



KIPRC

*Kentucky Injury Prevention
and
Research Center
Annual Report 2009*

Kentucky Injury Prevention and Research Center

Who We Are

The Kentucky Injury Prevention and Research Center (KIPRC) is a partnership between the Kentucky Department for Public Health and the University of Kentucky's College of Public Health that combines academic investigation with practical public health initiatives.

What We Do

Our purpose is to decrease the burden of injury in the Commonwealth. Our partnership, grounded in a belief that most injuries are preventable, cultivates a collaborative approach to problem solving. KIPRC works to reduce injury through education, policy initiatives, public health programming, surveillance, risk factor analysis, direct interventions, and evaluation.

Greetings from the Director

Welcome to the Kentucky Injury Prevention and Research Center's Annual Report . We report our activities with both pride and humility: pride in our continued progress to make Kentucky a safer place to live and work, and humility as we contemplate the scope of tasks yet to be accomplished.

Our progress is due to the tireless efforts of our project managers: Dr. Terry Bunn in occupational safety and health, Robert McCool in fire prevention and community safety programs, Dr. Susan Pollack in pediatric and adolescent injury prevention, Michael Singleton in several areas of surveillance and prevention capacity improvement, and Dr. Sabrina Walsh for the Kentucky Violent Death Reporting System. KIPRC is fortunate to have such talented and dedicated leadership, as well as the support of over a dozen skilled specialists in areas ranging from field investigation to community outreach to biostatistics.

We could not work effectively—in fact, we might not be able to function at all—without the collaboration of our many partner agencies and organizations. The colleagues upon whom we rely are noted in the reports of each program area. The Kentucky Department for Public Health, an agency with vast statewide reach and wide-ranging expertise, is not only an indispensable partner but functionally engaged with KIPRC's leadership and direction.

In 2009, KIPRC staff collaborated with statewide advisory councils and coalitions to implement the 2008 legislation on booster seats and trauma system implementation. The enactment of primary safety belt legislation in the 2006 session has been associated with a double-digit percentage decline in motor vehicle fatalities. While we celebrate these steps toward a safer Kentucky, we continue policy-related work and research to make safety-related laws both more effective and more enforceable.

April 2010 marked another change for KIPRC: after 7 years, I stepped down as director, and will remain active with several ongoing projects. Dr. Terry Bunn, who has ably led KIPRC's occupational injury program for over 8 years, assumed the director's role, and I am confident that her leadership will take KIPRC to an even higher level of achievement.

We call on all current and prospective partners to bring your needs to our attention so that we can better target our work towards the achievement of our shared goals. Our vision is simply stated: A safer Kentucky—it's no accident!



Julia F. Costich, Director

Fatality Assessment and Control Evaluation Program (FACE)

Arborist Dies After Fall from Tree

Incident Number: 09KY059



Photograph of two tree stumps the arborist was removing. Photograph property of KY FACE.

Solid Waste Driver Dies After Single Vehicle Rollover

Incident Number: 08KY074



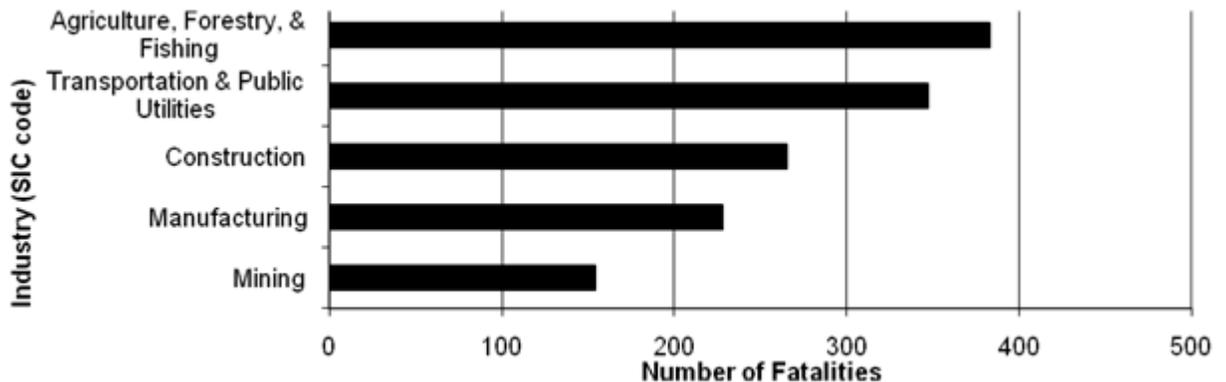
Photograph of solid waste truck involved in motor vehicle crash. Courtesy of law enforcement.

The Kentucky FACE program focuses on the population-based and case-based surveillance of work-related injury fatalities, and is funded by the National Institute for Occupational Safety and Health. The FACE model includes a public health model of surveillance, systematic sentinel event case investigations, targeted interventions, and evaluation of effectiveness. The purpose of the FACE program is to 1) identify industry sectors, occupations, worker populations, and worker environments at high risk for fatal work injuries; 2) identify potential risk factors, trends, and emerging issues; 3) develop and implement targeted strategies for dissemination to those who can intervene in the workplace; and 4) advance the usefulness of surveillance data for the prevention of fatal occupational injuries and hazards.

From 1994-2007, KY FACE recorded 1815 fatal work-related deaths. The agriculture, forestry, and fishing industry experienced the largest number of work-related fatalities (n=383). Other industries with elevated worker fatalities were transportation (n=347) and construction (n=265). Agricultural fatalities were a state-specific priority from 1994-2008; over 120 fatality investigations were performed resulting in 70 tractor-related fatality reports. The primary cause of agricultural fatalities was tractor-related and one-third of the fatalities were due to tractor rollovers (109 tractor rollovers out of 349 total agricultural fatalities).

FACE, cont.

Top five Kentucky industries with the largest numbers of occupational fatalities (1994-2007).



The transportation and warehousing (TW) industry sector recorded the largest absolute number of work-related deaths in KY in 2007 ($n = 31$, 28% of total fatalities). The occupational fatality rate for this industry was 35 worker deaths per 100,000 employed, the second highest for Kentucky, followed by the construction industry (22/100,000). The truck transportation and construction industries have been chosen by the KY FACE program as priority focus areas.

The major cause of death for Kentucky workers is motor vehicle collisions (MVCs) (30%). Many prevention materials have been developed to raise awareness of MVCs as an occupational fatality problem in Kentucky. Considering that most of the MVC deaths (409/544) were of KY residents and occurred in the transportation ($n=238$) industry, truck transportation MVCs will continue to be a primary focus of on-site investigations.

Recent Publications

- Bunn TL, Liu Y, Lee K, Robertson M, Yu L. 2009. Farmer Exposure to Organic Solvents During the Maintenance and Repair of Farm Machinery: A Pilot Study. *Am J Ind Med.* 2009 Oct 28. [Epub ahead of print]
- Bunn TL, Slavova S, Hall L. 2008. Narrative text analysis of Kentucky tractor fatality reports. *Accid Anal Prev.* 40(2):419-25. Epub 2007 Aug 9.
- Bunn, TL, Slavova, Bathke, A. 2007. Data Linkage of Inpatient Hospitalization and Workers' Claims Data Sets to Characterize Occupational Falls. *JKMA* 105: 313-320.
- Bunn T. Worker fatalities due to motor vehicle collisions with railroad trains. *Kentucky Epidemiologic Notes & Reports.* 42(8), November 2007.

FACE...

Success Story: Case investigations lead to redesign of fuel line system

From 2005-2008, there were 17 fatal occupational collisions in KY involving semi tractors which caught on fire, and four related FACE reports have been produced. Based on KY FACE report #07KY070, "Semi-Tractor Trailer Driver Hauling Chicken Dies after Striking a Rock Wall", a fuel shut-off valve for refrigerated trailers is being designed. The semi truck driver in this report was incinerated after crashing when diesel fuel dripped onto an exhaust pipe from the refrigerated semi tractor and caused a fire. The fuel line from the refrigeration unit on the trailer was compromised during the collision. Students from the University of Kentucky, College of Engineering, designed a fuel supply shutoff for refrigeration units when a fuel line is compromised. The shutoff system is being designed with a signal to alert the driver when the fuel flow has been stopped and will have an override switch. The prototype was successful, so the next step will be to test the fuel supply shutoff on a semi refrigeration unit in 2010.

FACE...

Success Story: Investigation leads to policy change for road construction company

The analysis and investigation of commercial motor vehicle driver fatalities have resulted in a procedural change for a road construction company. Fatality report # 05KY036 entitled "Dump Truck Driver Dies after Unintentional Release of Asphalt" recommended that tailgate chains should always be secured to the dump truck. The report said: "The driver can choose to not hook the chains and dump the full load into one big pile, or hook the chains and spread the rock slowly in a line. When asphalt is unloaded, chains are not usually used. The tailgate is released, and the bed is raised in increments to allow the asphalt to slide out of the truck bed. As a backup safety mechanism when hauling asphalt or any other material including rock, the chains should be secured tightly to the side of the truck. Chains should be secured before the bed is loaded with material and unsecured when the truck reaches its destination and is preparing to dump its load. Securing the chains would provide the driver a backup safety feature if the tailgate trip handle failed". After this incident occurred, the company made the securing of tailgates with chains mandatory practice for all dump trucks. Now, when a dump truck is loaded, the tailgates are secured with chains to the sides of the dump truck before the driver is given the weight ticket and allowed to leave the facility. The chains are then released when the dump truck is ready to dump the load. The fatality report from this incident and the company procedural changes were published in the trade magazine *Asphalt Pro* in December 2007.

Kentucky Occupational Safety and Health Surveillance Program (KOSHS)

Immigrant Granite Installer Killed After Falling with Homemade Construction Box Incident Number: 09KY034



Photograph of construction box involved in this incident. Photograph property of KY FACE program.

Team Semi Driver Dies after Rig is Struck by Impaired Driver Incident Number: 07KY091

Incident Number: 07KY091



Photograph of semi and car involved in fatal crash. Photograph courtesy of law enforcement.

Since the year 2005, the Kentucky Occupational Safety and Health Surveillance (KOSHS) Program has been funded by the National Institute for Occupational Safety and Health to conduct surveillance of 20 indicators of worker injuries and illnesses in Kentucky. Additional state-specific indicators include total occupational poisonings, occupational motor vehicle collisions, occupational falls, and work-related injuries among state employees.

An analysis of occupational falls using linked hospital discharge fall data and KY Department of Workers' Claims (DWC) data showed that construction falls were the most prevalent for male workers and incurred the highest hospitalization and workers' compensation costs, whereas most female worker falls occurred in the services industry. The largest percentage of male worker falls was from one level to another, while the largest percentage of females experienced a fall, slip, or trip (Bunn et al. 2007).

In the exploration of alternative data sources, emergency department admission intake data was analyzed for work-relatedness and payment source (Nicholson et al. 2008). Twenty percent of all self-reported work-related injuries were not billed to workers' compensation, and were not covered by personal health insurance. Also, a higher proportion of the work-related injuries occurred among Hispanics, among workers under the age of 25, and within the construction industry.

Unintentional poisonings were the second leading cause of injury in the United States (CDC, 2008) in 2005 after motor vehicle injuries. Unintentional poisonings at work resulted in 34 hospitalizations in the years 2003-2007 in KY. The KOSHS program has directed prevention efforts and performed a number of studies in the area of unintentional poisonings. A peer-reviewed publication used linked inpatient hospital discharge and KY Regional Poison Control Center (KRPCC) data to assess the impact of poison center consultation on the length of hospital stays for patients with accidental poisonings (Bunn et al. 2007). In addition, a hazard alert entitled “Truck Drivers in Fatal Crashes after Substance Abuse”, was published and disseminated to trucking companies. Also, a KOSHS staff member was a contributing consultant for a University of Kentucky report on methamphetamine and other drug use (Turner and Walker, 2008).

A retrospective population-based case-control study was conducted by KOSHS personnel to determine whether semi truck driver age, gender, and the presence of passengers affect the likelihood that a semi truck driver will be at-fault in a semi truck collision (STC) with another vehicle (Bunn et al. 2009). The results from the final multiple logistic regression analysis showed that solo semi truck drivers, aged 65 and over, were at highest risk for at-fault STCs with other vehicles. However, the presence of passengers in the semi truck had a protective effect for semi truck drivers aged 65 and older. The results of this study have the potential to inform public policy in regard to the presence of passengers and their positive protective effect on older semi truck drivers, particularly in long-distance driving performed by solo vs. team semi truck drivers.

Recent Publications

Bunn TL, Yu L, Slavova S, Bathke A. 2009. The Effects of Semi Truck Driver Age, and Gender, and the Presence of Passengers on Collisions with Other Vehicles. *Traffic Inj Prev* 10(3):266-272.

Bunn, TL, Yu, L, Spiller, HA, Singleton, M. 2010. Surveillance of methadone-related poisonings in Kentucky using multiple data sources. *Pharmacoepidemiol Drug Saf.* 19 (2):124-131. [Epub ahead of print].

KOSHS, cont.

Nicholson VJ, Bunn TL, Costich JF. 2008. Disparities in work-related injuries associated with worker compensation coverage status. *Am J Ind Med.* 51(6):393-8.

Bunn TL, Slavova S, Spiller HA, Colvin J, Bathke A, Nicholson VJ. 2008. The effect of poison control center consultation on accidental poisoning inpatient hospitalizations with preexisting medical conditions. *J Toxicol Environ Health A.* 71(4):283-8.

Bunn, TL, Slavova, Bathke, A. 2007. Data Linkage of Inpatient Hospitalization and Workers' Claims Data Sets to Characterize Occupational Falls. *JKMA* 105: 313-320.

KOSHS...

Success Story: Kentucky's Worker Safety Program: An interagency partnership

Kentucky's occupational injury and illness incidence rates were above the national incidence rates for both nonfatal worker injuries (21% higher) and fatal worker injuries (33% higher) in 2008. The Kentucky Occupational Safety and Health Surveillance (KOSHS) and Fatality Assessment and Control Evaluation (FACE) programs track occupational injuries and illnesses in Kentucky. The KOSHS program's Working to Save Lives Consortium was established in May 2006 to foster collaborations and to

share resources among the various stakeholders in the state working to improve worker safety and health. The consortium developed a statewide occupational injury prevention strategic plan that was incorporated into the 2010 Commonwealth of Kentucky Public Health Injury and Violence Prevention Plan. The plan recommended many action steps including the provision of KY OSHA education and training resources to KY employers, education of employers on the value of a worker safety program, promotion of partnerships between resource providers and employers, dissemination of occupational injury prevention publica-

tions to smaller employers, and the provision of baseline surveillance data to inform employers, monitor trends and make state comparisons.

The Working to Save Lives consortium developed a worker safety program presentation geared toward new and established small businesses. The presentation contains information on workers' compensation, the basic elements of a worker safety plan, and how workers' compensation premiums are impacted by the variation in the quality or absence of a worker safety plan. Factual accounts and statistics are also presented concerning workplace injuries. This presentation will be given in four half-day seminars annually at locations statewide in collaboration with KY OSHA and the KY Department of Workers' Claims, and began in May 2010.

A link to the KOSHS program and the worker safety presentation is available on the Kentucky Secretary of State's One-Stop Business Licensing Program and is available at: http://www.kiprc.uky.edu/projects/KOSHS/presentation/safety_files/



KOSHS...

Success Story: Data collection leads to the adoption of a new regulation to help prevent injuries

Kentucky's work-related amputation rate was 38% higher than the national rate in 2007. To address increased amputation rates in workers, the Kentucky Occupational Safety and Health Surveillance (KOSHS) program provided inpatient hospitalization discharge and emergency room data to KY OSHA as proof that a new proposed reporting regulation would not be an onerous burden to employers. As of 2006, the newly adopted reporting regulation (803 KAR 2:180) requires that employers report all amputations suffered by an employee and report any hospitalizations of 1 or more workers involving a workplace injury. The former regulation only required reporting of inpatient hospitalizations of 3 or more employees. This new regulation went into effect on November 1, 2006.



KOSHS...

Success Story: New partnerships formed to aid Kentucky Workers

Important partnerships were formed to collaborate on new projects, to disseminate prevention information, and to raise safety awareness within the trucking community. First, a partnership was formed with Commercial Vehicle Enforcement (CVE) in 2006 to address the prevention of commercial vehicle collisions. Second, KOSHS personnel have been members of the Governor's Executive Committee on Highway Safety (GECHS) since 2007 and FACE personnel are members of the Highway Fatality Review Team formed out of the GECHS in January 2009. A KOSHS personnel member is the co-chair of the Kentucky Traffic Records Advisory Committee which provides input on the improvement of traffic records systems within KY. Funded projects for years 2010-2011 are the continued collection of emergency department data which began in January 2008 and the collection of emergency medical services (EMS) run data.



Instructional System Design

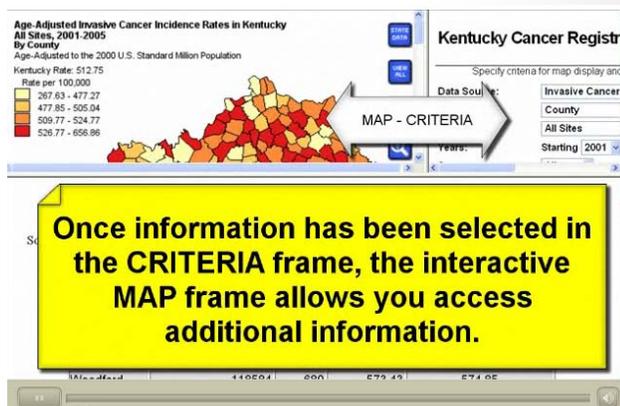
Chemical Safety

KIPRC completed a project in December 2009 pertaining to safe storage and disposal of high school chemicals. Incidents involving hazardous chemicals are a common cause of problems in schools and have resulted in serious injury, property damage, and school shut downs for decontamination. The CD-Rom based course, "School Laboratory Management and Chemical Cleanout", was funded by The Environmental and Public Protection Cabinet, Division of Compliance Assistance. The course is geared to Kentucky high school and college lab personnel who deal with chemical storage and disposal. One thousand CDs are in the process of being distributed to Kentucky high schools by the Department of Compliance Assistance and the utility of the course may lend itself to be used by college labs as well.



Tutorial – Collaboration with the Kentucky Cancer Registry

KIPRC has developed an online Flash-based tutorial for Cancer-Rates.info, a site providing cancer incidence and mortality data. Funding for the tutorial was provided by the Kentucky Cancer Registry. This information is available for the general public as well as to researchers. The online site may be found at: <http://cancer-rates.info>



Instructional System Design, cont.

Virtual Environment Training

A virtual environment is a computer-generated online community which allows users to interact with one another. The University of Kentucky owns such a computer-generated world in Second Life, a multi-user virtual environment (MUVE). In Second Life, the environments are divided into virtual islands. KIPRC has created a meth lab on the University of Kentucky Island, providing first responders with a safe means of identifying and cleaning up a meth lab. The program was funded by the Drug Endangered Child Training Network. To visit this site, first install the Second Life Client: <http://secondlife.com/support/downloads/> Next enter the following URL to visit the lab on the University of Kentucky Island: <http://slurl.com/secondlife/University%20of%20KY/64/198/25>



Trauma Systems and the Kentucky Trauma Registry

KIPRC has been an active participant in trauma system development and traumatic injury surveillance for over a decade. The most recent edition of the Kentucky Trauma Registry Report, covering patients cared for in the state's trauma centers from 1995 through 2006, is available at <http://www.kiprc.uky.edu/PDFFiles/traumaAnn06.pdf>.

The findings from the Kentucky Trauma Registry Report for 1995-2006 are based on injuries seen by the trauma services at the state's Level I facilities, the University of Kentucky Hospital and the University of Louisville Hospital, as well as Kosair Children's Hospital and Taylor County Hospital. The number of facilities in Levels II-IV is increasing and their data will be reintegrated into future reports.

Kentucky's trauma registry findings are similar to those of other relatively rural states with limited minority populations. The large majority of trauma patients are white males in their early to mid adult years, and the most common cause of traumatic injury is motor vehicle crashes. Other common causes of trauma are falls and attempted homicide. While suicide deaths are three times as common as homicide deaths in Kentucky, suicide is much less common in the trauma registry because poisoning (i.e., drug overdose), a common mechanism of suicide, is not included in the National Trauma Data Bank's definition of trauma.

Areas of current concern in trauma include ATV injuries, particularly among children and young teens, and traumatic brain injuries associated with such factors as failure to wear a helmet or, in the case of returning military, exposure to intense explosive blasts.

Kentucky's trauma system development is entering an exciting phase of unprecedented interest and official status. The 2008 General Assembly enacted legislation (codified at KRS 211.490-.496) that authorized the establishment of a state trauma system, although no funding was appropriated for its support. The state Committee on Trauma, convened by the state



Trauma Systems and the Kentucky Trauma Registry, cont.

chapter of the American College of Surgeons, has served as the vehicle for trauma system advocacy, working closely with the Kentucky Hospital Association and the Kentucky Department for Public Health. Since the enactment of the authorizing legislation, Governor Beshear has appointed a statewide Trauma Advisory Council that includes KIPRC representation.

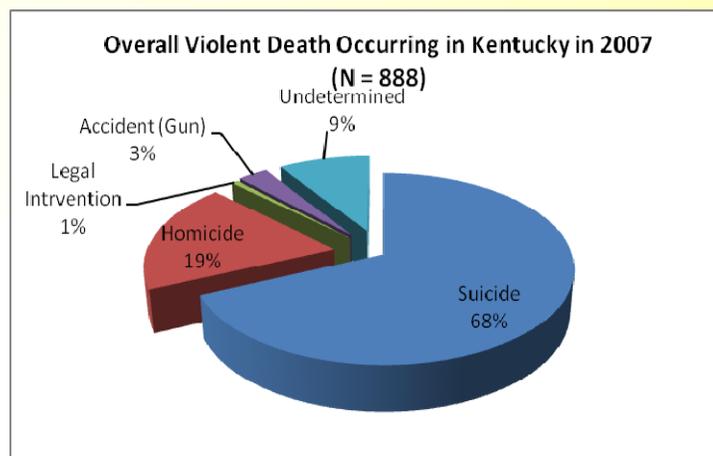
In addition to the newly achieved official status for the state trauma system, several facilities across the state have expressed interest in becoming verified trauma centers, including Critical Access Hospitals seeking Level IV designation as well as larger regional facilities aiming for Level III or Level II verification under American College of Surgeons guidelines. Modest support from the MESA physician group, the Foundation for a Healthy Kentucky, and a donation to the Kentucky Children's Hospital is allowing for the purchase of reporting software and technical consultations. KIPRC will continue its pivotal role as trauma registry compiler and data analyst. If additional trauma system funding becomes available, KIPRC will provide and coordinate injury prevention services and outreach in the context of the statewide trauma system.



Kentucky Violent Death Reporting System

The Kentucky Violent Death Reporting System (KVDRS), with funding from the Centers for Disease Control and Prevention, began collecting statewide violent death information in 2005. The KVDRS integrates investigative information from the Kentucky State Police, coroners, medical examiners, forensic crime laboratories, and toxicology laboratories about deaths that occur within Kentucky.

Nearly all (87%) violent deaths occurring in Kentucky in 2007 were classified as suicide or homicide. Suicide was the most common manner (606, 68%) of violent death in Kentucky. Homicide ranked second (173, 19%) as a cause for violent death, but comprised less than a quarter of the total violent deaths. The remaining cause of death was attributable to undetermined cause (only 82, 9%) and unintentional firearm death (27, 3%).



It's important to examine intimate partner problems in all cases of violent death not only in cases of homicide. Prevention efforts in suicide would look entirely different than protecting populations against domestic homicidal threat. Additionally, differences in circumstances surrounding suicide between men and women highlight the necessity for differences in prevention approaches.

In 2006 and 2007, women were almost three times more likely to have attempted suicide prior to the completed suicide than men. Men were 4.35 times more likely to experience a recent criminal/legal problem than women. Women were 1.5 times more likely to leave a suicide note than men, but men more often disclosed their intent to commit suicide to a friend or family member prior to taking their lives. Men suffered more often from a crisis within the two weeks prior to the suicide and they suffered more often from job problems; women were more often in treatment for a mental health problem at the time of the suicide than men.

KVDRS, cont.

A intimate partner problem was documented as a contributing factor on the coroners' investigation report in 128 (29%) of all suicide cases where the circumstances were known in 2005. In 54 (42%) of the 128 cases, the coroner noted that the decedent's intimate partner was in the process of leaving, breaking up, had recently left, had recently separated, had recently filed for divorce, there was an impending divorce, or a divorce was recently finalized (Table 2). Of those 54 cases involving intimate partner problems, most (87%) of the suicide victims were men and were significantly different than the females.

Table 1. Suicide and Intimate Partner Problems (IPP): Kentucky 2005

	Number of Suicides* (N=128)	Males (N=105)	(%) of Males	Females (N=23)	(%) of Females	P value
Suicide over Intimate Leaving/Ending Relationship	54	47	87%	7	13%	<.0001

*Number of suicides with intimate partner problem noted as a precipitating circumstance information available to the KVDRS project

The breakup of an intimate relationship often leaves men vulnerable to explosive behavior and known interventions to de-escalate vulnerable men are limited. As a result of this study we offer the following recommendations: partnering with the media, and community-based programs and services to systematically disseminate information on issues such as male "Intimate Partner Problems" in suicide. It is especially important to monitor this at-risk population and develop specific interventions, whether media driven or community based, interventions designed to assist men in the midst of crisis. We also echo previously published recommendations to continue the use of violent death surveillance to improve risk factor identification and treatment of potential victims.

Study results were published in the Surgeon General's public health journal. This garnered national recognition of Kentucky's Violent Death Reporting System and its efforts.

KVDRS...

Success Story: The KVDRS and the KSPG: Partnering to Prevent Suicide

The most common reasons for a male youth (9-17 year old age group) to die by suicide in 2006 were problems with a girlfriend, current mental health problems and a recent crisis, whereas in females the most common reason was a substance abuse problem. In 2007, male circumstances involved a relationship problem, school problems, or current depressed mood, whereas females' top reasons were a school problem or current depressed mood. Of those that disclosed their intent to commit suicide, 88% were males.

In youth who died by suicide in 2006 and 2007, all but one were white and the most commonly used mechanism was a firearm. Surprisingly, females used a firearm nearly as often as males, and males died more often from strangulation/suffocation.

The Kentucky Suicide Prevention Group (KSPG) has a strong voice for suicide awareness and prevention in local communities and at the state level. Prior to partnering with the KVDRS, the KSPG relied heavily upon state and national data that was often outdated or hard to find and decipher.

Collaborating with the KVDRS has allowed the KSPG to tailor prevention and awareness efforts to particular populations and audiences. Hotspots and risk factors that are easily identified by the KVDRS have aided the KSPG in achieving established goals.

An open dialogue between the two agencies has helped the KVDRS to find appropriate venues through which to disseminate timely and valuable information about the problem of suicide, and created a mutually beneficial partnership. The symbiotic relationship that the two agencies currently enjoy has met the needs of both and is thus able to meet the urgent needs of communities across the Commonwealth.

Crash Outcome Data Evaluation

Kentucky's Crash Outcome Data Evaluation System (CODES) is funded by the National Highway Safety Administration (NHTSA). The purpose of the project is to link state motor vehicle traffic crash report databases to administratively unrelated databases that contain medical and economic information pertaining to persons involved in crashes. This linked database enables us to discover relationships between crash characteristics and injury outcomes for persons hospitalized as a result of motor vehicle crashes, and to assess the acute care hospital charges associated with their treatment. To date, we have linked the crash and hospital inpatient databases for 2000 to 2007, and the crash, hospital inpatient, and hospital outpatient databases for 2008.

In 2009 we contributed Kentucky CODES data for two NHTSA data requests. The first request will result in a multi-state publication describing traumatic brain injury outcomes for motorcyclists. The second will be used to update NHTSA's algorithm for converting police-reported injury severity scores, based on the KABCO scale, to Maximum Abbreviated Injury Severity (MAIS) Scores. One use of this conversion algorithm is in estimating long-term economic costs of motor vehicle crashes based on police crash reports.

Currently we're using CODES linked data from 2008 to develop a set of non-fatal injury indicators for motor vehicle crashes. The indicators to be developed are based on emphasis areas of the Governor's Executive Committee for Highway Safety, and include:

Young drivers (ages 16-21)

Lane departure crashes

Impaired driving

Aggressive driving

Occupant protection

Motorcycle safety

CODES...

Success Story: KIPRC expands CODES database to include outpatient hospital records

Background:

Kentucky has been funded under the National Transportation Safety Administration's (NHTSA) Crash Outcome Data Evaluation System (CODES) program since 1998. Through the CODES project, KIPRC has assembled a linked database consisting of police crash report records from the Collision Report and Analysis for Safer Highways (CRASH) data system and hospital inpatient discharge records for calendar years 2000 through 2007. This database is used to provide information about the medical outcomes of survivors of motor vehicle crashes, which in turn is used by the traffic safety community in Kentucky to support programs, policymaking and strategic planning efforts aimed at making our roads safer.

Challenge:

A major shortcoming of Kentucky's CODES database has been its lack of information about crash participants who were treated as outpatients at Kentucky hospitals. While there are approximately 650,000 inpatient discharges annually in our state, there are several million hospital outpatient visits each year. The cost of collecting and processing those additional records has been the main obstacle to including outpatients in the CODES linked database.

Solution:

Through Section 408 of the surface transportation act, known as SAFETEA-LU (Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users), the federal government provides incentive funds to states to improve their traffic records data systems. The Section 408 grant program is administered by the Kentucky Office of Highway Safety, in collaboration with traffic records stakeholders, through the Kentucky Traffic Records Advisory Committee (KTRAC). Michael Singleton has chaired the Injury Surveillance/EMS subcommittee of KTRAC since 2004. In 2007, he invited the Kentucky Hospital Association to submit a proposal for a Section 408 grant to help fund the collection of outpatient data from all Kentucky hospitals. The project was approved and funded, and collection of outpatient data commenced on January 1, 2008.

CODES...

Success Story: KIPRC expands CODES database to include outpatient hospital records

Result:

In January 2010, KIPRC linked hospital outpatient records for calendar year 2008 with the CRASH database records for the first time. The result was an additional 33,000 cases added to the CODES database for 2008. We now have the ability to provide a much more complete picture of the medical outcomes for survivors of motor vehicle crashes. Furthermore, NHTSA is considering this project for recognition as a Best Practice for the use of state Section 408 funds.

Percentage of treat-and-release ED visits due to injuries for residents of Kentucky health department districts.

District health departments	Injuries	All other causes	Total	Percent injuries
Lincoln Trail	20,544	65,477	86,021	23.9
Barren River	17,556	73,692	91,248	19.2
Purchase	16,073	56,414	72,487	22.1
North Central	5,635	17,782	23,417	24.0
Lake Cumberland	25,555	83,216	108,771	23.5
Northern Kentucky	30,261	99,489	129,750	23.3
Little Sandy	3,212	10,648	13,860	23.2
Kentucky River	10,017	37,138	47,155	21.2
Cumberland Valley	14,313	57,588	71,901	19.9
Green River	17,241	61,464	78,705	21.9
WEDCO	8,107	25,721	33,828	24.0
Gateway	7,347	23,700	31,047	23.7
Three Rivers	5,192	15,360	20,552	25.3
Pennyrile	3,604	11,504	15,108	23.9
Buffalo Trace	1,665	5,843	7,508	22.2

CODES...

Success Story: KIPRC expands CODES database to include outpatient hospital records

Percentage of treat-and-release ED visits due to injuries for residents of Kentucky independent health departments.

Independent health departments	Injuries	All other causes	Total	Percent injuries
Allen	2,335	7,762	10,097	23.1
Anderson	1,604	5,464	7,068	22.7
Bourbon	2,323	7,464	9,787	23.7
Boyd	7,680	24,802	32,482	23.6
Boyle	1,501	5,100	6,601	22.7
Bracken	765	2,531	3,296	23.2
Breathitt	2,223	8,272	10,495	21.2
Breckenridge	1,703	5,934	7,637	22.3
Bullitt	4,792	14,007	18,799	25.5
Christian	4,129	16,933	21,062	19.6
Clark	3,946	14,642	18,588	21.2
Estill	2,292	9,150	11,442	20.0
Fayette	15,831	67,181	83,012	19.1
Fleming	1,510	4,733	6,243	24.2
Floyd	5,081	18,561	23,642	21.5
Franklin	4,222	15,514	19,736	21.4
Garrard	1,189	4,107	5,296	22.5
Greenup	3,289	10,346	13,635	24.1
Hopkins	3,829	12,432	16,261	23.5
Jefferson	51,363	175,317	226,680	22.7
Jessamine	2,678	11,394	14,072	19.0
Johnson	2,965	10,334	13,299	22.3
Knox	2,206	9,520	11,726	18.8
Laurel	5,333	20,826	26,159	20.4
Lawrence	1,802	5,595	7,397	24.4
Lewis	666	2,418	3,084	21.6
Lincoln	1,995	6,721	8,716	22.9
Madison	7,431	31,835	39,266	18.9
Magoffin	1,293	4,257	5,550	23.3
Marshall	2,924	8,192	11,116	26.3
Martin	831	2,659	3,490	23.8
Mercer	2,072	6,489	8,561	24.2
Monroe	1,283	4,896	6,179	20.8
Montgomery	3,925	11,493	15,418	25.5
Muhlenberg	2,761	8,560	11,321	24.4
Oldham	2,349	5,997	8,346	28.1
Pike	3,300	12,899	16,199	20.4
Powell	1,610	5,990	7,600	21.2
Todd	538	2,077	2,615	20.6
Whitley	4,530	16,494	21,024	21.5
Woodford	1,908	6,539	8,447	22.6

Integrated Core Injury Prevention and Control Project (ICIPC)

Through a diverse coalition called the Kentucky Safety and Prevention Alignment Network (KSPAN), this project is working to improve Kentucky's core capacity to perform injury surveillance and epidemiology, and to implement and evaluate evidence-based injury prevention and control programs. Highlights for 2009 -2010 include the following:

Senior falls

Establishment of the Injury Control and Prevention (ICPG) Workgroup and the Kentucky Safe Aging Coalition (KSAC)

- June 2008: KSPAN held a symposium to form the basis of a statewide coalition
- October 2008– present: KSAC meetings have been held every other month.
- Older adult falls hospitalization data for KY and each county (120 counties) was posted on the KSPAN website <http://www.kspan.uky.edu/data.htm>
- May 2009: Press Release on KSAC formation as a state coalition on fall prevention

Four local health departments (Green River, Barren River, Lake Cumberland Health Districts and the Madison County Health Department) were selected to receive osteoporosis state funding to develop local coalitions or task forces to address older adult falls prevention at the local level. KIPRC is working with the Department for Public Health (DPH) and local coalitions to identify opportunities to improve education and referrals by local providers who encounter or treat older adults who have fallen and provide technical assistance.

KSAC received tremendous response from interested organizations, and has over 76 individuals/organizations represented. Efforts are focused on engaging key partners, disseminating data, and supporting the formation of local coalitions across Kentucky. While the coalition maintains its focus on fall prevention, its membership expanded its mission to include all forms of injury and violence prevention for older adults, and adopted the name "KY Safe Aging Coalition". In 2009, a KSAC coordinator was hired to work with local coalitions on fall prevention and for the KY Safe Aging Coalition.

The KY Safe Aging Coalition is part of the State Coalitions On Fall Prevention workgroup of the National Falls Free Coalition, and participated in the national Falls Prevention Awareness Day in September 2009. Governor Steve Beshear proclaimed the day as "Falls Prevention Awareness Day," and the KY Safe Aging Coalition worked with state partners to conduct awareness activities. Press releases

ICIPC, cont.

were distributed to state and local media outlets from the DPH, University of Kentucky, University of Louisville and Healthcare Excel. Activities were planned in 37 communities around the state.

The Safe Aging Coalition worked with the Kentucky Pharmacists Association to create a fall prevention fact sheet for distribution to older adults through pharmacists and other groups. The fact sheet was printed and distributed by the Kentucky Pharmacists Association.

The Safe Aging Coalition worked with the University of Kentucky Extension Service to review a series of fact sheets that will be distributed to older adults through their extension agents in all 120 counties of Kentucky.

Community presentations to older adults and caregivers regarding falls prevention were conducted throughout the year. Some of these presentations included the Alzheimer's Association Annual Conference, Osher Lifelong Learning Institute, Bluegrass Area Agency on Aging, and the Franklin County Senior Citizens Center.

Safe Communities America

In order to assist local communities in developing capacity for injury and violence prevention, we are partnering with Kentucky's National Safety Council office to implement the Safe Communities America (SCA) program in Kentucky. Our goal is to provide training, technical assistance, and other forms of support to communities that have achieved the SCA designation, and to assist communities that have not yet been designated but are interested in working towards that goal.

On March 23rd, 2010, Madison County officially became the 7th Safe Community designated in the United States and the first in Kentucky. For a community to be designated as a Safe Community they must successfully demonstrate they meet the following six indicators:

1. Leadership based on partnerships and collaborations with all community sectors that are responsible for safety and health promotion in their community;
2. Long-term, sustainable programs covering both genders and all ages, environments, situations, and includes preparing their citizens for emergencies and disasters;

ICIPC, cont.

3. Joined and supported programs that target high-risk groups and environments, and programs that promote safety for vulnerable groups in their community;
4. Collect data on number and causes of injuries;
5. Evaluate their programs, processes and the effects of change;
6. Demonstrated willingness to assist and network outside their community.

The Madison County Safety Coalition also received the Kentucky Public Health Association's Group Award on March 30th, 2010, for their accomplishments in injury prevention. This award is to honor a designated group or organization that has collectively contributed to public health program development, toward enhancement of public health in the Commonwealth.



Photos are from the signing ceremony of Madison County as an International Safe Community with representatives from the World Health Organization's Collaborating Centre on Community Safety Promotion and community leaders on March 23, 2010.

ICIPC, cont.



These photos are from the Site Visit by representatives for the World Health Organization's Collaborating Centre on Community Safety Promotion meeting with Madison County Safety Coalition Coordinator, Lloyd Jordison, RN on December 14, 2009.

2008 statewide ED data

We worked with the Kentucky Hospital Association, the Kentucky Office of Health Policy, and the Kentucky Transportation Cabinet to secure funding to support the collection of data from emergency departments across Kentucky for 2008. This was a significant step forward improving Kentucky's injury surveillance infrastructure.

KSPAN has finalized the Kentucky Injury Prevention Plan and it is posted on the KSPAN web site <http://www.kspan.uky.edu/plan.htm>

Central Nervous System Injury Surveillance Project

The Central Nervous System Injury (CNSI) Surveillance Project is funded by the Kentucky Traumatic Brain Injury Trust Fund Board which is housed in the Department of Aging and Independent Living. Its purpose is to track cases of traumatic brain injury, spinal cord injury, and acquired brain injury as defined by the Centers for Disease Control and Prevention (CDC) and the Kentucky Revised Statutes (KRS 211.470). Cases are taken from the Kentucky Hospital Discharge Database (HDD) and the National Center for Health Statistics' annual Multiple Cause of Death (MCOD) files. These sources are linked to resolve double-counting of cases.

The ninth annual CNSI report, which summarizes injuries that occurred within the calendar year 2006, was completed in July 2009. In 2006, traumatic brain injury (TBI) was a factor in the deaths of 985 Kentuckians, as well as the live discharges of 3,552 Kentuckians from licensed, acute-care hospitals across the state. TBI played a role in the death or hospitalization of over 12 state residents per day. Acquired brain injury (ABI) was diagnosed in 1,485 deaths and 3,689 live discharges (more than 14 ABI per day), and spinal cord injury (SCI) was reported in 61 deaths and 195 live discharges, or almost 5 SCI per week.

Our results indicate a need to focus prevention efforts on the following causes and target populations:

- Motor vehicle traffic crashes (TBI and SCI), especially among ages 15-24
- Falls (TBI and SCI), especially among ages 0-4, and 65 and older
- Anoxia/hypoxia (ABI), especially among ages 45 and older
- Exposure to toxic substances (ABI), especially among ages 25-44

Motor vehicle traffic crashes in persons aged 15-24, and falls in persons aged 65 and older, again emerged as the leading causes of TBI. Anoxia/hypoxia was most common among persons aged 65 and older, whereas exposure to toxic substances was greatest among those aged 25-44.

Additional information and full reports can be found at <http://www.kiprc.uky.edu/projects/tbi/index.html>.

Community Injury Prevention Program (CIPP)

The Community Injury Prevention Program (CIPP) provides direct delivery of community based injury prevention programs and services. CIPP is active throughout Kentucky, though the higher rates of injury related morbidity and mortality found in the eastern and southeastern areas of the Commonwealth have led to a concentration of effort in those areas. CIPP is currently focused on addressing several injury risk areas including residential fire safety, traffic safety and recreational safety.

The Smoke Alarm Installation and Fire Education (SAIFE) project is the largest single CIPP project. This project, which is funded by CDC's National Center for Injury Prevention and Control, focuses on providing working smoke alarms for homes that lack them and providing fire safety education for the residents of those homes, as well as for the general public in the communities where the project operates. CIPP partners with local fire departments and public health departments to carry out the project. CIPP provides smoke alarms, educational materials, training, technical support, and reimbursement for data collection expenses, while the local partner organizations provide the labor needed to identify and recruit households without smoke alarms, install the alarms, provide fire safety education, and collect project evaluation data.

During FY 2010 CIPP is working with three fire departments and a local public health department to install more than 2,500 smoke alarms funded by CDC. Funding for an additional 4,800 smoke alarms and related educational materials was also obtained through the Federal Emergency Management Agency's Fire Safety Grant (FSG) program. These alarms and materials are currently being distributed to additional fire departments and health departments that did not received CDC-funded materials.

Since 1998 the SAIFE project has installed 31,399 smoke alarms in 13,757 homes located in more than a third of Kentucky's 120 counties. These totals do not include 5,000 smoke alarms that were distributed through local public health departments during the sec-



CIPP, cont.

ond year of the project. The project is scheduled to end in 2011, when CDC will cease funding smoke alarm installation projects.

CIPP began as the Motor Vehicle Injury Prevention Program (MVIPP) in 1995 and traffic safety remains one of its core missions. Program personnel work with local governments, state and local agencies, community safety coalitions and other organizations to promote traffic safety and conduct intervention activities. During the 2009 calendar year members of the CIPP staff participated in more than fifty traffic safety activities including seat belt promotions, impaired driving prevention projects, child safety seat checkups and other traffic safety activities. CIPP also provides assistance with child passenger safety technician training courses and operates an alternative sentencing program for child restraint law violators.



The alternative sentencing program (ASP) provides an alternative to fines for first time violators of Kentucky's child restraint law. Violators, who are sentenced to complete the program by a district court judge, attend a three to four hour training course in lieu of paying a fine and related court costs. The course includes classroom education in the function and benefits of child restraint systems, proper restraint selection and the procedure for properly installing a child restraint in a vehicle. Students then receive individual, hands on instruction in the restraint installation process. Those who are able to demonstrate financial hardship can even receive a free child restraint through the program.

The purpose of ASP is not simply to educate parents and caregivers – it is also to encourage enforcement of the child restraint law. Discussions with local officials and law enforcement officers indicated that many officers and judges were hesitant to enforce the law,



CIPP, cont.

especially in cases where the violator appeared to be poor. The officers and judges felt that imposing a fine and court costs on an individual who might already be struggling financially was not an appropriate way to increase child restraint use. Providing an alternative sentencing option – where violators give up time rather than money, and can receive help in obtaining a child restraint if they cannot afford one – helped to convince these officials to actively enforce the law. In Montgomery County, for example, child restraint citations averaged 6 per year during the three years prior to the implementation of ASP. During the 12 years since the program was established child restraint citations have averaged 35 per year – an increase of almost 400 percent.

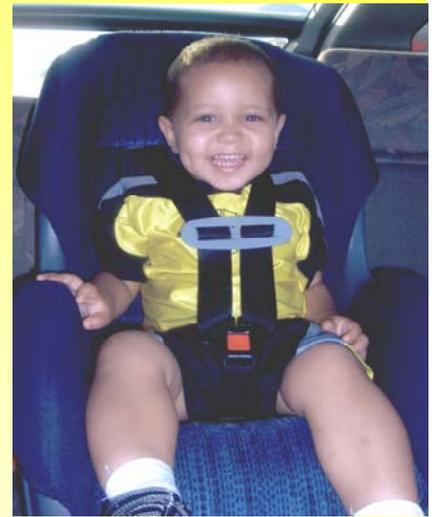
In recent years CIPP has begun to work in the area of recreational safety, and particularly in the area of all terrain vehicle (ATV) safety. The widespread popularity of ATVs has led to a serious, on-going injury problem in Kentucky, with many of those injured dying as a result of their injuries. CIPP staff members are working to promote all terrain vehicle (ATV) safety, both to the general public and to state and local officials who are working to develop “adventure tourism” activities involving ATVs. They promote the use of helmets and other safety equipment, proper rider training and the selection of an appropriately sized machine for the age and skill level of each rider.

Finally, CIPP personnel serve as technical consultants and resource personnel for local public health departments and public safety agencies. The past decade has seen a significant growth in injury prevention capacity among many local health departments, but many others lack the staff and resources to address injury problems in a comprehensive way and many local public safety agencies still lack the ability to develop and evaluate data-driven injury prevention projects. These organizations often turn to CIPP staff members for help in creating and evaluating injury prevention projects in their communities.

Shrinking resources have led to reductions in CIPP activities during recent years, but the program staff remains committed to the mission of reducing serious injuries in Kentucky. From their traditional missions of traffic safety and fire safety to providing information to the Kentucky Division of Emergency Management during the 2009 ice storm, CIPP personnel continue to contribute to the health and safety of Kentuckians.

Pediatric and Adolescent Injury Prevention Program

The Pediatric and Adolescent Injury Prevention Program (PAIPP) focuses on the understanding of pediatric deaths through Child Fatality Review (CFR) and the prevention of child and adolescent injury and death from both unintentional and intentional causes. Our past funding history includes federal grants from Health Resources and Service Administration's (HRSA) Emergency Medical Services for Children, National Institute for Occupational Safety and Health (NIOSH), Robert Wood Johnson Foundation (RWJ) as an Injury Free Coalition for Kids site with additional community playground grants from Allstate Foundation, and fifteen years of support from the Kentucky Department for Public Health's (DPH) Division of Maternal and Child Health (MCH). We have also been part of federal grants on methamphetamine and sudden unexpected infant death. In addition to our MCH funding, in 2009 we became the recipients of a Community Access to Child Health (CATCH) Planning Grant on mental health services for children in foster care from the American Academy of Pediatrics. Through the Director of PAIPP, the program is linked to the University of Kentucky's Department of Pediatrics,



College of Medicine and the Department of Preventive Medicine and Environmental Health, and the College of Public Health.



Working with DPH/MCH primarily at the division level rather than directly with the public, we seek to support and empower the injury prevention efforts of local health departments, child care centers, home visitation projects, and other state and county programs. We facilitate linkages among people who can help support each other in their injury prevention and CFR work. Under contract to MCH in the year 2009, we served as the lead agency for the Kentucky State Safe Kids Coalition, guiding the efforts of four rural

Safe Kids Chapters and working with another four counties towards the establishment of Safe Kids chapters. Through coordination with Safe Kids Coalitions in Kentucky, we strive to maintain a cadre of nationally certified child passenger safety instructors and technicians and have worked this year with state child care leaders to implement a program to provide booster seats

PAIPP, cont.

and education to child care centers that transport children. Training on child passenger safety, drowning, fire, safe sleep and other aspects of child safety was provided to



Kentucky DPH's Health Access Nurturing Development Services (HANDS) home visitors, Child Care Health consultants, school nurses, Commission for Children with Special Health Care Needs staff, and foster/adoptive parents. The outreach coordinator has provided child passenger safety consultation during the past year for children with special health care needs in foster care across the state.

As part of our contract with MCH, PAIPP also supports the state Child Fatality Review program and grief counseling responsibilities of local health departments. In 2009, we were asked by DPH leadership to brief the new state CFR Coordinator on the history of the program and to assist her in assuming her state responsibilities for maintaining an active state team with knowledge of timely pediatric death trends and for providing any assistance possible in the preparation of the legislatively mandated annual report. We served as the initial link between this person and the most active and organized local teams in order that she might see how things were working at the county level. We assisted her at the state Coroner Conference in the spring of 2009, as well as continuing our own training and support efforts for local teams especially in the eastern half of the state. We visited new counties and were able to share their injury prevention efforts with others; examples include drowning prevention material given to us by Mercer County CFR and a successful all terrain vehicle (ATV) helmet program. We have worked to improve grief counseling resources for local health departments, and to improve the quality and completeness of child death review at the local level in order to improve our understanding of the ways in which children die, and future prevention practices.

In 1998, the PAIPP staff were honored to have been asked to join the national effort to revise the next edition of *Caring for our Children-National Health and Safety Performance Standards: Guidelines for Out-of-Home Child Care Programs*. This publication is a combined effort of the American Academy of Pediatrics (AAP),

PAIPP, cont.

American Public Health Association and the federal Maternal and Child Health Bureau. The draft of our publication revision has been circulated nationally and subsequent further work has been done on the responses to the draft. Dr. Pollack, PAIPP director, was asked by the AAP to serve on the Injury Prevention Technical Panel while Ms. Tyner-Wilson, Outreach Coordinator, was invited to serve on the Children with Special Needs Technical Panel. In other academic activities, Dr. Pollack worked on the revision of a chapter in the *Adolescent Occupational Exposures* for the American Academy of Pediatrics.

The Injury Free Coalition for Kids of Lexington is a joint PAIPP and Kentucky Children's Hospital injury program that works closely with community agencies in Fayette County to support their prevention efforts. One of forty-seven sites across the country, Injury Free Coalition for Kids was originally supported by the Robert Wood Johnson Foundation. Work has continued in 2009 in maintaining the two community built playgrounds that were partially funded through Allstate playground grants, and to educate child care centers about playground safety. The fire safety education/smoke detector project developed in collaboration with the Lexington Fire Department continues, with referrals from Family Resource Centers and various home visiting programs. Through the Injury Free Coalition for Kids and links with the Kentucky Chapter of the AAP, child abuse prevention and recognition remain a focus of work, along with injury prevention for children in foster care and those with special health care needs.



A special initiative in 2009 has been the involvement of PAIPP to represent KIPRC on the University of Kentucky's HealthCare's *Saddle Up Safely* initiative for the World Equestrian Games. We have reviewed pediatric horse injury data and have participated in the group reviews of best practice brochures designed to increase riding safety for people and horses alike. We continue to be involved in efforts to increase safety especially for children who ride horses in our state, and expect to contribute to safety efforts planned to take place at the Games themselves.

Consumer Product Safety Program

Cooperation between the U. S. Consumer Product Safety Commission and retailers or importers of consumer products has led to an efficient process for removing recalled products from the retail stream. For instance, many national chains can control cash registers from their home offices in order to prevent the sale of recalled products.

Influencing individual consumers to identify recalled products in their possession and take appropriate steps to repair or replace them is more challenging. Durable goods are shared, stored for future use and sold through yard sales or second hand stores. Consumers can be unaware of recalls, or simply not invest the time necessary to identify products.

The Kentucky Product Safety Program works to ensure compliance by the retailer and vigilance by the consumer. On the retail side, sixteen consignment store seminars were conducted to inform employees about new rules prohibiting the sale of recalled products and providing information to help identify those items. Twelve one- dollar type stores were visited during the Christmas season to check for the presence of recalled toys or those that do not meet safety standards.

On the consumer side, displays were presented at 10 countywide baby safety showers to teach new parents the importance of maintaining safe nursery equipment. General product safety information was distributed in English and Spanish at four Latino health fairs. Selected recall notifications from CPSC were sent by e-mail to county health departments and day care center inspectors for further distribution.



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