

Community Report

Real World Evaluation of Air Bag Technology Pilot Study Results

The Harvard Injury Control Center at the Harvard University School of Public Health is currently conducting a study on the impact of automobile air bag technology on the nature and severity of injuries incurred in motor vehicle accidents. This multi-year, prospective evaluation focuses on the drivers of motor vehicles involved in front and front-angle collisions. The goals of the study are to 1) evaluate the injury-mitigation performance of current air bag designs in actual collisions, 2) identify limitations in the effectiveness of current air bag systems that need to be addressed in refinements of the system, and 3) document any injuries associated with air bag deployment that need to be addressed as the technology is improved. The proposed research will examine patterns of injury among patients admitted to trauma centers following severe collisions involving a recent model year vehicle. Brigham and Women's Hospital Level I Trauma and Burn Center is one of six Massachusetts trauma centers participating in this study. Data will be collected from the six trauma center from 1996 through 1999. This data will be combined with information from the Massachusetts Registry of Motor Vehicles (RMV).

In order to test the feasibility of the project, a pilot study was conducted from July 1994 to March 1995 using data from 1993. The objectives of the pilot study included establishing a process of case finding and evaluating database linkage between the RMV and the trauma center registries. Additionally, the pilot study assessed the rate of subject recruitment for the prospective evaluation and investigated causes and effects of missing data at the

RMV.

Where possible, data from the various trauma registries were linked with corresponding accident data from the RMV. Results of the linkage showed that RMV accident reports were found for only 55% of registry submissions. Of the cases found, 27% (15% of all cases reported by the trauma registries) fit the inclusion criteria for the study (i.e. driver of a recent model car). Seventeen percent of the included cases involved vehicles that had an air bag. The low matching rate was due, in part, to the pilot study's use of retrospective data. Cases involving an accident that occurred or patients who lived outside Massachusetts were the largest source of unmatched records.

In order to account for any bias that may have been introduced into the study, a comparison was performed on cases that had RMV reports versus those where the RMV reports were missing. Patient demographics, injury characteristics, discharge disposition, and length of stay were assessed. No significant differences were found between the two groups.

The pilot study evaluated patient demographics, injury characteristics, and outcomes for cases with and without an air bag. Due to the small number of applicable cases in the pilot study, only qualitative analyses were performed. These analyses will serve to illustrate the types of comparisons to be completed in the prospective study scheduled to begin in January 1996.

Maria Segui-Gomez, M.D.

Harvard Injury Control Center ♦

Facts About Air Bags

Did you know...?

- **Air bags were invented in the 1950's, developed in the 1960's, and first installed in cars in the early 1970's.**
- **As of 1995, all new model cars have a driver's side air bag installed.**
- **Most air bags systems are designed to deploy in crashes equivalent to hitting a solid barrier at 10-12 mph.**
- **The air bag deployment system operates independently of the car ignition switch.**
- **Automakers are currently working on developing side-impact air bags.**
- **Future system designs include the development of occupant position sensing modules.**

Questions? Comments? Suggestions?

Contact: Tricia Volpe, editor

BWH Trauma and Burn Center

phone: (617)732-7715

fax: (617)566-9549

e-mail: PEVolpe@bics.bwh.harvard.edu

Prevention

Fire Prevention Week

Staff from the Brigham and Women's Hospital Trauma and Burn ICU and Emergency Department joined the Boston Firefighters on Columbus Day, October 9, to promote fire prevention in the community. Activities were held at the Boston City Hall Plaza. Boston Firefighters demonstrated various methods of rescue including ladder teams (see photo on page 1) as well as the "jaws of life" and automobile air bag systems. Specialized units displayed equipment used for search and rescue such as for tunnel searches and underwater recovery. Information booths provided educational information for adults and children.

Karyl Davenport, RN, Nurse Manager, Burn/Trauma ICU ♦



BWH staff pictured with Boston Fire Commissioner Martin E. Pierce, Jr. from left to right: Kim Marsh, RN, Commissioner Pierce, Mary Kennedy, RN, Karyl Davenport, RN, Rita Ferris, RN, and Kevin O'Toole, PCA. Marsh, Kennedy, Ferris, and O'Toole work in the BWH Emergency Department. Davenport is the Nurse Manager of the BWH Burn/Trauma Intensive Care Unit.

Social Services

An Integral Component of the Trauma Service

What if you or someone in your family suddenly suffers a traumatic injury? A fall down the stairs, or maybe a motor vehicle accident. Who would help your family through the emotional upheaval of such an experience? Who would provide support and caring, interface with medical staff, coordinate discharge planning, and even arrange for housing and financial assistance during the hospitalization? A social worker, of course.

Social work is a key component in the effective operation of a Trauma Service. Due to the nature of the injuries which present on such a unit, patients and families are often in need of social work services, ranging from short term crisis intervention to finding much needed shelter and clothing for accident victims. Social workers wear many hats within the hospital system, and it is unlikely that a hospital stay would not

be enhanced by their involvement.

In the Trauma Unit at Brigham and Women's Hospital, there is a social worker available to assist patients and families through their hospital stay. Patients in need of social work services are often identified early by the Emergency Department social worker, who provides crisis intervention and supportive care as patients and their families have the opportunity to meet with a social worker to discuss their medical conditions and emotional reactions, their marriages or families, jobs and education, living situations, finances or insurance coverage, alcohol or drug use, death and grief, health care and supportive services at home, and the future.

A social worker can be contacted through a doctor or nurse, or by calling the social work office directly at 732-6469. Social work services are available to individual patients,

families, couples, and groups and can start prior to admission, during a hospital stay or even after discharge.

Rachael Eckhouse, LCSW, Burn/Trauma Social Worker ♦

Trauma Center News is published quarterly by the Brigham and Women's Hospital Trauma and Burn Center.

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