. The objective of this presentation is to present an oversight of this comprehensive program as it is currently being implemented.

### ***Setting:***

The Health System piloting this program is a network of two hospitals, primary care physician practices, home health services, emergency medical services and a coordinated system of prevention, diagnostics, treatment and rehabilitation.

### ***Design:***

A quasi-experimental quality improvement research design will be employed in which a spectrum of performance measures will be quantified for a baseline period and then carefully tracked on a quarterly basis through time. The program will be a system wide effort and therefore will not be controlled

### ***Interventions:***

*Staff Training Program* - A spectrum of training programs are being developed and presented to facility staff. The intent of the training program is to create a safety culture in which the employee feel empowered to identify and mitigate potential sources of medical error. Training components will cover hazard analysis and control procedures.

*Employee Safety Suggestion System* - An employee suggestion system with incentives has been developed and is currently being promoted throughout the facility. Case studies of suggestions that are successfully implemented will be widely disseminated to encourage increased participation.

*Facility-wide Promotional Campaign* – This comprehensive safety approach will be promoted with a facility-wide promotional campaign including announcements, posters and events. Executive Leadership are highly visible in promoting the safety effort by participating in safety walkarounds and training programs.

*Modified Occupational Safety Programs* - Other components of occupational safety programs are being modified to include patient safety components. Monthly safety walkarounds are now designed to include patient safety components in addition to traditional occupational safety components. The hazard communication program is being expanded to include Medication Safety Data Sheets (RxSDS) that include all hazard information for a specific drug with a simple hazard ranking scale. Formal hazard analysis procedures such as failure modes effect analysis are being performed on hospital technologies such as Patient Controlled Analgesia (PCA) pumps.

### ***Results:***

This project is in the initial implementation phases and therefore results are only anecdotal in nature. However, there is clear system wide enthusiasm for some of the changes being made and support from executive leadership has been forthcoming.

### ***Conclusions:***

The IOM Report To Err is Human suggested that health care organizations should look to other industries for successful models of reducing errors and accidents. The preliminary implementation of several occupational safety programs modified to address patient safety will be presented. Although the quantitative impact of these programmatic changes has yet to be assessed the enthusiasm for the program's implementation may be indicative of a successful attempt to build a safety culture within a healthcare delivery.

***Short Biography of the Author:***

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Matthew Fitzgerald, DrPH, MS, Vice President for Scientific Affairs – Dr. Fitzgerald joined Delmarva Foundation in 1995. As Vice President for Scientific Affairs he is the lead analytic scientist and research methodologist, designing and implementing quasi-experimental quality improvement projects. A Certified Industrial Hygienist with a doctorate in Public Health from Johns Hopkins University, he brings a broad scientific background and systems approach to project design, analysis and implementation. Dr. Fitzgerald serves on the editorial board of the journal *Evaluation and the Health Professions*. In this capacity, Dr Fitzgerald has served as guest editor of two special issues concerning Medicare and Medicaid quality improvement programs. Dr. Fitzgerald has several publications related to health care quality improvement and has presented extensively on the topic, including at national conferences such as the Institute for Healthcare Improvements National Forum.