

The Safety Net

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Injury Control Research Center

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Student Training at its Best!

From the Director's Chair:

This past summer, one of our doctoral candidates, Ekta Choudhary, spent six weeks in the Virgin Islands – not on vacation – but as the first selectee of the National Park Service's (NPS) Risk Management Internship Program. During a three-to-four month application process, which included four separate phone interviews with various NPS officials, Ekta was selected as the first field intern from a highly qualified pool of applicants. The objective of this program is to provide opportunities for undergraduate and graduate level students to apply skills in risk management, injury prevention, health behavior, and education to enhance NPS injury prevention efforts to mitigate unintentional injuries to park visitors within the National Park Service. During her time in the Virgin Islands Ekta was sponsored by the Student Conservation Association and NPS.

Ekta's work with the Virgin Islands National Park staff on the design of an injury data collection system for the park, development of a hazard assessment tool, and the draft of a park visitor safety plan was extremely positive and personally rewarding. As a final part of her internship, Ekta prepared a comprehensive report



and briefed senior NPS officials at NPS headquarters in Washington, DC in early October. The hazard assessment tool may become a resource for all 390 units within the NPS.

Dr. Sara Newman, who supervised Ekta's field work and is director of the NPS's Public Risk Management

Program, described Ekta's experience as follows ... "this assignment not only revealed Ms. Choudhary's superb grasp of epidemiology and injury-prevention techniques, but also demonstrated her ability to work under pressure, rely on her keen sense of judgment and use tact, respect and resourcefulness to overcome obstacles. She was able to bring divergent staff together to design and take charge of their own risk management program."

Ekta's field experience has certainly increased her self-confidence and has undoubtedly enhanced her doctoral studies at WVU.



Jim Helmkamp

For more on Ekta Choudhary's experience, please see page 3.

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Injury Control Research Center
West Virginia University
White Birch Towers, Suite 4
1299 Pineview Drive
Morgantown, WV 26505
Telephone: (304) 293-6682
Fax: (304) 293-0265

<http://www.hsc.wvu.edu/icrc/index.html>

Causes of Rural-Urban Differences in Non-Fatal Injuries Investigated

Research Update on Jeffrey Coben



Jeffrey Coben

Rural life provides fresh air, open spaces, natural beauty ... and possibly a greater likelihood of being seriously injured from falls and other accidents, according to an ongoing ICRC analysis of non-fatal injuries resulting in hospitalization.

Previous studies already have shown that people living in rural areas have a disproportionately higher rate of fatal injury, except for homicide, than their urban counterparts. For example, motor-vehicle fatality rates range from 28.5 deaths per 100,000 in rural areas to 10.6 deaths per 100,000 in large, urban areas, according to the National Center for Health Statistics. Likewise, the risk of dying from suicide is higher in rural than in urban areas.

The question that ICRC principal investigator Jeffrey Coben, M.D., professor in the WVU Departments of Emergency Medicine and Community Medicine, wants to answer is whether this discrepancy holds true for non-fatal injuries, as well. To identify the differences between rural and urban non-fatal injuries resulting in hospitalization, Coben and co-investigators are analyzing information from a large, national database from the Agency for Healthcare Research and Quality. In addition, he and his colleagues are examining differences in the long-term outcome of patients after hospital discharge.

Preliminary analyses of the database did reveal a higher rate of non-fatal injury resulting in hospitalization among rural residents than among urban dwellers, Coben said. A paper presenting these findings was recently accepted for publication in the *American Journal of Preventive Medicine*.

Although the reasons for the higher rural-injury rate are unclear, it may be that people working outdoors in fields or other occupations involving manual labor are more likely to fall, Coben explained. People living in rural areas may also have limited access to health care, especially care aimed at disease and injury prevention, compared with people in urban areas.

“We found similar patterns [to those of fatal injury], which goes to further emphasize the need for focused injury prevention in rural communities,” Coben explained.

Coben and co-investigators Hope Tiesman, Ph.D., ICRC associate faculty, (at the nearby National Institute for Occupational Safety and Health) and Mary W. Carter, Ph.D., associate professor in WVU’s Department of Community Medicine and the Center on Aging, are now examining if hip fractures, which are a major cause of morbidity and mortality, occur more frequently among elderly people living in rural areas than among city inhabitants.

In a related study, the investigators are trying to identify differences in long-term hip fracture outcomes that could be attributed to quality of care and adverse medical events, Coben said, adding that they will present some of their findings this month at the 2008 American Public Health Association and Gerontological Society of America annual meetings.

“I think that one of the questions it raises is whether or not people who have certain types of injuries should perhaps be treated in certain settings,” Coben said. “Right now people with hip fractures are generally treated wherever they end up, whether it’s a large hospital, small hospital, community hospital, or teaching hospital.”

On a separate project, Coben is co-principal investigator with Harriet MacMillan, M.D., professor in the Departments of Psychiatry and Behavioral Neurosciences and Pediatrics at McMaster University’s Offord Centre for Child Studies in Ontario, in a multi-site collaboration. Working with participants in the Nurse Family Partnership (NFP), which is an established, nationwide home-visitation program designed to improve the quality of life for low-income, new parents and their children, Coben and his co-investigators are developing a targeted domestic-violence intervention to be incorporated into the existing program.

Coben is also serving as mentor and doctoral advisor for public-health student Danielle Davidov, who is working on the NFP study for her dissertation project.

ICRC Welcomes New Faculty

Motao Zhu joined the ICRC research staff in July 2008. He recently completed his Ph.D. and M.S. degrees in epidemiology from the State University of New York at Albany. He completed his medical training at Beijing Medical University. Motao’s research interests include traffic and pedestrian safety, safety belt effectiveness, and graduated



driver licensing. Before joining WVU, Motao was the Project Director of the Crash Outcome Data Evaluation System (CODES) in the New York State Department of Health since 2003. He has an academic appointment as an assistant professor in the Department of Community Medicine. We are very excited to have Motao on our research team and look forward to his participation in teaching and mentoring our graduate students.

ICRC Student First NPS Injury-Prevention Intern

Spotlight on Ekta Choudhary

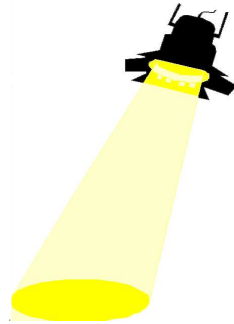
When Ekta Choudhary arrived on the island of St. John, U.S. Virgin Islands in early July to help implement a visitor-safety plan at its national park, she immediately realized the extent of the problem.

“On my first day, I asked, ‘please give me your data,’” Choudhary recounted. “And they looked at me and said, ‘What are data?’”

It turned out that the National Park Service (NPS), across all 390 of its activities including the Virgin Islands, did not have a consolidated database on injuries, but had been keeping track of them on a variety of independent and disconnected paper forms. By the time Choudhary arrived, the stack of (Virgin Island) injury reports reached about a foot and a half high, she said with a laugh. She read every incident report recorded over the last five years and entered each one into an electronic database.

Choudhary, who is a third-year public-health doctoral student at the ICRC, did this as part of a six-week internship with the NPS this past summer. As the first intern chosen for the NPS’s Risk Management Internship Program, Choudhary had to rely on her training at the ICRC, as well as guidance from her mentors here and from Dr. Sara Newman, NPS Public Risk Management Program director and Choudhary’s field supervisor, to develop a pilot visitor-safety program.

“In the Virgin Islands park’s history, there never had been a visitor-safety plan before,” Choudhary said, somewhat surprisingly, “never! There were safety instructions, a program that developed signs for warnings, and a program that gives you safety tips, but there was no overall park-safety plan, per se.”



In addition to centralizing and consolidating the injury reports, Choudhary designed and implemented a risk assessment tool to help identify specific hazards facing visitors at the 100-plus park-related sites on the island, which include beaches, monuments, and ruins. National park sites cover at least two-thirds of the island.

It turned out that St. John was the ideal place for Choudhary to do her internship. It’s a small island – the smallest of the Virgin Islands at 28 square miles – so it was easy for Choudhary to traverse the island and contact the individuals and organizations necessary to develop the visitor-safety plan. In fact, there is only one police department on the island, as well as one hospital and one emergency medical service, Choudhary said.

Choudhary noted early on during her internship that there was inadequate communication between the various park departments and local community organizations including the police and the hospital. This Choudhary said, made it difficult to collect meaningful injury data.

“They were not capturing the scores of non-severe injuries that were occurring fairly frequently,” Choudhary explained.

To facilitate injury surveillance, Choudhary set up a monthly communication exchange between the parks’ law-enforcement division and the local police department and hospital. She also established a safety committee that will continue

to collect and analyze data on injuries, as well as perform risk assessments. Once the visitor-safety plan and risk assessment tool are tested and validated there, they will be adopted by all national parks throughout the United States.

“I don’t think anybody can learn in a classroom the things that I learned over the summer,” Choudhary said. “You have to realize that you must be the leader and provide guidance because they’re looking at you as the injury specialist.”



Ekta Choudhary, right, with Laurel Brannick, an interpretation ranger, left, and Christy McManus, chair of the new V.I. National Park safety committee

ICRC Recognizes Awardees

Graduate Students Awarded Prestigious NIH T32 Predoctoral Training Grants

Two of the three recently announced T32 Training Grants awarded at WVU are to students currently or formerly affiliated with the ICRC. Danielle Davidov, B.A., doctoral candidate in public health sciences continues her planned dissertation study based upon her involvement in the ICRC-funded Nurse Family Partnership-Intimate Partner Violence project. Meredith Smith, a former graduate research assistant at the ICRC, is a doctoral candidate in psychology studying the influence of giving support to older adults with functional disabilities who have depressive symptoms and suicidal ideation.

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Danielle Davidov, left, with Meredith Smith

Manuscripts

Bossarte RM, Sullivent EE, Sinclair J, Bixler D, Simon TR, Swahn MH, Wilson K. Injury, Violence and risk among participants in a mass gathering of the Rainbow Family of Light, *Journal of Health Care for the Poor and Underserved*, 2008;19:588-595.

Choudhary E, Coben JH, Bossarte RM. Gender and time differences in the associations between sexual violence victimization, health outcomes, and risk behaviors. *American Journal of Men's Health* 2008, Published online February 12, 2008 <http://online.sagepub.com>.

Kelley G, Kelley K. Effects of aerobic exercise on non-high-density lipoprotein cholesterol in children and adolescents: A meta-analysis of randomized controlled trials. *Progress in Cardiovascular Nursing* 2008; 23:128-132.

McKay M, Coben J, Larkin G, Shaffer A. Attitudes of teenagers and their parents to Pennsylvania's graduated-driver licensing system. *Traffic Injury Prevention* 2008; 9(3):217-223.

Wu Bei, Mao Zong-Fu, **Rockett Ian**, Yue Yuwen. Socioeconomic status and alcohol use among urban and rural residents in China, *Substance Use and Misuse*, 2008; 43(7):952-966.

Bowman S, Aitken ME, **Helmkamp J**, Maham S, Graham C. Impact of helmets on injuries to riders of all-terrain vehicles. *Injury Prevention* (in press).

Coben J, Tiesman H, Bossarte R, Furbee P. Rural-urban differences in injury hospitalizations in the United States, 2004. *American Journal of Preventive Medicine* (in press).

Recent Scholarly Work

Helmkamp JC, Aitken M, Lawrence BA. ATV and bicycle deaths and associated costs in the United States, 2000-2005. *Public Health Reports* 2009;124(3) (in press).

Leontieva L, Horn K, **Helmkamp J**, Manley W, **Furbee P.** Counselors' reflections on the administration of screening and brief intervention (SBI) for alcohol problems in the emergency department and three-month follow-up outcome. *Journal of Critical Care* (in press).

Zhu M, Cummings P, Chu H, Xiang H. Urban and rural variation in walking patterns and pedestrian crashes. *Injury Prevention* (in press).

Presentations

Aitken ME, Bowman SM, Bird TM, Mullins SH, Parnell DN, Graham J, **Helmkamp JC.** All-terrain vehicle hospitalizations for children continue to rise. Presentation at the 2008 Pediatric Academy Societies' annual meeting, May 5, 2008.

Bowman S, **Aitken M, Helmkamp J**, Graham J. Impact of helmets on injuries to riders of all-terrain vehicles. Poster presentation at 2008 American Public Health Association annual meeting, Oct. 28, 2008.

Carter M, Coben J, Furbee P. In-hospital adverse medical events among older adults admitted for hip fracture. Presentation at the annual meeting of the Gerontological Society of America. Nov. 23, 2008.

Choudhary E, Bossarte R. Epidemiological Profile of Male Sexual Assault: Results from the National

Incident Based Reporting System (2005). 41st Annual SER Meeting, June 24-27, 2008.

Choudhary E, Bossarte R, Coben J. Male sexual assault: An epidemiological profile using 2003-2005 NIBRS data. Poster presentation at 2008 American Public Health Association annual meeting, Oct., 29, 2008.

Kelley, G, Kelley K. Injuries and dropouts from exercise interventions: A meta-analysis of randomized controlled trials. Poster presented at the American college of Sports Medicine's National Conference in Indianapolis, IN on May 28, 2008. Abstract available at *Medicine & Science in Sports and Exercise* 2008; 40:5231.

Tiesman HM, Coben J, Furbee P, Carter M. Hip fracture hospitalizations in the U.S. by urban-rural status: Nationwide Inpatient Sample, 2004. Poster presented at 2008 American Public Health Association annual meeting, Oct. 27, 2008.

Walling B, Tadros A, Davis S, **Helmkamp J.** ATV accidents and the elderly: national trends and implications for emergency medicine. Presentation at the 2008 American College of Emergency Physicians annual meeting, Oct. 2008.

Zhu M, Chu H, Li G. Effects of graduated-driver licensing in upstate New York. Poster presentation at 2008 American Public Health Association annual meeting, Oct. 27, 2008.

Zhu M, Fitzgerald E, Gelberg K. Maternal low lead level exposure and fetal growth. Presentation at 2008 American Public Health Association annual meeting. Oct. 29, 2008.

Awardees

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The overall objective of this NIH-supported award is to provide rigorous research training in the behavioral and biomedical sciences (BBS) to students planning careers as independent investigators. The goal is to develop the next generation of scientists with the background and skills to conduct behavioral research using a wide range of experimental approaches and incorporating biochemical, molecular, and genetic analyses. The research training program in BBS engages experienced faculty preceptors and builds upon established Biomedical, Psychology, and Public Health Ph.D. programs at WVU.

Two Faculty Recognized with Alumni Awards

This past April, Jim Helmkamp, director of the ICRC and professor in the Department of Community Medicine, was honored with the 2008 Distinguished Alumni Award from the University of Pittsburgh's Graduate School of Public Health; coincidentally this was the 25th anniversary of his graduation in 1983.

In September, George Kelley, director of the Meta-Analytic Research Group and professor in the Department of Community Medicine, received the 2008 Distinguished Alumni Award from Boise State University where he received his B.S. in physical and health education in 1980.