Hawai‘i Injury Prevention Plan 2012-2017

Injury Prevention Advisory Committee
Injury Prevention and Control Section

Hawai‘i State Department of Health
Emergency Medical Services and Injury Prevention System Branch

Dear Community Colleagues,

We are pleased to present you with the *Hawai‘i Injury Prevention Plan 2012-2017* that serves as a guide for reducing the eight leading causes of injury in Hawai‘i. This document builds on the previous *Hawai‘i Injury Prevention Plan 2005-2010* and is the result of a collaborative effort between the Hawai‘i State Department of Health (DOH), Emergency Medical Services and Injury Prevention System Branch (EMSIPSB); the Injury Prevention Advisory Committee (IPAC); and other community partners. In the gap period between the end of the previous plan and inception of the new plan, the initial plan continued to guide the work of the DOH Injury Prevention and Control Section and community partners.

Here in Hawai‘i, we have made great strides in preventing injuries through the cooperative efforts of government agencies, voluntary and professional organizations, and numerous other community partners. There is much more we must do, however, to further reduce the burden of injury.

Injury prevention remains an under-recognized and under-funded area of public health. Now more than ever, we must leverage our resources to join the best knowledge and practices with strong partnerships to effectively prevent injuries, thereby reducing pain and suffering, and saving Hawai‘i millions of dollars each year. We must work together to raise public awareness, build community capacity for injury prevention efforts, make changes to the physical environment, and implement policy and organizational practices that prevent injuries.

On behalf of the Injury Prevention Advisory Committee and the Hawai‘i State Department of Health, we invite you to join us in achieving the recommendations set forth in this plan. Please contact us through www.nogethurthawaii.gov or call the Injury Prevention and Control Section on O‘ahu at (808)733-9320.

Working together, we can accomplish what none of us can do alone.

Bruce McEwan, PhD
Chair
Injury Prevention Advisory Committee

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Injury Prevention is a Public Health Priority in Hawai'i

Injuries in Hawai'i are responsible for more deaths from the first year of life through age 39 than all other causes combined, including heart disease, stroke, and cancer. Among residents of all ages, injury is the fourth leading cause of death and disability. The vast majority of injuries, however, are non-fatal and can lead to a range of outcomes, including temporary pain and inconvenience, disability, chronic pain, or a complete change in lifestyle.

During an average week in Hawai'i:

- 13 residents die from an injury
- 115 are hospitalized
- Nearly 1,530 are treated in emergency departments

While the greatest impact of injury is in human suffering, the financial cost is staggering. In Hawai'i, injury-related hospitalizations cost an estimated $364 million annually.

Ten leading causes of death among Hawai'i residents, by age group, 2007-2011

	<1	1-14y	15-24y	25-34y	35-44y	45-54y	55-64y	65+y	all ages
1	Perinatal conditions 292	Unintentional injuries 52	Unintentional injuries 212	Unintentional injuries 196	Unintentional injuries 257	Malignant neoplasm 923	Malignant neoplasm 2,081	Heart disease 8,911	Heart disease 11,170
2	Congenital anomalies 70	Malignant neoplasm 23	Suicide 125	Suicide 124	Malignant neoplasm 246	Heart disease 687	Heart disease 1,236	Malignant neoplasm 7,531	Malignant neoplasm 10,936
3	Unintentional injuries 38	Congenital anomalies 15	Malignant neoplasm 46	Malignant neoplasm 84	Heart disease 234	Unintentional injuries 366	CVD* 310	CVD* 2,589	CVD* 3,111
4	Unintentional injuries 27	Homicide 8	Heart disease 27	Heart disease 68	Suicide 138	Suicide 161	Unintentional injuries 250	Chronic lower resp. diseases 1,276	Unintentional injuries 2,159
5	Other resp. diseases 10	Suicide 5	Injuries of unk. intent 18	Injuries of unk. intent 33	CVD* 53	CVD* 137	Diabetes mellitus 229	Influenza and pneumonia 1,183	Chronic lower resp. diseases 1,483
6	Influenza and pneumonia 8	Influenza and pneumonia 5	Homicide 12	Homicide 22	Injuries of unk. intent 46	Liver disease and cirrhosis 135	Liver disease and cirrhosis 178	Alzheimer's disease 1,081	Diabetes mellitus 1,402
7	Septicemia 8	Septicemia 5	Congenital anomalies 6	CVD* 14	Liver disease and cirrhosis 32	Injuries of unk. intent 107	Chronic lower resp. diseases 138	Diabetes mellitus 1,040	Influenza and pneumonia 1,349
8	Other acute lower resp. 4	Other resp. diseases 5	Influenza and pneumonia 4	Influenza and pneumonia 9	Homicide 25	Diabetes mellitus 100	Suicide 130	Nephritis, nephrotic synd. 833	Alzheimer's disease 1,085
9	Injuries of unk. intent 3	Heart disease 4	Pneumonitis 3	Chronic lower resp. diseases 7	Diabetes mellitus 25	Viral hepatitis 55	Nephritis, nephrotic synd. 95	Unintentional injuries 800	Nephritis, nephrotic synd. 990
10	Heart disease 3	Perinatal conditions 3	Septicemia 3	Congenital anomalies 7	Other circ. diseases 25	Chronic lower resp. diseases 47	Viral hepatitis 81	Septicemia 466	Suicide 795

*CVD – cerebrovascular diseases, including stroke

Deaths grouped as recommended by National Center for Health Statistics http://www.cdc.gov/nchs/data/nvsr/nvsr53/nvsr53_15.pdf).

Note: The terms "intentional" and "unintentional" are used in this plan to indicate whether or not the act or event was intended to harm a person. Unintentional injuries are commonly referred to as "accidents" (e.g., falls, drownings, poisonings, and motor vehicle-related injuries). Intentional injuries are purposefully inflicted on others (assaults) or oneself (suicide attempts).

Injury Prevention is a Public Health Priority in Hawai'i

Leading Causes of Injury Mortality and Morbidity among Hawai'i residents[1]

	Death Certificates (fatal)			Hospital Admission Records (non-fatal)			Emergency Department Records (non-fatal)		
	Cause	#[2]	%	Cause	#[3]	%	Cause	#[4]	%
1	Suicide	159	24%	Falls	2,705	45%	Falls	20,920	26%
2	Falls	108	16%	Car occupant	414	7%	Striking[5]	11,572	15%
3	Poisoning	98	15%	Suicide attempt/ self inflicted	361	6%	Cut/pierce	7,563	10%
4	Car occupant	58	9%	Assault	307	5%	Overexertion[6]	6,618	8%
5	Drowning	35	5%	Motorcyclist	276	5%	Car occupant	4,204	5%
6	Suffocation	30	4%	Poisoning	207	3%	Assault	3,936	5%
7	Motorcyclist	29	4%	Striking[5]	191	3%	Natural/ environmental[7]	3,549	4%
8	Pedestrian	26	4%	Pedestrian	137	2%	Bicyclist	1,133	1%
9	Assault	22	3%	Overexertion[6]	106	2%	Motorcyclist	1,044	1%
10	Fire/burn	4	1%	Bicyclist	105	2%	Fire/burn	988	1%
	all other	102	15%	*all other*	603	10%	*all other*	10,892	14%
	Annual total	671		**Annual total**	5,980		**Annual total**	79,576	

[1] Non-residents comprised 9% of the victims killed by injuries in the state, 9% of those hospitalized, and 10% of those treated in emergency departments.

[2] Annual number of deaths, from 2007-2011 death certificates. For underlying cause of death in the ICD-10 code series: V01-Y36, Y85-Y87, Y89, and U01-U03.

[3] Annual number of injury-related hospitalizations, from 2004-2008 records. For principle diagnosis in ICD-9CM code series: 800-909.2, 909.4, 909.9, 910-994.9, 995.5-995.59, 995.80-995.85.

[4] Annual number of injury-related hospitalizations, from 2004-2008 records. For principle diagnosis in ICD-9CM code series: 800-909.2, 909.4, 909.9, 910-994.9, 995.5-995.59, 995.80-995.85.

[5] Most (92%) of these patients were "struck accidentally by objects or persons"; the rest (9%) were "struck accidentally by falling object". Of the former, the most commonly specified causes were "striking…in sports" (20%), and "striking against…furniture" (4%). For the 30% of 2010 and 2011 records with specific coding, most (79%) of these injuries were sports-related, most commonly "surfing, windsurfing and boogie boarding" (16%), "american tackle football" (15%), basketball (10%), baseball (9%), and soccer (7%).

[6] Most (95%) of these injuries were related to "Overexertion and strenuous movements", with no further specificity. Subcategories include overexertion from sudden strenuous movements (39%), and trauma from repetitive motion, loads or impacts (17%). For the 30% of 2010 and 2011 records with specific coding, about half (44%) of these injuries were sports-related, including basketball (14%), and baseball, soccer and volleyball (5% each). Another 13% were due to "walking, marching and hiking", and 6% to running.

[7] Most (98%) of these visits were related to the bites or venom of animals, most specifically dog bites (36%), bee and wasp stings (11%), centipedes (11%) and venomous marine animals (6%).

The Hawai‘i State Department of Health, Injury Prevention and Control Section (IPCS), with strong support from the Injury Prevention Advisory Committee (IPAC), completed the *Hawai‘i Injury Prevention Plan* (HIPP) with funding from a Public Health Injury Surveillance and Prevention Program capacity building grant and a Core Violence and Injury Prevention Program grant, both from the Centers for Disease Control and Prevention (CDC).

The *Hawai‘i Injury Prevention Plan 2012-2017*, is a plan for injury prevention activities during the next five years. Developed in collaboration with partners from across the state, the plan provides:

- Overall direction and focus of IPCS and IPAC-led efforts
- Stimulus for organizations, agencies and community groups to collaborate on reducing or preventing injuries in Hawai‘i

This report builds on the earlier, *Hawai‘i Injury Prevention Plan 2005-2010* (available online: www.nogethurt.hawaii.gov). Details about the state's progress toward meeting the objectives outlined in the 2005-2010 report can be found in the Appendix A.

HIPP is a collaborative effort that reflects the current thinking of public health professionals and community partners in the following areas:

- Core capacity to sustain injury prevention policy and program activities
- Drowning
- Falls among older adults
- Poisoning
- Traffic-related injuries
- Suicide
- Violence and abuse

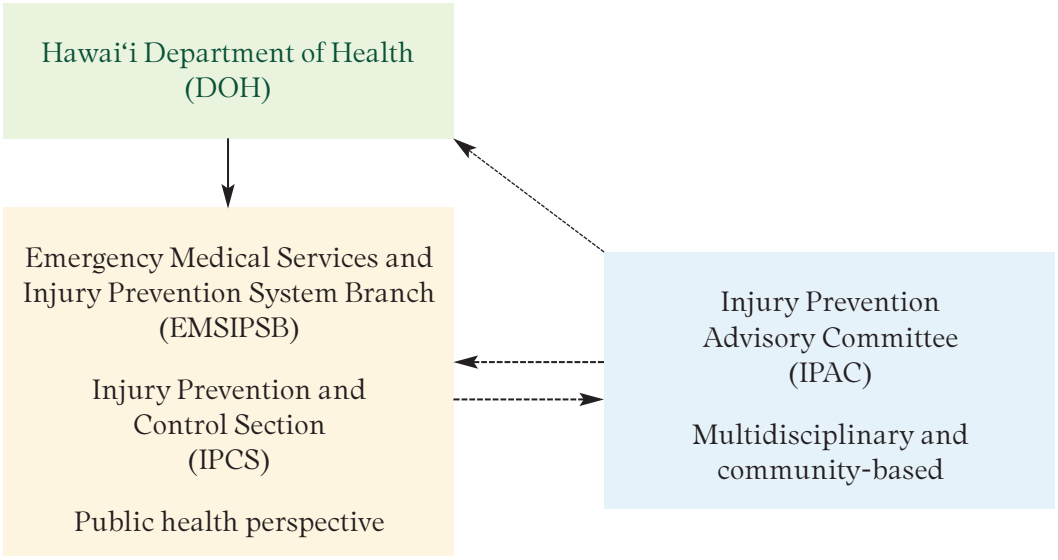
IPCS worked closely with experts and stakeholders in each area to review accomplishments, conduct needs assessments, and develop recommendations for the next five years. Additional information about the processes used to generate these recommendations are included in the individual chapters.

Injury Prevention and Control Section

The Injury Prevention and Control Section is part of the Emergency Medical Services and Injury Prevention System Branch at the Hawai'i State Department of Health. IPCS is the focal point in the Department of Health for injury prevention throughout the state for all age groups.

IPCS is responsible for coordinating, planning, conducting, and evaluating injury prevention programs; developing policy and coordinating advocacy; collecting, analyzing and disseminating injury data; and providing technical support and training. Much of their work is achieved through community coalitions and partnerships in order to increase and focus community resources, minimize duplication of effort, and support the injury prevention activities of local agencies and community organizations. The Spectrum of Prevention is used as a guiding model for IPCS's work to prevent injuries in Hawai'i (see Appendix E). IPCS also provides staff support to IPAC.

Relationship between Department of Health, IPAC, EMSIPSB and IPCS



Injury Prevention Advisory Committee

Mission: A safe Hawai'i from the mountains to the sea.

The Injury Prevention Advisory Committee is a volunteer network of professionals and community members committed to working together to prevent injuries in Hawai'i.

IPAC Members:

- Advise the Injury Prevention and Control Section
- Educate the public about injury prevention
- Advocate for injury prevention policies and legislation
- Serve as a liaison between IPAC and individual organizations
- Help identify and secure resources to support injury prevention

How the *Hawai'i Injury Prevention Plan* Can Be Used

The Hawai'i Injury Prevention Plan (HIPP) can be used in a variety of ways by local agencies, businesses, community organizations, advocacy groups, planners, decision-makers, researchers, and others interested in preventing injuries. Examples include:

- ***Collaboration***
  Groups and individuals interested in addressing a particular injury area can use HIPP to assess the current thinking, get an understanding of the key players involved, and build consensus for implementing priority activities.

- ***Policy making***
  Advocacy groups working in injury prevention can use HIPP to support and act on prioritized areas of concern and identify key partners to collaborate with.

- ***Program planning***
  Organizations and individuals interested in addressing a particular injury area can use HIPP for priority setting and action planning.

- ***Research***
  Researchers, including graduate and medical students, can use HIPP to develop studies to adapt and evaluate evidence-based practices for Hawai'i.

Policy and Program Activities

Background and Accomplishments

Since the *Hawai'i Injury Prevention Plan 2005-2010* was released, the Hawai'i State Department of Health, Injury Prevention and Control Section (IPCS) has worked closely with partners in the community to build and strengthen the infrastructure to support injury prevention policy, research, surveillance and programs in Hawai'i.

- With the support of IPAC, IPCS added a suicide prevention coordinator to their staff and now has three permanent state-funded positions.
- Complete and accurate data are critical to assessing and understanding the injury problem, and also to developing and evaluating prevention programs. E-codes capture how an injury happened (cause), the intent (unintentional or intentional, such as suicide or assault), and the place where the event occurred. IPCS led efforts to establish new standards for external cause of injury coding (e-coding) for hospitals to achieve and maintain. Currently, 90% of all emergency department and hospital admission records meet the new standards, up from 51% in 2003.
- In collaboration with Kapiolani Community College, Emergency Services Department, IPCS helped to develop, implement and evaluate injury prevention training modules for the emergency medical technician (EMT) program and mobile intensive care technician (MICT) program, and a continuing education module for emergency medical services personnel.
- Aiming to develop a cadre of individuals and organizations who are injury literate, articulate, and active, IPCS conducted public health competency building workshops and worked with affiliated injury prevention groups to coordinate conferences specific to certain injuries.
- In 2008, IPCS produced the Injuries in Hawai'i 2001-2006, and disseminated the data report to state legislators. In partnership with IPAC, IPCS has worked to increase awareness among policy makers and residents of Hawai'i about injuries as a major public health problem.
- In 2008, IPCS released a series of "No Get Hurt" radio, television, and print ads with prevention messages focused on different types of injuries that IPAC members helped to disseminate.
- Recognizing the significant percentage of Hawai'i residents that are affiliated with the armed forces, IPCS has fostered partnerships with all five branches. There are military representatives on the Injury Prevention Advisory Committee (IPAC) and the Prevent Suicide Hawai'i Steering Committee, and the military actively participates in the annual "Click It or Ticket" traffic safety campaign.

Recommendations

Building on work completed for the *Hawai'i Injury Prevention Plan 2005-2010*, IPCS and the IPAC steering committee developed the following recommendations. They are based on the core components of a state injury prevention program as identified by the Safe States Alliance (2003):

- Build a solid infrastructure for injury and violence prevention
- Collect and analyze injury and violence data
- Design, implement, and evaluate programs
- Provide technical support and training
- Affect public policy

Recommendation 1: Build and sustain infrastructure to provide leadership, data, technical assistance, and to support policy and evaluation for advancing injury prevention

Hawai'i needs a strong, stable, and comprehensive program to systematically address the many causes of injury in coordination with multiple partners. "CDC recommends that states adopt a comprehensive injury prevention program to provide consistent, reliable and comprehensive data for policymakers; ensure high-risk populations are identified and helped; lead state efforts among programs with various injury prevention goals; and provide continuity amid changing administrations and budget priorities" (Foreman, 2009).

The enactment of the Trauma System Special Fund by the Hawai'i State Legislature in 2007 provided for the development of a comprehensive statewide trauma system by the Department of Health. A comprehensive trauma system addresses the problem of injury along the full continuum from primary prevention through acute care and rehabilitation.

As a core component of this system, injury prevention will be more closely integrated with other strategies that can reduce the severity and outcomes of injuries and IPCS will have access to resources to support positions and injury prevention initiatives. The new hospital trauma centers that are also part of the trauma system can play a critical role in injury prevention activities by coordinating and supporting injury prevention interventions in their communities.

Some hospitals have already instituted injury prevention interventions (e.g., policies that require staff to follow safe sleep recommendations with infants and ensure that newborns leave hospitals in appropriate safety seats). The establishment of trauma centers would allow hospitals to expand their roles in injury prevention within their organizations and the community.

Recommended Next Steps

- Secure core IPCS positions under the Trauma System Special Fund.
- Build professional capacity of Neighbor Island community partners to coordinate community-based injury prevention interventions through conference trainings and distance-based learning.
- Implement county level injury prevention interventions in coordination with trauma center staff and community stakeholders.

Recommendation 2: Serve as a clearinghouse for data, and incorporate other injury data sources to strengthen analyses and further injury prevention efforts

The Safe States Alliance recommends injury prevention programs maintain a strong data component with access to major data sources that define the injury problem (2003). Complete, accurate, and timely data are critical to informing public policies, guiding the selection, design and evaluation of interventions, and directing use of limited resources.

Hawai‘i needs to build on its impressive achievements by maintaining and further enhancing the collection and distribution of injury prevention data.

Recommended Next Steps

- Maintain and increase use of standards for e-coding by emergency departments and hospitals, and evaluate the completeness of collected data.
- Ensure continued access to currently used databases.
- Expand access to data sources.
  - Work with the Medical Examiner's Office to institutionalize access to autopsy records.
  - Access and use data from the statewide Trauma Registry.
- Improve accessibility of reliable and timely injury data to partners.
  - Provide partners Hawai‘i Emergency Medical Services Information System (HEMSIS) data about risk factors such as seat belt use, alcohol and drug use, and helmet use.
  - Utilize internet to increase accessibility of data to partners, decision makers, and the public.
  - Improve ability to respond to data requests quickly and effectively.

Recommendation 3: Provide training and technical assistance to increase and enhance knowledge and skills among injury prevention practitioners and partners

In order to effectively address injuries in Hawai'i, it will be essential to build injury prevention core competencies among practitioners in related fields. Core competencies include the ability to (Runyan & Stephens Stidham, 2009):

- Describe injury and violence as a public health problem
- Access, interpret, use, and present injury and violence data
- Design, implement, and evaluate injury prevention activities
- Disseminate injury prevention information to the community and key policy makers
- Affect change through policy and education

Recommended Next Steps

- Conduct a needs assessment to understand the training needs of professionals and partners, including practitioners and organizations working in related fields (e.g., first responders) or specific content areas (e.g., water safety), as well as interested members of the community. At the same time, determine where and how the different groups prefer to receive training.
- Based on results from the assessment, develop trainings to strengthen injury prevention and public health core competencies.
- Explore opportunities to provide these trainings in settings that maximize available resources.
  - Use existing venues (e.g., IPAC meetings, injury specific and public health conferences).
  - Provide annual training to trauma center staff.
- Identify and prioritize professionals and organizations that can have the greatest impact in reducing injuries, and develop tailored trainings that address their needs and interests.
- Provide partners specific training in applying evidence-based practices to help integrate injury prevention into their work.
- Support and pursue resources for professional development of injury prevention staff.

Recommendation 4: Cultivate awareness among decision makers and the public to elevate injury and violence as a major public health problem in Hawai'i

Injury prevention researchers, practitioners and advocates understand that injuries are a leading cause of death and disability that can be prevented. Many decision makers and members of the public, however, continue to think of injuries as accidents that are unavoidable.

It is imperative to communicate the personal and financial costs of injury as well as the potential solutions in order to inform policies, secure resources, change behaviors, and affect injury rates in Hawai'i. Injury prevention advocates need to work with partners and the media to reach target audiences with carefully developed and tested messages.

Recommended Next Steps

- Develop, test and disseminate injury prevention messages that are tailored to specific, prioritized audiences.
  - Disseminate messages developed by IPCS and the Fall Prevention Consortium (with training and support from CDC's Injury Center Communications Initiative). Identify and use communication channels most frequently accessed and trusted by target audiences.
  - Apply this message development process to other injury areas to create, test and disseminate additional messages.
- Develop materials that educate specific audiences, such as policy makers or employers, about priority injury areas.
- Seek opportunities to communicate with the media about current issues, using relevant data and consistent prevention messages.
- Facilitate partners' ability to effectively communicate about injury by regularly providing current data and information about evidence-based prevention strategies.
  - Use existing communication channels such as IPAC meetings and newsletters.

Recommendation 5: Inform injury prevention policy at all levels

Evidence-based policies implemented at national, state, local, and agency or organizational levels can dramatically reduce the burden of injury. State legislation that requires children to ride in safety seats, local ordinances that require pool fencing, and health care provider policies that recommend fall risk assessments for all older clients are examples of policies that can help reduce injuries.

Recommended Next Steps

- With leadership from IPAC and staff support from IPCS, develop and implement a comprehensive plan (with measurable goals and objectives) to work with partners and inform injury prevention policy at multiple levels.
- Mobilize coalitions and networks to build a support base and advocate for evidence-based policy solutions.
- Continue to identify, track, and share information about annual legislative injury prevention priorities.

Recommendation 6: Increase opportunities for collaborative injury prevention efforts in all priority injury prevention areas

Working collaboratively with partners from diverse disciplines, organizations, and perspectives inside and outside of state government is critical to success. To optimize the best use of limited resources, injury prevention partners need to coordinate efforts and address critical concerns without duplicating their efforts.

Partnerships have been essential to the work of IPCS, as evidenced throughout this report. They are critical to directing priorities, communicating messages, and sustaining programs.

Recommended Next Steps

- Work with existing and new partners to implement recommendations outlined in this report.
- Invite new partners to join current injury prevention taskforces and committees:
  - Injury Prevention Advisory Committee
  - Keiki Injury Prevention Coalition
  - Prevent Suicide Hawai‘i Task Force
  - Fall Prevention Consortium

Drowning Prevention

Background and Accomplishments

Drowning prevention has been a priority issue for the Hawai'i State Department of Health, Injury Prevention and Control Section (IPCS) since 1991. Hawai'i has accomplished much in the area of drowning prevention with the benefits of highly engaged experts, exceptional ocean safety officers across the state, active involvement from the visitor industry, and strong collaborative partnerships in the community.

- The Hawai'i Beach Safety website (www.hawaiibeachsafety.org) was developed in 2006 and provides beach ratings based on comprehensive risk assessments that were conducted on all guarded and unguarded beaches in the state. The site also features safety information about hazards (e.g., rip currents, dangerous shore breaks), prevention tips, surf reports, special alerts (e.g., box jelly fish notices), and warnings. Information on the website is updated several times each day. Partners on this project include the Ocean Safety and Lifeguard Services Division at the City and County of Honolulu, the Hawaiian Lifeguard Association, ocean safety and lifeguard partners on neighbor islands, the University of Hawai'i School of Ocean and Earth Science and Technology, the Hawai'i Tourism Authority, and the Hawai'i State Department of Health.
- In collaboration with the Hawai'i Association of Independent Schools, IPCS co-produced the video, "Be Ocean Minded" about the Junior Lifeguard Program. Lifeguards from all islands were interviewed to talk about ocean safety, prevention tips, and the value of the Junior Lifeguard Program. The county-based Junior Lifeguard Program runs during the summer and trains teenagers (13-17 years of age) in ocean skills, beach condition assessment, and lifesaving techniques. The video serves as a recruitment tool for the program and copies have been distributed across the state.
- In 2009, IPCS surveyed over 500 beach goers on O'ahu, both residents and visitors, to assess the impact of four types of beach warning signs: strong current, high surf, dangerous shore break, and waves breaking on ledge. Results showed that about half of those surveyed saw the signs, and among those, 66% thought the signs would influence their behavior.
- IPCS worked with the Swimming Pool Association of Hawai'i in 2009 to conduct a survey of 1,300 residential pool owners on O'ahu. The impetus for this project was to inform pool owners about a federal law designed to protect children against entrapment from the suction of pool drains and pumps. This 2009 law, the Virginia Graeme-Baker Pool and Spa Safety Act, is mandatory for commercial pools but not for residential pools. The survey asked about drain covers and pumps as well as fencing, safety latches on gates, whether there were kids in their home and if so, whether the kids participated in swimming lessons. Pool owners also were provided with pool safety and entrapment prevention information. A follow-up survey determined what safety changes pool owners made. During the survey, 163 swimming pools or spas were identified as having potentially dangerous equipment; 65 pool owners voluntarily upgraded their pumps and drains.

Recommendations

In 2010, IPCS led a statewide needs assessment that included a review of best practices for drowning prevention, in-depth telephone interviews with ten key stakeholders (i.e., representatives of organizations involved in prevention efforts, and potential partners), and two strategic planning sessions with partners from the community and the visitor industry. IPCS used the information gathered through this process to develop and prioritize the following recommendations.

Recommendation 1: Establish a task force to develop a statewide approach to drowning prevention

Each week in Hawai'i, at least one person fatally drowns. As an island state, it is essential that we create a safer environment and provide residents and tourists with information they need to have a safe and enjoyable experience in and around the water. A statewide task force for drowning prevention would bring key partners together to coordinate drowning prevention efforts, and provide guidance to IPCS moving forward. Partners in the community, including the visitor industry should be broadly represented on the task force, and efforts should be made to engage educators.

Recommended Next Steps

- Work with existing groups, including the Hawai'i Department of Land and Natural Resources and the Hawaiian Lifeguard Association to create a task force, build membership and define a clear mission.

Recommendation 2: Implement a statewide educational campaign to increase ocean safety awareness among residents and visitors

The majority of drownings in Hawai'i are ocean-related, and half of those fatalities are among tourists. Clear and effective messages for residents and visitors of Hawai'i need to be developed, tested, implemented, and evaluated. Messages may be communicated through existing communication channels, including the Hawai'i Beach Safety website and the Hawai'i Tourism Authority's Travel Smart Hawai'i website. Efforts should be made to engage partners throughout the message development and dissemination process.

PARTNERS

American Red Cross - Hawai'i State Chapter

City and County of Honolulu Department of Parks and Recreation

City and County of Honolulu Ocean Safety and Lifeguard Services Division

County of Hawai'i Department of Research and Development

County of Hawai'i Fire Department

County of Hawai'i Ocean Safety

County of Kaua'i Ocean Safety

County of Kaua'i Office of Economic Development

County of Maui Office of Economic Development

County of Maui Aquatics Division

Hale Koa Hotel

Hawaiian Lifeguard Association

Hawai'i State Department of Land and Natural Resources

Hawai'i Tourism Authority

Injury Prevention Advisory Committee

Kama'aina Kids

Kaua'i Lifeguard Association

Kaua'i Visitor Bureau

O'ahu YMCA

Resorts and adventure tourism companies

Swimming Pool Association of Hawai'i

University of Hawai'i School of Ocean and Earth Science and Technology

YMCA of Honolulu

Attention also must be paid to visitors' sources of information. Hawai'i guidebooks are of particular concern as they often direct visitors who are less familiar with ocean swimming and conditions to unguarded locations without explaining the potential dangers.

Recommended Next Steps

- Solicit partner input to develop and test clear, consistent prevention messages for visitors and residents.
- Engage partners in message dissemination and evaluation.
- Educate writers and publishers of guidebooks about drownings in Hawai'i and encourage them to include accurate information in their publications about safety conditions.

Recommendation 3: Evaluate current drowning prevention efforts and disseminate information about best practices

Drowning prevention is a complex public health concern. There are numerous factors including the age and ability of the individual, the body of water (e.g., swimming pool, ocean, stream), and current conditions (Quan, et al, 2007). More information is needed about what works to prevent drowning in Hawai'i.

Currently, there aren't many evidence-based strategies or best practices to prevent drowning. There are several promising practices that have strong behavioral elements, and very few environmental or legislative interventions. More research is needed to evaluate the effectiveness of interventions and education materials currently in use (Quan, et al, 2007). Results from such research would help solicit support from partners and policy makers, and inform decisions about resource allocation.

Equally important to completing the research will be disseminating information about best and promising practices to key audiences in the state as well as the broader drowning prevention community.

Recommended Next Steps

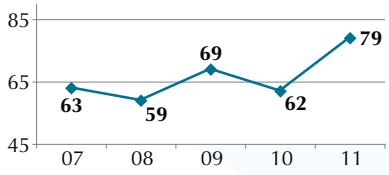
- Evaluate the Hawai'i Beach Safety website, www.hawaiibeachsafety.org, to determine effectiveness and use of the site.
- Provide data support and technical assistance to practitioners that need assistance evaluating their own drowning prevention programs.
- Evaluate effectiveness of safety efforts, including the provision of rescue tubes, at unguarded beaches across the state.
- Disseminate information about effective safety efforts in Hawai'i through partner organizations.

Injury Data for Drownings (residents and non-residents)

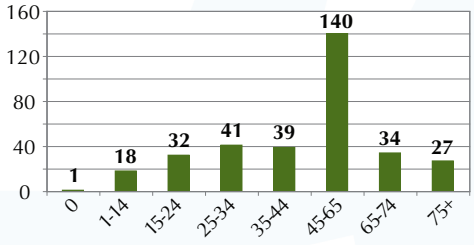
Fatal injuries

There was no clear trend in the annual number of drownings, although the 79 deaths in 2011 was the highest total since at least 1993. Most of the high total in 2011 was due to drownings on Honolulu and Maui counties. About half (53%) of the victims were Hawai'i residents, 36% from the U.S. mainland, and 12% from foreign countries. The ages of the victims were widely distributed, although only 8% were under 18 years of age. Almost all (83%) were males. About half (47%) of all the victims drowned on O'ahu . If only drownings among Hawai'i residents were considered, O'ahu residents had the lowest rates, significantly lower than rates for Neighbor Island residents as a whole. If non-residents are also included, the highest (unadjusted) rate was computed for Kaua'i, approximately twice as high as rates for Hawai'i County and more than 3 times the rates for Honolulu County (the island of O'ahu).

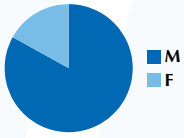
Trend: no trend
Total: 332
Ave: 66/year



Age groups:
45-64y = 42%



Gender:
83% M
17% F



County totals and 5-year rate (deaths/100,000):

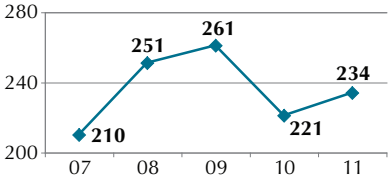
COUNTY	NUM.	RATE
Hawaii	39	19.0
Honolulu	101	10.7
Kauai	13	18.8
Maui	22	14.6

Most (78%, or 259) of the victims drowned in the ocean or saltwater environments, almost all of whom (96%) were 18 years or older. Unintentional immersions led to 13% of these drownings, including 31 victims who fell in or were swept into the ocean. Other common activities were swimming (29% of victims), snorkeling (22%), and free diving (9%). According to autopsy records, intrinsic or personal factors contributed to over half (61%) of the saltwater drownings in Honolulu County from 2007 to 2010. The most common intrinsic factor was circulatory diseases, present among 46% of the victims of all ages, and 69% of those aged 50 years and older. Only 13% of the victims tested positive for alcohol, and only 7% had BAC (blood alcohol content) levels of 0.08% or greater. Illicit drug use was considered a contribution to 12% of the drownings. Apart from ocean drownings, there were 36 drownings in swimming pools, 21 in rivers and streams, and 12 in bathtubs. Only 3 (8%) of the 36 victims who drowned in swimming pools were under 5 years of age, as victim age was widely distributed in this environment.

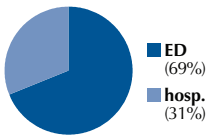
Nonfatal injuries (near drownings)

There was no clear trend in the annual number of near drownings, which averaged 235 per year. Hawai'i residents comprised a slight majority (55%) of all patients treated for near drownings, but only 41% of those who were hospitalized. ED (emergency department) patients were significantly younger on average than those who were hospitalized (31 vs. 40 years of age), with more than half (56%) in the 15 to 44 year age group. Among Hawai'i residents, county-specific rate estimates were generally comparable except for Hawai'i and Maui county residents.

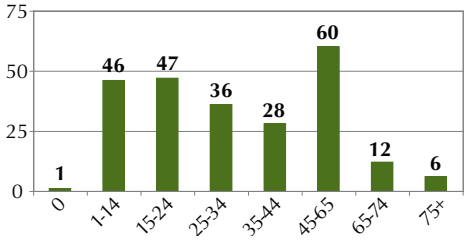
Trend: no trend
Ave: 235/year



Treatment:
163 ED
73 hosp.



Age groups:
1-24y = 39%



Hawai'i residents only:
County totals, annual number and rate (/100,000):

COUNTY	NUM.	RATE
Hawaii	23	12.5
Honolulu	88	9.6
Kauai	10	16.4
Maui	9	6.0

Hospitalizations were of a relatively short number of days (4.1, on average), but because each hospitalization incurred over $28,000 in charges, they comprised most (91%) of the total $2.3 million in annual medical charges related to drowning. Swimming (40%) and "surfing, windsurfing and boogie boarding" (32%) were the most common activities for the patients overall, although swimming was a more likely cause among non-residents (45%), while the latter activities were more common among residents (39%).

EMS data

Almost all (94%) of the incidents EMS responded to occurred during day time hours, including 80% between 9:31 a.m. and 5:29 p.m. More than half (59%) of the patients were Hawai'i residents. About 43% of the near drownings occurred in bodies of water, which could include both freshwater and saltwater environments. About one-third (30%) were in patient residences (10%), public buildings (12%), hotels (5%), and health care facilities (3%). Most (77%) of the patients were either transported in "serious" (46%) or "critical" (32%) condition, with no significant differences in the distribution of patient condition between residents and non-residents. Probable alcohol use was noted for only 4% of the patients. Near drownings that occurred during night time hours were significantly more likely to involve alcohol consumption than day time incidents, however (21% vs. 3%).

Hawai'i Trauma Registry (toxicology data)

Only 8% of the adult-aged (18 years and older) Hawai'i Trauma Registry near drowning patients were positive for alcohol, and only 9% tested positive for illicit drugs, although there was no toxicological testing for about two-thirds of the patients. Substance use was somewhat higher among resident patients, although this comparison is limited by the small sample sizes and the lack of testing.

Background and Accomplishments

The Hawai'i State Department of Health, Injury Prevention and Control Section (IPCS) has been working with partners in the community to prevent falls among older adults for nearly a decade.

- In 2003, IPCS supported the establishment of the Hawai'i Fall Prevention Consortium which provides a forum for information sharing, collaboration on fall prevention activities, and promotion of best practices for reducing falls among older adults. Members represent government agencies, professional associations, non-profit organizations, hospitals, care facilities, and senior organizations.
- Statewide conferences on fall prevention, held in 2005 and 2007, featured nationally recognized leaders in the field.
- In 2009, a Tai Chi for Health intervention was successfully piloted at Pohai Nani Care Facility. IPCS sponsored a similar intervention at Leahi Hospital in 2011.
- Educational materials were developed and distributed to raise awareness about fall prevention and fall prevention information, including a fall prevention directory of services and resources, was added to the state injury prevention website www.nogethurt.hawaii.gov.
- In partnership with the Fall Prevention Consortium, IPCS facilitated fall prevention screening for balance by physical and occupational therapists and medication reviews by pharmacists statewide as part of annual fall prevention awareness activities.
- The State Executive Office on Aging and county Area Agencies on Aging used data collected by IPCS to inform their 2011-2015 State and Area Plans on Aging.
- In 2011, the Executive Office on Aging and IPCS partnered to establish the Hawai'i State Fall Prevention Task Force. This short-term, volunteer Task Force comprised of key stakeholders is developing a comprehensive statewide approach to fall prevention by December 2012 that will address recommendations in this report.
- The Centers for Disease Control and Prevention (CDC) selected IPCS as one of three states to participate in an injury prevention message development and framing initiative. In 2010, IPCS, members of the Fall Prevention Consortium, and other community partners engaged in training to develop a coordinated communication strategy for fall prevention. Participants developed messages for independent older adults that IPCS tested, and the Fall Prevention Consortium is coordinating final revisions and dissemination.

Recommendations

In 2010, a statewide needs assessment was conducted that included a literature review, an online survey of more than 200 fall prevention professionals and community members, and follow-up telephone interviews with 58 key informants. IPCS, together with the Fall Prevention Consortium and other partners, used the results from this needs assessment as the basis for the following recommendations.

Recommendation 1: Raise awareness about fall prevention among older adults, caregivers, and providers

Enhance awareness among the public, older adults, caregivers, and providers that falls can be prevented and promote adoption of four key prevention behaviors:

- Beginning a regular exercise program
- Having one's health care provider review medicines
- Having one's vision checked
- Making one's home safer

The scientific literature and the June 2010 survey of key informants in Hawai'i confirmed that many older adults are unaware of their increased risk of falling or the simple steps they can take to reduce their risk (World Health Organization (WHO), 2007).

Recommended Next Steps

- Disseminate previously developed and tested messages for older adults.
- Develop and test additional clear, audience-specific messages for care givers, pharmacists, and physicians.
- Identify and use appropriate communication channels to reach key audiences.
- Distribute messages through community partners, including Fall Prevention Consortium members.
- Develop a packet of fall prevention educational materials to be distributed through partners.

PARTNERS

AARP Hawai'i

Catholic Charities of Hawai'i

Child and Family Service Gerontology Program

City and County of Honolulu Area Agency on Aging

Comforting Hands Hawai'i

Executive Office on Aging

Fall Prevention Consortium

Hawai'i Community Pharmacists Association

Hawai'i County Fire Department

Hawai'i County Office on Aging

Hawai'i Optometric Association

Hilo Medical Center

HMSA Health Ways Corporation

Injury Prevention Advisory Committee

Kaua'i Agency on Elder Affairs

Kaiser Permanente

Kapi'olani Community College Kupuna Education Center

Kuakini Health Systems

Kupuna Caucus

Maui County Office on Aging

Ohana Pacific Rehab, Inc.

Project Dana

Rehabilitation Hospital of the Pacific

Straub Medical Center, Physical Therapy Division

Tai Chi for Health Institute

The Queen's Medical Center

United States Veterans Administration

University of Hawai'i Center on Aging

University of Hawai'i John A. Burns School of Medicine

University of Hawai'i Office of Public Health Studies

Recommendation 2: Increase availability and accessibility of fall prevention programs statewide

Fall prevention programs can help older adults:

- Assess balance and strength
- Exercise to increase their strength and balance
- Get their medications reviewed and adjusted at least annually
- Assess and modify their homes to reduce fall hazards
- Check for and correct vision impairments

The scientific literature has shown these activities can reduce the risk of falling, and there are various fall prevention programs available in the state (WHO, 2007). These programs are not, however, available across all islands and in all communities. In addition, these services are not always covered by insurance; for example, Medicare does not pay for eye glasses.

Recommended Next Steps

- Expand exercise programs tailored to increase balance and strength such as Enhanced Fitness, Tai Chi, and No Fear of Falling.
- Increase the availability and use of successful home safety assessment programs.
- Develop strategies to coordinate services among venues where older adults gather, such as community clinics, senior centers, meal sites, senior housing, assisted living facilities, care homes, day health centers, shopping centers, schools, and churches.
- Develop and disseminate an updated fall prevention resource guide to supplement current materials produced by the Area Agencies on Aging and the Adult Disability Resources Centers (ADRC).
- Explore resources to print translations of educational materials. Languages might include Ilocano, Tagalog, Mandarin Chinese, and Korean.

Recommendation 3: Engage professionals and community members in fall prevention activities

Develop fall prevention activities that engage:

- Public workers (e.g., paramedics, fire fighters, public health nurses, Area Agency on Aging staff)
- Health care providers, elder care providers, ADRC staff members, program trainers (e.g., physicians, nurses, social workers, physical and occupational therapists, pharmacists)
- Coalitions (e.g., Fall Prevention Consortium, the Hawai‘i Healthy Aging Program)
- Non-profit organizations (e.g., AARP, YMCA)
- Interested individuals (e.g., retired workers, volunteers)

Many individuals and organizations must join together to prevent falls in Hawai‘i. Already, paramedics and some pharmacists provide medication reviews, and many hospitals and rehabilitation programs assist with home assessments and modifications. But more individuals and organizations can, and should be enlisted in the cause.

Recommended Next Steps

Develop mutually beneficial partnerships with groups to facilitate fall prevention activities, for example:

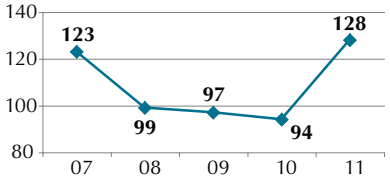
- Encourage community partners, such as fire departments and EMS providers to assist with home assessments.
- Enable more pharmacists and other qualified professionals to provide free annual medication reviews.
- Encourage medical professionals to provide fall risk assessments.
- Train care home providers to lead exercise programs for their residents.
- Engage and support students in professional schools by:
  - Training occupational and physical therapy assistants to certify eldercare providers in senior-friendly exercise programs.
  - Enlisting medical and pharmacy students to assist with medication reviews.
  - Training nurses, certified nurse aid students, and certified medical assistants in home assessment.
- Work with partners to develop and implement a training program and tool kit to educate all health care providers about the special needs of older adults and fall prevention strategies.
- Engage new and current members of the Fall Prevention Consortium, including representatives from the Aging Network, to achieve identified priorities.

Injury Data for Falls

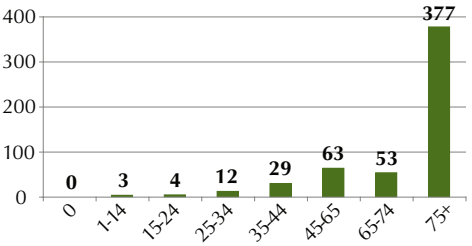
Fatal injuries

Falls were the most common type of fatal unintentional injury in the state, with the 541 deaths accounting for 25% of the total. More than three-quarters (79%) of the victims were aged 65 years or older, and the risk of fatal falls increased dramatically across the senior age range. Males comprised the majority (78%) of victims under 65 years of age, while gender was more equally distributed for the senior-aged victims. Honolulu County residentscomprised most of the victims of all ages (77%) and those who were 65 years or older (81%). The fall fatality rate estimate for senior-aged residents of Honolulu County was significantly higher than the rates for residents of Kaua'i or Maui counties, and 45% higher than for Neighbor Island residents considered as a whole.

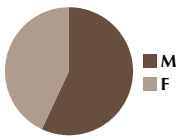
Trend: no trend
Total: 541
Ave: 108/year



Age groups:
65y or older = 79%



Gender:
57% M
43% F



County totals and 5-year rate (deaths/100,000):

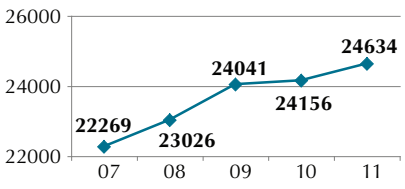
COUNTY	NUM.	RATE
Hawaii	57	29.9
Honolulu	423	35.9
Kauai	18	22.2
Maui	43	27.5

Death certificates provided little information on the causes of falls, as most were coded as "falls on the same level" with no further description (48%), or "unspecified" causes (32%). Falls from stairs or steps were the most specifically coded cause, but comprised only 4% of the total. More than half (61%) of the falls occurred at the residence of the victim, including 68% of the senior-aged victims.

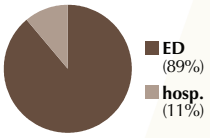
Nonfatal injuries

Falls were the leading cause of nonfatal injuries among Hawai'i residents, with nearly 21,000 ED (emergency department) visits and over 2,700 hospitalizations each year. The annual number of injuries generally increased. Children aged 1 to 14 years comprised 27% of all patients, but about two-thirds (68%) of those who were hospitalized were 65 years or older. Gender was equally distributed among patients treated in EDs, but females comprised 59% of the patients that were hospitalized.

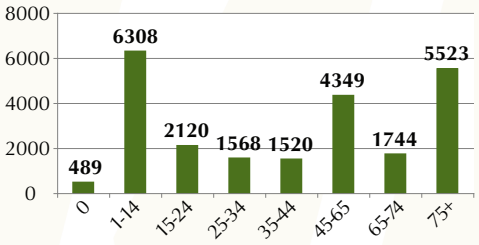
Trend: increasing trend
Ave: 23,625/year



Treatment:
20,920 ED
2,705 hosp.



Age groups:
1-14y = 27%



County totals, annual number and rate (/100,000):

COUNTY	NUM.	RATE
Hawaii	4289	2390.8
Honolulu	15209	1584.7
Kauai	1750	2635.6
Maui	2377	1627.8

Residents of Hawai'i and Kaua'i counties had significantly higher rates of nonfatal injuries from falls than residents of Honolulu and Maui counties. The residents of Honolulu County had the lowest rates of hospitalizations. Among the more specifically coded injuries, the most common causes were falls from stairs, steps and escalators (5.3% of the total), beds (3.7%), skateboards (3.5%), and chairs, playground equipment, and ladders (about 2% for each). At least half (53%) of the falls that caused hospitalizations in seniors occurred in home environments. This proportion increases to 84% if only records with specific information on location are considered. The most common activity related to the falls was "walking, marching and hiking", accounting for 30% of the total. Skateboarding, running, tackle football, and bathing and showering were also prominent activities. Hospitalizations averaged nearly 1 week in duration, resulted in over $31,000 in medical charges, and accounted for 72% ($84 million) of the total annual charges of $116.6 million related to falls. Fractures were present in nearly three-fourths (74%) of the hospitalized patients, including 29% with hip fractures.

EMS data

More than half (57%) of the EMS-attended falls occurred in the home or residence of the patient, and this proportion was significantly higher among the seniors (71%) compared to younger aged patients (41%). More than half (54%) of the patients were 65 years or older, including 22% who were 85 years or older. Senior-aged patients had worse dispositions, as they were more likely to be transported in serious condition (49%, compared to 40% of younger age patients) and less likely to be released at the scene (12% vs 19%, respectively). Probable alcohol use was noted 8% of the patients, and male patients were more than twice as likely to have used alcohol compared to females (12% vs. 5%).

Hawai'i Trauma Registry (toxicology data)

Only 11% of the adult-aged (18 years and older) Hawai'i Trauma Registry resident patients who were injured by falls were positive for alcohol, with 4 times higher use among patients in the 18 to 64 year age group (19%), compared to senior-aged patients (5%). Fifteen percent of the patients tested positive for illicit drugs, most commonly narcotics (11%). Considered together, about one-quarter (24%, or 587) of the patients tested positive for either alcohol or drugs, although that proportion was much lower among the senior-aged patients (13%), compared to younger patients (36%).

Background and Accomplishments

The Hawai'i State Department of Health, Injury Prevention and Control Section (IPCS) has collaborated with partners to address different types of poisonings among different populations.

- IPCS strongly supports the Keiki Injury Prevention Coalition (KIPC) in their ongoing efforts to prevent poisoning.
  - In 2009, KIPC received a grant from the Hawai'i Department of Agriculture related to the recognition and management of pesticide-related injuries. KIPC has conducted poisoning prevention education and outreach activities for the public to increase awareness of household pesticide exposures and reduce exposures in and around households.
  - KIPC works to raise public awareness about, and increase use of, the 24 hour Hawai'i poison control hotline for information about potential poisonings and medications.
- In 2010, IPCS began serving as a clearinghouse to disseminate poisoning prevention materials to community partners. Materials disseminated to pediatricians, preschools, hospitals, and health care clinics on all islands include magnets and stickers to promote the Hawai'i poison control hotline, poisoning prevention information fact sheets, "No Get Hurt" poisoning prevention posters, and information on the correct use of pesticides from the Department of Agriculture.
  - As part of the "No Get Hurt" campaign, IPCS printed poisoning prevention posters in 2010 for use by the Department of Health Women Infant and Children (WIC) Services Branch and other community partners.
- IPCS collaborated with a community partner to analyze data about poisonings from opioids in Honolulu County between 2004-2008. The results of this analysis showed the most common way to access opiates was through a personal prescription (46% of the victims). Only a minority of victims accessed opiates through prescriptions written for other people (4%), or purchased drugs illicitly (4%). However, access to opiates was not known for a large proportion (41%) of the victims, limiting the reliability of this data source.
- In 1992, the Department of Public Safety (DPS) established Hawai'i's Prescription Drug Monitoring System (PDM) - one of the best practices for determining misuse and abuse of controlled substances. In 2012, improvements were made to the program to ensure the PDM database is effectively used and maintained. In addition to maintaining the PDM system, DPS is required to "carry out educational programs designed to prevent and determine misuse and abuse of controlled substances" (HRS 329-58).
- In 2011, IPCS began collaborating with state and community organizations working on STD/AIDS and substance abuse prevention in an effort to understand and address the increase in prescription drug overdoses.

Recommendations

While poisoning among children has decreased with interventions such as childproof caps, the past few years have revealed dramatic increases in prescription drug overdoses (CDC, 2011b). IPCS analyzed trend data for poisoning fatalities and injuries, including prescription drug overdoses, and conducted a comprehensive review of current best practices. Results from this analysis formed the basis for the recommendations below.

IPCS first presented results of the analysis to the Department of Health, STD/AIDS Prevention Branch and the CHOW Project (The Community Health Outreach Work to Prevent AIDS Project), which were subsequently shared with the Hawai'i Advisory Commission on Drug Abuse and Controlled Substances (HACDACS). As set forth by the Legislature, HACDACS is the primary advisory body to the Departments of Public Safety and Health and to the Legislature, and an appropriate partner to support in developing policy changes for the prevention of prescription drug overdoses.

Partners from public and private sectors (e.g., public safety, insurance, medicine, pharmacology, substance abuse treatment, law enforcement) can all help reduce poisonings, especially prescription drug overdoses, in Hawai'i.

Recommendation 1: Enhance use of data resources to understand the problem of prescription drug overdoses in Hawai'i and facilitate prevention efforts

To better address the issue of prescription drug overdoses, more data and analyses are necessary. Death certificates describe an overall increasing trend but provide limited data on the type of drugs causing deaths. Autopsy data provides more information about deaths due to prescription drugs, including the specific substances involved and whether victims accessed drugs through legal or illegal means, although information about access is missing from a significant proportion of autopsy records. Therefore, linking autopsy data with the PDM database would help describe access to the specific substances involved in overdoses and provide a clearer picture of drug overdose fatalities in Hawai'i.

Additional data sources such as survey-based data and fatality reviews that go beyond information gathered for autopsy reviews, would add to the body of knowledge about prescription drug use and practices, and help identify risk factors and effective prevention measures.

Recommended Next Steps

- Determine ability to gain access to the Department of Public Safety's PDM database and other state agencies' data related to drug poisoning (Medicaid, workers' compensation data).
- Link death certificate and autopsy records with the PDM database to learn more about decedents' access to drugs.
- Use additional data sources to describe general drug use and poisoning in the population and indicate areas for further research (i.e., Hawai'i Health Information Center, Trauma Registry, Poison Center Data, Behavioral Risk Factor System Survey, Youth Risk Behavior Survey).

- Provide comprehensive data and injury prevention expertise to support partnerships and strategies for addressing prescription drug overdoses. Key partners include:
  - The Hawai'i Advisory Commission on Drug Abuse and Controlled Substances
  - Hawai'i State Department of Health Alcohol and Drug Abuse Division
  - Hawai'i State Department of Health STD/AIDs Branch
  - The CHOW Project (The Community Health Outreach Work to Prevent AIDS Project)
  - Hawai'i Substance Abuse Coalition
  - Hawai'i State Department of Public Safety
  - Hospitals and trauma centers
  - First responders
  - County police departments
  - Physicians and pharmacists
  - Insurance companies
  - Community organizations

Recommendation 2: Identify and support enactment of policies and practices that reduce both inappropriate and illegal prescribing, and evaluate their effectiveness

Promising policies and practices target the prescribing practices of health care providers to help prevent prescription drug abuses and overdoses while allowing safe and effective pain management. These include prescription drug monitoring programs, patient review and restriction programs, health care provider accountability, laws and education to prevent prescription drug abuse and diversion, and better access to substance abuse treatment, including risk reduction strategies and education. Increasing capacity of pharmacists and other prescribers to educate patients about overdose can also leverage prevention efforts. These interventions need to be evaluated locally to determine their effectiveness in reducing prescription drug overdose deaths (CDC, 2011b).

States play key roles in regulating the use of prescription drugs and the practices of prescribers and pharmacists, and in financing and regulating health care for people with Medicaid - a group at greater risk for overdose (CDC, 2011a).

State agencies need to work in partnership with organizations in the private sector from health care and related fields to bring about changes in organizational practices. Implementing screening and brief intervention and referral and treatment protocols in state-funded trauma centers, and adding screening for potential misuse and abuse of prescription drugs can serve as a model practice for other hospitals and health care systems to adopt. As important potential users of the PDM database, emergency physicians are one of the key partners in prescription drug overdose prevention efforts.

Recommended Next Steps

- Collaborate with the Department of Public Safety to support and evaluate use of the Hawai'i Prescription Drug Monitoring System.
- Work with organizations such as the American College of Emergency Physicians, the Hawai'i Medical Association, Hawai'i pharmacy associations, health care systems, and legislators to develop and enact policies that support prescribing practices to reduce prescription drug misuse and abuse.
- Collaborate with state-funded trauma centers across the state to adapt screening and brief intervention practices that identify potential prescription misuse and abuse problems. Develop policies to support the intervention and share them with other health care settings as a model for implementing similar interventions (Ohio Injury Prevention Partnership, 2010).
- Collaborate with the Hawai'i Board of Pharmacy, the Hawai'i Pharmacists Association, and the Hawai'i Community Pharmacists Association to identify and promote educational strategies for pharmacists to help regulate the use of prescription drugs.
- Partner with insurance companies, and physician and pharmacy associations to educate the public on the potential misuse of drugs received from friends and family.
- Support risk reduction training for first responders, health care providers, and other service providers to reduce the risk of death from opioid overdoses.

Recommendation 3: Support primary poisoning prevention education and maintenance of the poison information hotline

Poisoning prevention education and the poison information hotline encourage appropriate actions that can reduce poisoning injuries, fatalities, and their associated hospital and health care costs. In addition to responding to calls for diagnostic or treatment recommendations on poison exposure for which callers would otherwise go to the emergency department, health care providers rely on the hotline for toxicology expertise in handling severe overdoses. The poison hotline also identifies and alerts the public to poisoning trends, and provides a drug identification service to callers that reduces drug errors from improper use of medications.

Recommended Next Steps

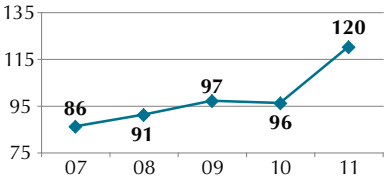
- Continue collaborating with KIPC to provide educational materials and promote the poison information hotline.
- Use data collected from the poison information hotline to identify trends and problem areas and inform prevention strategies.
- Help secure continued funding for the poison information hotline.

Injury Data for Poisonings

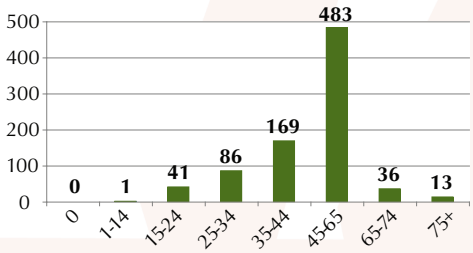
Fatal injuries

There was an increasing trend in the annual number of unintentional poisonings. (There was no consistent trend in the number of poisonings of undetermined intent over this period.) Victim age was narrowly distributed, as 58% were in the 45 to 64 year age range. Males comprised 78% of the victims. Most (82%) of the victims were poisoned on O'ahu, and the highest fatality rates were computed for Honolulu County residents. Inclusion of poisonings of undetermined intent resulted in significantly lower rates among O'ahu residents compared to Hawai'i or Maui county residents, so these comparisons are unreliable. Drugs caused almost all (93%) of the poisonings, including 32% from "narcotics and hallucinogens" and 34% from "sedative-hypnotic and psychotropic drugs".

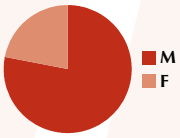
Trend: increasing trend
Total: 490
Ave: 98/year



Age groups:
45 to 64 = 58%



Gender:
78% M
22% F



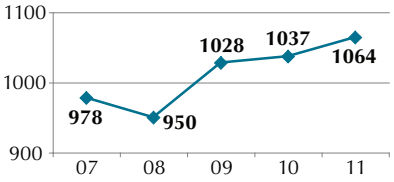
County totals and 5-year rate (deaths/100,000):

COUNTY	NUM.	RATE
Hawaii	37	21.8
Honolulu	400	43.4
Kauai	16	22.3
Maui	37	24.4

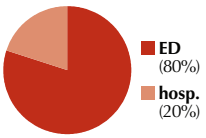
Nonfatal injuries

There was an increasing trend in the number of nonfatal poisonings, but this was evident only for ED (emergency department) visits among Honolulu and Maui county residents. Gender was nearly equally distributed with 53% male patients. Patient age was broadly distributed, although one-quarter (26%) were 1 to 14 years of age. Seniors comprised only 13% of all patients, but (23%) of those who were hospitalized. Rates of ED visits were highest by far for residents under 5 years of age, nearly 5 times higher than the rate for all other age groups. Residents of Honolulu and Maui counties had comparable injury rates, significantly lower than the rates for residents of Hawai'i and Kaua'i counties.

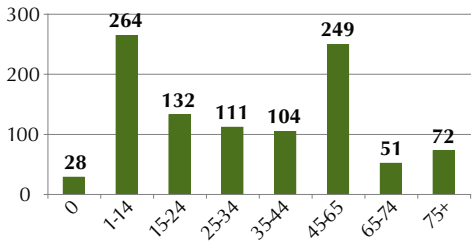
Trend: increasing trend
Ave: 1011/year



Treatment:
805 ED
207 hosp.



Age groups:
1-14y = 26%



County totals, annual number and rate (/100,000):

COUNTY	NUM.	RATE
Hawaii	193	109.7
Honolulu	643	69.4
Kauai	72	112.6
Maui	103	69.5

Patients were hospitalized for slightly over 3 days on average, with nearly $18,000 in medical charges related to poisoning. Most (76%) of the poisonings were caused by drugs or medicinal substances, including 92% of those that required hospitalization. Narcotics caused 21% of the hospitalizations, tranquilizers 13%, aromatic analgesics (which include acetaminophen, or Tylenol) 8%, and cardiovascular agents 8%.

Background and Accomplishments

The Injury Prevention and Control Section (IPCS) has led suicide prevention activities within the Hawai'i State Department of Health since 2005 with support from the Child and Adolescent Mental Health Division, the Adult Mental Health Division, and the Alcohol and Drug Abuse Division.

- The Prevent Suicide Hawai'i Task Force (PSHTF) has chapters in each county and includes more than 100 members representing a broad network of agencies and stakeholders. PSHTF provides guidance to IPCS related to suicide prevention programming and activities. PSHTF grew out of the Suicide Prevention Task Force that was initiated in 2000 by the Department of Health, Maternal and Child Health Branch.
- In 2006, IPCS secured funds for a permanent suicide prevention coordinator to lead and implement initiatives based on the National Strategy for Suicide Prevention and the Hawai'i State Plan for Suicide Prevention.
- With an established PSHTF and suicide prevention coordinator, suicide prevention gatekeeper trainings began to be offered statewide to representatives from health and human services, education, emergency services, faith-based organizations and the general public. Trainings included:
  - ASIST (Applied Suicide Intervention Skills Training) – a two-day intensive training program to help participants identify and assess the risk of individuals in crisis and provide early intervention and referral to reduce the risk.
  - safeTALK – a three hour suicide intervention training that prepares participants to identify persons with thoughts of suicide and connect them to suicide prevention first aid resources.
- In 2007, legislation was passed to support a youth prevention program with $100,000 annually. IPCS used these funds, in collaboration with PSHTF, to build a statewide network of public and community partnerships with task forces on each island, to build public awareness and to increase professional and community capacity for responding to individuals at risk for suicide through gatekeeper training.
- In 2008, the Substance Abuse and Mental Health Services Administration awarded IPCS funding through the Garrett Lee Smith grant. The 3-year federal award provided $500,000 annually to support continued implementation and evaluation of ASIST and safeTALK trainings and a pilot of the Signs of Suicide training for teachers and students. These gatekeeper trainings focused on youth, partnering with three agencies: Honolulu Police Department; Department of Education; Department of Health, Alcohol and Drug Abuse Division.
- In 2011, the *Sustainability Plan for Suicide Prevention Training in Hawai'i* was developed to address gatekeeper training needs for the future. The plan was built on previous efforts and community partnerships.

Recommendations

The following recommendations were informed by a needs assessment of 500 key stakeholders, including PSHTF members, ASIST trainers and other partners, and additional input was provided by PSHTF sub-committee chairs. IPCS, together with the PSHTF and other partners, agreed to continue expanding efforts highlighted in the *Hawai'i Injury Prevention Plan 2005-2010*. The national Suicide Prevention Resource Center supports these recommendations.

Recommendation 1: Enhance ongoing suicide prevention trainings for gatekeepers

A "gatekeeper" can be any individual who interacts with others at work, in schools, at play, at home, or in community settings (i.e., other than clinical settings). Gatekeepers trained in suicide prevention and intervention learn to:

- Recognize early signs of suicidal behavior
- Implement timely and effective intervention strategies
- Identify opportunities to reinforce protective factors
- Intervene in crisis situations
- Refer people to appropriate professionals, or "open the gate" to mental health services

Training gatekeepers is considered a best practice among suicide prevention professionals. Evaluation of ASIST trainings has described positive gains in trainees' self-rated capacity to identify, assess, and refer potentially suicidal people, both immediately after the ASIST training, and approximately one year after.

Recommended Next Steps

- Continue evaluation of gatekeeper training programs to determine which approaches are most effective across different settings.
- Continue providing culturally competent trainings to increase the number of gatekeepers in the community.
  - Specific attention should be paid to training gatekeepers that reach underserved populations, including youth, seniors, the homeless, those who are incarcerated, adults with mental health challenges, and individuals who are lesbian, gay, bisexual or transgendered.

PARTNERS

Chaminade University
CHOW Project
Coalition for a Drug-Free Hawai'i
Equality Hawai'i
Harm Reduction Hawai'i
Hawai'i National Guard
Hawai'i Pacific University
Hawai'i Police Department
Hawai'i State Department of Education
Hawai'i State Department of Health Adult Mental Health Division
Hawai'i State Department of Health Alcohol and Drug Abuse Division
Hawai'i State Department of Health Child and Adolescent Mental Health Division
Hawai'i Veterans' Administration
Hawai'i Youth Services Network
Honolulu Community College
Honolulu Police Department
Hawai'i SPEAR (Suicide Prevention Education Awareness Research)
Injury Prevention Advisory Committee
Kapi'olani Community College
Kapi'olani Medical Center
Kaua'i Police Department
Life Foundation
Life's Bridges Hawai'i
Maui Police Department
Mental Health America of Hawai'i
Prevent Suicide Hawai'i Task Force
Queen Liliuokalani Children's Center
Queen's Medical Center
Tripler Army Medical Center
United States Armed Services
University of Hawai'i, John A. Burns School of Medicine, Department of Psychiatry
University of Hawai'i, Social Science Research Institute

- Recommended participants include law enforcement officers, school personnel, medical first responders, clinicians, community members with access to persons at-risk for suicide, and health education students.

- Use the Sustainability Plan for Suicide Prevention Training in Hawai'i to continue to build community access to trained gatekeepers.

Recommendation 2: Develop and implement a public awareness campaign

The stigma associated with suicide has been recognized as a barrier to treatment for many people who are having suicidal thoughts or who have made previous suicide attempts. Lives can be saved through public understanding that suicides are preventable and that individuals and groups can play a significant role in suicide prevention.

A statewide public awareness campaign would aim to increase awareness about suicide as a serious public health problem, dispel myths, and decrease stigma related to suicide. Messages and materials would support a shift in beliefs, promote help-seeking behavior, and publicize available prevention, intervention, and aftercare services in the community.

Recommended Next Steps

- Solicit input from community partners to develop and test clear, audience-specific messages to promote help-seeking behaviors.
- Work with partners to develop a dissemination plan and get messages out to the community.

Recommendation 3: Develop and promote effective clinical and professional practices and policies

Barriers to effective and appropriate services for individuals at risk for suicide include a shortage of culturally sensitive preventive services and treatment options for mental illness and substance abuse that promote help-seeking behaviors.

The health services system should be strengthened to:

- Raise awareness of services available.
- Ensure statewide access to screening and appropriate care.
- Provide culturally sensitive services that target underserved populations, including youth, seniors, the homeless, those who are incarcerated, adults with mental health challenges, individuals who are lesbian, gay, bisexual or transgendered, and others.
- Offer flexibility in health insurance reimbursements for mental health services.

Recommended Next Steps

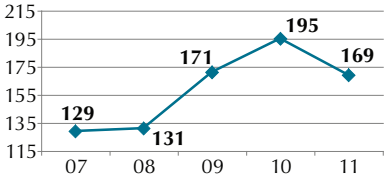
- PSHTF should provide leadership and coordination to:
  - Enhance collaboration with allied health areas to address the need for culturally sensitive prevention services.
  - Increase communication among health providers to improve the responsiveness of the system.
- Make trainings accessible to clinicians and provide continuing education credits as incentives.
- Continue providing culturally competent gatekeeper trainings to increase the number of gatekeepers in the community.

Injury Data for Suicides and suicide attempts

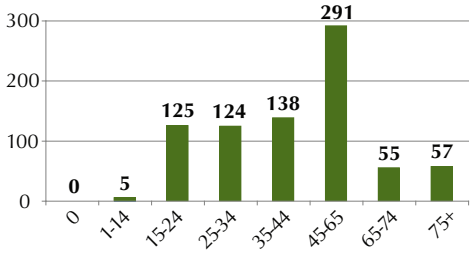
Fatal injuries

There was a generally increasing trend in the number of suicides in the state, and the 195 deaths in 2010 was by far the highest total in the 21-year period (1991-2011) for which data was available. Victim age was widely distributed, although almost all (95%) were 19 years or older. The highest fatality rates were computed for residents aged 45 to 54 years and those 85 years and older. Male victims outnumbered females by approximately 3-to-1. More than half (58%) of the victims were residents of O'ahu, but the fatality rate for O'ahu (58/100,000 residents) was significantly lower than the rate for the combined Neighbor Islands (94/100,000).

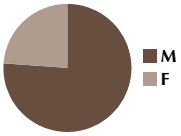
Trend: increasing
Total: 795
Ave: 159/year



Age groups:
20 to 60y = 74%



Gender:
76% M
24% F



County totals and 5-year rate (deaths/100,000):

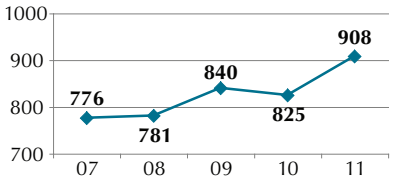
COUNTY	NUM.	RATE
Hawaii	150	98.6
Honolulu	465	57.5
Kauai	50	85.5
Maui	130	94.9

The most common mechanism was by hanging or suffocation (49% of the suicides), followed by firearm use (20%). Most (65%) of the O'ahu victims had a documented history of mental illness (as variously defined), according to autopsy records from 2007 to 2010. The most common negative life events for the victims were related to intimate relationship problems (34%), usually a break-up or divorce (12%), or serious illness or medical issues (26%). The latter was documented for 60% of the senior-aged victims. Over one-third (37%) had a history of substance abuse, 19% had a BAC (blood alcohol content) level over 0.08%, and 34% tested positive for illicit drugs. Nearly one-third (32%) of the victims had a previous suicide attempt documented in the record, and more than half (56%) had verbally threatened suicide.

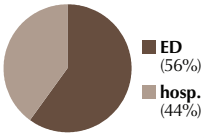
Nonfatal injuries

There was an increasing trend in the number of nonfatal suicide attempts, which was only evident in the annual number of injuries that were treated in EDs (emergency departments). Slightly more than half (56%) of the injuries were treated in EDs, unlike most types of injuries. Most (58%) of the patients were under 35 years of age, and residents aged 15 to 19 years had the highest rates of hospitalizations and especially ED visits. The gender distribution of patients was similar for both settings, with females comprising 57% of the total.

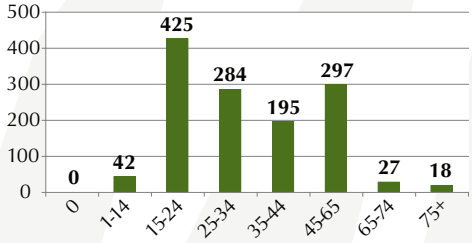
Trend: increasing trend
Ave: 826/year



Treatment:
465 ED
361 hosp.



Age groups:
15-24y = 33%



County totals, annual number and rate (/100,000):

COUNTY	NUM.	RATE
Hawaii	166	98.8
Honolulu	525	58.1
Kauai	61	102.3
Maui	74	51.5

Residents of Kaua‘i and Hawai‘i counties had significantly higher rates of nonfatal self-inflicted injuries compared to residents of Honolulu and Maui counties. Over half (58%) of the ED visits and most (85%) of the hospitalizations were caused by poisonings from drugs or medicinal substances, most commonly from the “analgesics, antipyretics, and antirheumatics” class (22% of ED visits, 33% of hospitalizations), which includes both narcotics (heroin, and other opiates), as well as aspirin and acetaminophen. Female patients were more likely to attempt by drug or medicinal poisonings (76%, vs. 62% for male patients).

Background and Accomplishments

The Hawai'i State Department of Health, Injury Prevention and Control Section (IPCS) has worked in traffic safety for more than twenty years. Since 2005, IPCS has strengthened relationships with state, county and community traffic safety partners through its commitment to the development, implementation and evaluation of the Department of Transportation's *Hawai'i Strategic Highway Safety Plan*.

- IPCS supported and evaluated the Graduated Driver's Licensing (GDL) legislation that was enacted in 2006. In 2010, data from the evaluation led to removal of the sunset clause, making GDL permanent in Hawai'i .
- With support and testimony provided by IPCS and traffic safety partners, Hawai'i passed an ignition interlock law in 2008 that took effect January 2010. The use of ignition interlocks, an evidence-based strategy to prevent alcohol-impaired driving, has been proven to reduce re-arrest rates.
- In partnership with the Department of Transportation (DOT), IPCS annually supports the nationwide "Click It or Ticket" Campaign – an enhanced enforcement program shown to increase safety belt use.
- IPCS assists with quality assurance of the traffic safety data collected in real time from Emergency Medical Services (EMS) personnel across the state in the Hawai'i Emergency Medical Services Information System (HEMSIS). HEMSIS is an integral part of the statewide trauma system that the Department of Health EMS Branch established.
- With the support of the DOT, the Keiki Injury Prevention Coalition (KIPC) has established regular safety check up sites and a network of trained technicians, including child passenger services for children with special health needs.
- IPCS provides data and technical support to numerous traffic safety partners across the state.

Recommendations

The following recommendations were prioritized based on results from a statewide survey of 45 state, county and community traffic safety partners. This survey included a list of evidence-based program and policy recommendations, many of which are in the *Hawai'i Strategic Highway Safety Plan*.

Motorcycle and Moped Safety

Recommendation 1: Increase helmet use among motorcycle and moped riders by supporting a universal moped and motorcycle helmet law

Properly worn helmets prevent deaths and brain injuries. In the event of a crash, helmets reduce the risk of death by 42% and the risk of a head injury by 69% (Liu, et al. 2008). States that have enacted universal helmet laws have seen significant reductions in fatality rates, head injuries and overall medical expenses related to motorcycle injuries (NHTSA 2011).

In 1968, Hawai'i enacted a universal helmet law under a federal mandate; it was repealed in 1977. Between 1968-1976, motorcycle fatalities in Hawai'i decreased by 57% (6 per 10,000 registered motorcycles between 1968-1976 vs. 14 per 10,000 registered motorcycles prior to 1968 and after the repeal in 1977; NHTSA, 2012).

Hawai'i currently has a partial helmet statute that requires riders under the age of 18 to wear a helmet. States with universal helmet laws have motorcycle rider fatality rates that were 20-40% lower than states with partial helmet laws (Ulmer & Preusser, 2003).

In Hawai'i from 2005-2009, more than two thirds (67%) of fatally injured motorcycle riders and almost all (96%) of fatally injured moped riders were not wearing a helmet at the time of the crash; and nearly half (47%) of motorcycle riders and 86% of moped riders were not wearing a helmet in non-fatal crashes (NHTSA 2012). Medical costs of helmeted riders average 67% lower than that of un-helmeted riders (Queen's Hospital Financial System data, 2005-2007). Currently Medicaid, Medicare, and Quest pay 22.5% of the medical costs for head injuries associated with motorcycle or moped crashes (Hawai'i Health Information Corporation, 2008).

Recommended Next Steps

- Establish a working group comprised of traffic safety advocates to work on helmet legislation.
- Enhance awareness among decision makers and the public about the benefits of motorcycle and moped helmet laws.
  - Develop and disseminate messages to key decision makers and the public that emphasize the effects of helmet laws on health care costs.
  - Partner with trauma centers to publicize how helmets can prevent traumatic brain injuries and reduce health care costs.
- Continue to provide data to traffic safety partners to highlight the effectiveness of helmets and their cost saving benefits.

Impaired Driving

Recommendation 1: Reduce impaired driving by increasing the use of screening and brief interventions in hospitals and primary health centers across the state

Driving under the influence (DUI) of alcohol or drugs is common in fatal crashes nationally, and especially in Hawai'i. Compared to other states, Hawai'i has a higher proportion of fatal crashes that involve impaired driving (NHTSA, 2012).

Impairment from alcohol or drugs is represented in all types of traffic related injuries as well as non-traffic related injuries. It is important to address penalties and sanctions to deter impaired

PARTNERS

AARP Hawai'i

City and County of Honolulu, Department of Transportation Services

Hawai'i Bicycling League

Hawai'i Traffic Commanders

Hawai'i State Department of Health, Healthy Hawai'i Initiative

Hawai'i State Department of Transportation

Injury Prevention Advisory Committee

Kaua'i Path

Keiki Injury Prevention Coalition

Mothers Against Drunk Driving

North Hawai'i Motor Vehicle Crash Reduction Group

O'ahu Metropolitan Planning Organization

One Voice for Livable Islands

Peoples Advocacy for Trails Hawai'i

State Highway Safety Council (formerly Governor's Highway Safety Council)

Strategic Highway Safety Planning Committee

driving and also create opportunities within the medical system to direct high-risk substance users to methods of reducing substance misuse or treatment. Consistent and swift penalties serve as a deterrent, and access to treatment helps reduce future incidents.

Research has shown that screening and brief interventions can reduce recidivism of alcohol-related trauma by up to 50%, which can help reduce DUI arrests and health care costs (Dill, et al., 2004). Screening and brief interventions are practices that help to identify a real or potential alcohol problem and motivate an individual to do something about it. According to NHTSA's 2011 report, *Countermeasures that Work: A Highway Safety Countermeasure Guide for State Highway Safety Offices*, the use of screening and brief interventions is a best practice strategy for reducing and preventing impaired driving.

Recommended Next Steps

- Use data about impaired driving injuries and fatalities to raise awareness about the problem among key decision makers.
- Raise awareness among key decision makers about the effectiveness of screening and brief interventions to prevent impaired driving.
- Provide technical assistance to hospitals and primary health centers interested in implementing a screening and brief intervention program.

Occupant Protection

Recommendation 1: Increase restraint use by supporting a universal safety belt law for all vehicle passengers

The safety belt law in Hawai'i does not require a seat belt to be worn by passengers over the age of 17 who are riding in the back seat. A comprehensive safety belt law would cover all seating positions equipped with a seat belt, in all passenger vehicles. Between 2006-2009, nearly 75% of unrestrained passengers involved in fatal crashes were unbelted in the back seat of a motor vehicle (NHTSA, 2012).

Recommended Next Steps

- Raise public awareness about injuries and fatalities among unbelted passengers in the back seats of vehicles.
- Educate key decision makers about the benefits of a universal safety belt law.
- Continue to provide data and technical assistance to traffic safety partners about seat belt usage.

Recommendation 2: Increase promotion of "high visibility enforcement efforts" for all traffic safety laws

Effective, high-visibility communications and outreach are essential components of successful safety belt law enforcement programs (Solomon, et al., 2003). According to NHTSA, strong advertising around the "Click It or Ticket" campaign has been shown to increase safety belt use by 8.6% (Solomon, et al., 2002).

IPCS maintains a database of traffic safety partners, including programs within the Department of Health, county fire departments, county police departments, and local hospitals. During the annual "Click It or Ticket" campaign, IPCS disseminates materials provided by the Hawai'i Department of Transportation to partners who have expressed an interest and willingness to participate. The same dissemination methods could be used to promote other national traffic campaigns aimed at reducing impaired or distracted driving.

Recommended Next Steps

- Maintain and continuously update IPCS's partnership database.
- Seek new partners to help promote national traffic safety campaigns.

Pedestrian and Bicycle Safety

Recommendation 1: Decrease pedestrian and bicycle-related injuries and fatalities by supporting "complete streets" policies in each county

"Instituting a complete *streets policy* ensures that transportation planners and engineers consistently design and operate the entire roadway with *all users* in mind - including bicyclists, public transportation vehicles and riders, and pedestrians of all ages and abilities." (National Complete Streets Coalition)

Since 2005, there has been an increased effort among traffic safety partners and advocates to reduce bicycle-related injuries and fatalities. In conjunction with engineering improvements, improved planning and design policies, targeted enforcement and public education efforts, and reductions in the average number of vehicle miles traveled, bicycle-related deaths in 2009 were nearly half of what they were in 2005 (NHTSA, 2012).

In 2009, the Hawai'i State Legislature passed Act 54 to support complete streets. Act 54 requires the Department of Transportation and county transportation departments to adopt a complete streets policy when planning future transportation projects.

Currently, Hawai'i still has the highest pedestrian fatality rate in the nation for older adults, and 16 out of 17 bicycle fatalities over the past 5 years involved a motor vehicle. Implementing complete streets design policies and Safe Routes to School programs will encourage infrastructural, behavioral, and educational changes to improve the safety and transportation equity for all road users.

Recommended Next Steps

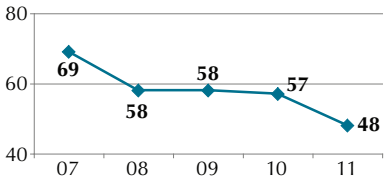
- Provide pedestrian and bicycle injury data to traffic safety partners to support implementation of complete streets policies and Safe Routes to School programs in each county.
- Support complete streets training and continuing education opportunities for engineers, planners, transportation agency heads and elected officials.

Injury Data for Motor vehicle crashes, occupants (excluding motorcyclists)

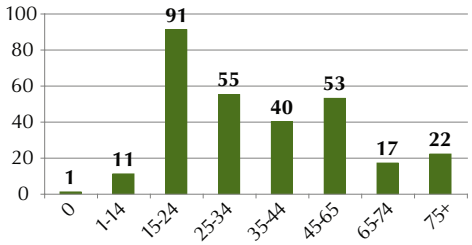
Fatal injuries

This category was the 4th leading cause of fatal injuries to Hawai'i residents, averaging 58 deaths per year. About one-third (32%) of the victims were 15 to 24 years of age. Most (73%) of the victims were males. Fatality rates were significantly higher among Neighbor Island residents, compared to O'ahu residents. The rates for residents of Hawai'i and Kaua'i counties were particularly high, more than 4 times higher than that computed for Honolulu County.

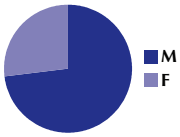
Trend: decreasing
Total: 290
Ave: 58/year



Age groups:
15-24y = 31%



Gender:
73% M
27% F



County totals and 5-year rate (deaths/100,000):

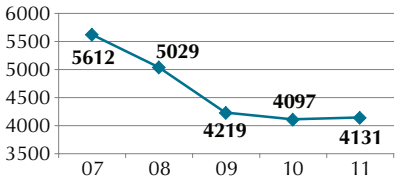
COUNTY	NUM.	RATE
Hawaii	94	55.6
Honolulu	115	12.3
Kauai	35	54.5
Maui	46	32.6

More than half (57%) of the fatal crashes occurred during nighttime hours (7:29 p.m. to 5:31 a.m.), and 61% involved only a single vehicle. Lack of restraint use was a major risk factor for occupant fatalities, as less than half of the victims (47%) were wearing seat belts at the time of the crash. Restraint use was especially low among back seat passengers (25%). Speeding was the most common contributing factor, noted for 41% of the drivers. Substance use was also an important contributing factor, as 40% of the drivers involved in fatal car crashes tested positive for alcohol, almost one-quarter (23%) tested positive for drugs, and nearly half (49%) tested positive for either alcohol or drugs. The peak age of alcohol use among drivers was 21 to 24 years of age, as 56% tested positive for alcohol. More than half (56%) of the fatalities from car crashes were related to alcohol consumption by at least one driver involved in the crash.

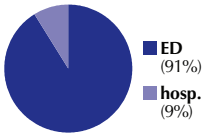
Nonfatal injuries

There were more than 4000 nonfatal injuries among car occupants each year in Hawai'i, with a decreasing annual trend. Most (91%) of the injuries were treated in EDs (emergency departments). Patient age was widely distributed, although 27% were 15 to 24 years of age, and this age group also had by far the highest rate of injury. There were nearly equal numbers of female (52%) and male (48%) patients.

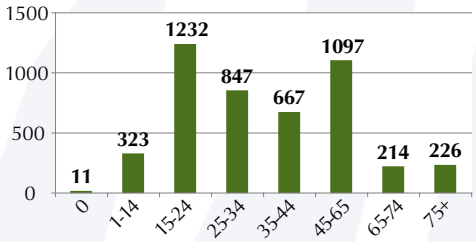
Trend: decreasing
Ave: 4618/year



Treatment
4204 ED
414 hosp.



Age groups:
15-24y = 27%



County totals, annual number and rate (/100,000):

COUNTY	NUM.	RATE
Hawaii	1133	636
Honolulu	2606	285
Kauai	358	554
Maui	521	355

The nonfatal injury rate for residents of Hawai'i County was significantly higher than the rate for residents of any other county, while the rate for Honolulu County residents was significantly lower than that for residents of any other county. Almost all (95%) of the injuries were coded as "traffic", or occurring on public roads. Patients were hospitalized for an average of nearly 1 week, with nearly $46,000 in average medical charges per patient.

EMS data and 2007 linked data (EMS, DOT, HHIC, FARS, death certificates)

Most (86%) of the injured occupants treated by EMS were wearing seatbelts. Restraint use was strongly associated with EMS patient disposition, including a 7-fold increase in mortality rate among unrestrained occupants (4.5%) compared to those who wore seatbelts (0.6%). Probable alcohol use was noted for about 10% of the patients, and drinkers were significantly less likely to use seatbelts (71%, vs. 88% for other occupants). Linked data from 2007 showed unrestrained EMS patients had more than twice (2.3) the odds of an injury that required hospitalization or resulted in death, compared to restrained occupants, and more than triple (3.2) the odds of a fatal injury. These excess risks were statistically independent of patient age, gender, or the county of the crash.

Hawai'i Trauma Registry (toxicology data)

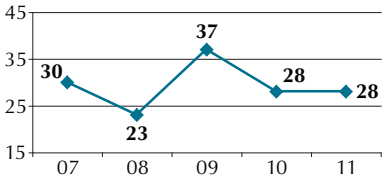
About one-third of the injured resident occupants in the Hawai'i Trauma Registry tested positive for alcohol (32%) or illicit drugs (35%). Considered together, more than half (52%, or 626) of the occupants tested positive for either alcohol or drugs. Occupants who were drinking were significantly younger than those who tested negative for alcohol (32 vs. 41 years, on average), more likely to be male (75% vs. 56%), and less likely to have used seat belts (46% vs. 63%).

Injury Data for Motor vehicle crashes, motorcyclists

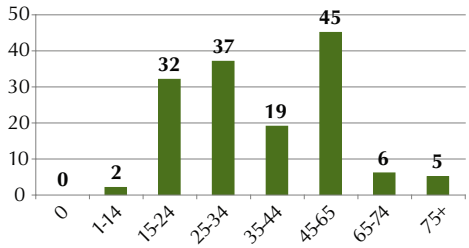
Fatal injuries

Deaths among motorcyclists were the 6th leading cause of fatal unintentional injuries in the state, accounting for 146 total deaths from 2007 to 2011. Nearly half (45%) of the victims were adult males 20 to 40 years of age. Most (73%) of the decedents were riding motorcycles; there were also 27 moped riders who were killed, including 16 over the 2010 to 2011 period. The 5-year fatality rates were significantly higher for residents of Hawai'i and Maui counties compared to Honolulu County.

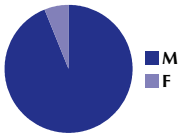
Trend: no trend
Total: 146
Ave: 29/year



Age groups:
20-34y = 41%



Gender:
94% M
6% F



County totals and 5-year rate (deaths/100,000):

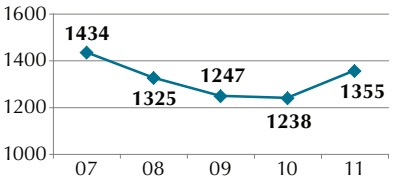
COUNTY	NUM.	RATE
Hawaii	37	19.2
Honolulu	77	8.2
Kauai	7	-
Maui	25	18.0

Almost half (46%) of the fatal crashes did not involve another vehicle, although that proportion was lower (26%) among the fatally injured moped riders. Only about one-fourth (27%) of all riders were wearing a helmet at the time of the crash, including only 7% of the moped riders. Nearly half (47%) of the decedents tested positive for alcohol, and 29% for illicit drugs. Alcohol use was most common among drivers who crashed during nighttime (66%) and among those in crashes without another motor vehicle (69%). About half (51%) of the fatally injured drivers did not have a valid motorcyclist license, and that proportion was significantly higher among those who had consumed alcohol (58%, vs. 44% among other drivers). More than one-half (58%) of the riders were noted to have been speeding at the time of the crash, a proportion that was higher among motorcyclists (62%) and those who crashed on O'ahu (66%).

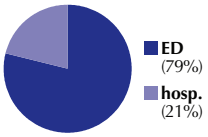
Nonfatal injuries

There was a decreasing trend in the annual number of nonfatal injuries among motorcyclists over the 2007 to 2010 period, but an increase in 2011. More than 1000 were treated in EDs each year and another 276 were hospitalized. Patient age was narrowly distributed, with 51% between 15 and 34 years of age. The peak age for rates of both ED visits and hospitalizations was among 20 to 24 year olds. Most (83%) of the patients were males.

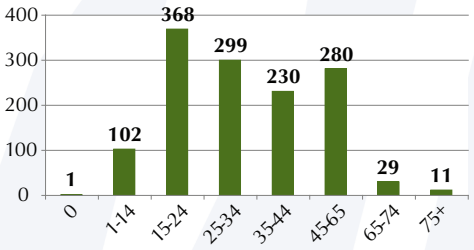
Trend: no trend
Ave: 1287/year



Treatment:
1044 ED
276 hosp.



Age groups:
15-34y = 51%



County totals, annual number and rate (/100,000):

COUNTY	NUM.	RATE
Hawaii	265	157
Honolulu	713	78
Kauai	106	181
Maui	236	166

Although about half (54%) of the patients were residents of Honolulu County, residents there had significantly lower rates of nonfatal injuries than residents of any other county. Injury rates were approximately twice as high among residents of Neighbor Islands. Forty-four percent of the crashes did not involve a collision, but were due to loss of control by the rider. Three-fourths (75%) of the nonfatal injuries were coded as "traffic" related, or occurring on a public roadway, while 25% were in "non-traffic" environments, including off-road crashes. Nearly one-fifth (19%) of the patients who were injured in non-traffic crashes were 5 to 14 years of age. The average hospitalization was nearly 1 week in duration and resulted in over $51,000 in medical charges. About two-thirds (64%) of the hospitalized patients and one-quarter (23%) of those treated in EDs had fractures.

EMS data and 2007 linked data (EMS, DOT, HHIC, FARS, death certificates)

About 55% of the EMS Patients were riding motorcycles (55%), and 40% were riding mopeds (status unknown for 5%). About two-thirds (65%) of all riders were wearing a helmet. The proportion not wearing helmets was significantly higher, nearly doubled, among the moped riders (68%), compared to motorcycle riders (38%). Patient condition differed by helmet usage, as helmeted riders were significantly more likely to be transported with minor or moderate injuries (23%, compared to 19% for unhlemeted riders), and significantly less likely to be transported in critical condition (1.9% vs. 3.7%). The mortality rate among helmeted riders (2.5%, or 31 of 1249) was also significantly less than that among unhelmeted riders (4.6%, or 86 of 1879). Probable alcohol use was noted for about 12% of the patients, and alcohol users were significantly less likely to have worn helmets (14%, vs 41% among those with no alcohol use).

Linked data from 2007 showed the odds of sustaining an injury that required hospitalization or resulted in death were 40% higher among unhelmeted rides compared to helmeted riders, and the former also had more than twice the odds (2.2) of a fatal injury. The protective effects of helmet use were magnified if only motorcycle riders were considered. Unhelmeted motorcycle riders had twice the odds of an injury that required hospitalization or resulted in death, more than 3 times the odds of a fatal injury, and 3 times the odds of a TBI (traumatic brain injury).

Hawai'i Trauma Registry (toxicology data)

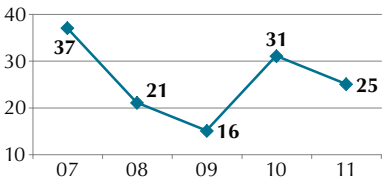
About one-fourth (26%) of the injured resident motorcycle/moped riders in the Hawai'i Trauma Registry tested positive for alcohol, including 21% (178) with BAC (blood alcohol content) levels of 0.08 or greater, and 14% (117) with BAC levels of 0.16% or greater. Moped riders were significantly more likely than motorcyclists to have been drinking (31% vs 24%, respectively). More than half (54%, or 464) of the riders tested positive for either alcohol or drugs, including most (78%) of the 285 moped riders. Alcohol usage was 4 times more common among those who crashed during night time (54%) compared to those who crashed between 6:30 a.m. and 7:29 p.m. (14%).

Motor vehicle crashes, pedestrians

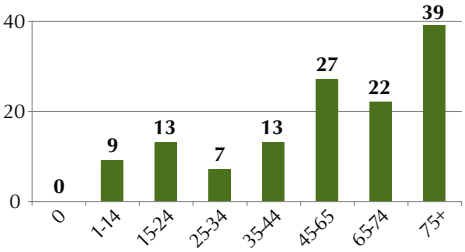
Fatal injuries

There was no statistically significant trend in the annual number of pedestrian fatalities, although the highest total occurred in 2007 (37 deaths). Senior-aged residents comprised 47% of the victims, and the fatality rates increased dramatically across the oldest age groups. Most (69%) of the victims were hit on O'ahu, but there were no significant differences in county-specific fatality rates. Almost all (80%) of the victims who were 65 years or older were hit on O'ahu, and the fatality rate for O'ahu seniors was statistically comparable to that for seniors living on Neighbor Islands (36 vs. 22 deaths /100,000, respectively).

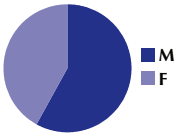
Trend: no trend
Total: 130
Ave: 26/year



Age groups:
65y and older = 47%



Gender:
58% M
42% F



County totals and 5-year rate (deaths/100,000):

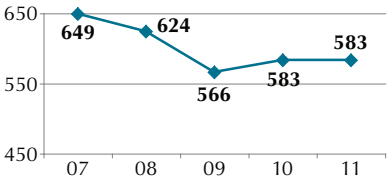
COUNTY	NUM.	RATE
Hawaii	21	11.4
Honolulu	90	8.8
Kauai	4	-
Maui	15	10.5

There were 2 peak times for pedestrian fatalities: 27 crashes (21% of the total) occurred between 5:31 a.m. and 9:29 a.m., and 40 (31%) took place between 5:31 p.m. and 11:29 p.m. Only 34% of the victims were in a crosswalk at the time of the crash; a nearly equal proportion (35%) were hit on open stretches of roadway. The most common speed zone was 25 miles per hour (45% of crashes). Almost two-thirds than half (63%) of the senior-aged victims were hit in 25 mph or slower zones, compared to 33% of pedestrians under the age of 65 years. According to FARS data from 2007 to 2010, more than one-quarter (26%) of the 84 fatally injured pedestrians tested positive for alcohol, and 25% had BAC levels of 0.08% or higher. Alcohol use was significantly higher among male victims (42%) compared to females (6%). The highest prevalence of alcohol use was seen among victims in the 21 to 34 year age group (70%, or 7 of 10), and the 35 to 54 year age group (52%, or 11 of 21). According to FARS data, 39% (33) of the pedestrian victims were in the roadway erroneously, most commonly by "improper crossing of roadway or intersection", including jaywalking (21%, or 18 victims). Including the victims who tested positive for alcohol or drugs, 54% (or 45) of the pedestrians made an error that contributed to the crash. More than half (59%, or 52) of the 88 drivers made an error which contributed to the crash. Most commonly, they were described as "inattentive" (38%), failed to yield the right of way (25%), or were speeding (18%).

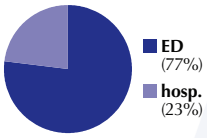
Nonfatal injuries

The annual number of nonfatal injuries to pedestrians generally decreased from 649 in 2007 to 583 in 2011. About one-quarter (23%) of the patients with nonfatal injuries were admitted to hospitals, the highest such proportion for any unintentional injury category. Patient age was widely distributed, but one-third (33%) were in the 5 to 24 year age group. This group also had the highest rate of nonfatal injuries that were treated in EDs, while senior aged residents had the highest rates of hospitalizations.

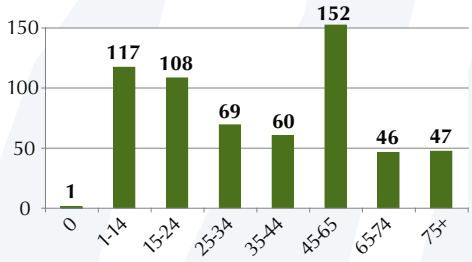
Trend: decreasing
Ave: 601/year



Treatment:
464 ED
137 hosp.



Age groups:
5-24y = 33%



County totals, annual number and rate (/100,000):

COUNTY	NUM.	RATE
Hawaii	80	45.5
Honolulu	434	47.5
Kauai	29	46.2
Maui	58	39.6

The rates of both ED visits and all injuries (ED visits combined with hospitalizations) were lowest for Maui County residents, although all county-specific rates were statistically comparable. Most (88%) of the nonfatal injuries were coded as "traffic" related, or occurring on a public roadway, while 12% were in "non-traffic" environments, including private roads, driveways and parking lots. Thirty percent of the patients injured in non-traffic crashes were in the 1 to 14 year age group. Patients were hospitalized for an average of 9 days, with nearly $60,000 in medical charges. Hospitalizations accounted for most (73%) of total patient days and 87% of the $9.4 million in total medical charges.

EMS data and 2007 linked data (EMS, DOT, HHIC, FARS, death certificates)

There were 2 peak periods for the time of the EMS-attended crashes, from 6:31 a.m. to 8:29 a.m. (13%, or 287 crashes), and from 2:29 p.m. to 7:29 p.m. (35%, or 788 crashes). The time distribution differed by patient age, as crashes with senior-aged pedestrians were more likely to occur during daytime hours (86%), compared to crashes involving pedestrians under 65 years of age (73%). Patient condition differed by age, as senior-aged pedestrians were significantly more likely to be transported to a hospital, compared to pedestrians under 65 years of age (85% vs. 79%, respectively), and had a significantly higher mortality rate (10.3%, or 47 of 456, vs. 3.6%, or 67 of 1855). The mortality rate was also significantly elevated among pedestrians who were hit during night time hours (7.4%, or 42 of 566), compared to those hit between 5:31 a.m. and 7:29 p.m. (4.1%, or 72 of 1747), despite the younger age distribution among the former. Probable alcohol use was noted for about 9% of the patients. Patients who had used alcohol had generally worse dispositions, and were more than three times as likely to require transport in critical condition, and nearly twice as likely to have died, compared to those who did not use alcohol.

Hawai'i Trauma Registry (toxicology data)

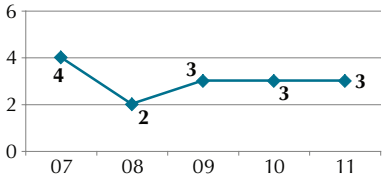
Only 16% of the injured pedestrians in the Hawai'i Trauma Registry had been drinking at the time they were hit. This percentage was significantly higher among those under 65 years of age (22%), as only 2% (3) of the 138 senior-aged pedestrians tested positive for alcohol. Illicit drug usage was documented for 25% of the patients, including 30% of those who were under 65 years of age. Alcohol use was nearly 8 times likely among pedestrians hit during night time hours (41%) than among those hit between 6:30 a.m. and 7:29 p.m. (5%).

Injury Data for Motor Vehicle Crashes, Bicyclists

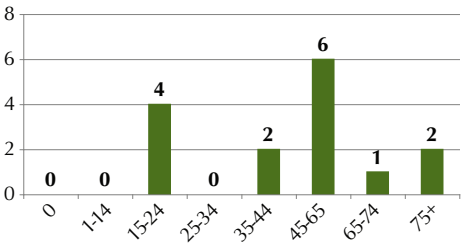
Fatal injuries

There were between 2 and 4 bicyclists killed in Hawai'i each year, and 80% (12) of the 15 deaths occurred on O'ahu. There was no apparent high-risk age group. Almost all (87%, or 13) of the bicyclists killed over the 5-year period were males. Most (87%, or 13) of the victims were hit by a car; 2 others died after falling off their bicycles. Only 2 of the victims were wearing helmets at the time of the crash (status unknown for 2 others). There was no notable peak time of the day for the crashes; most (64%, or 9) occurred between during daylight hours between 7:31 a.m. and 7:00 p.m.

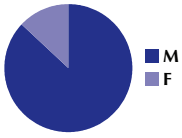
Trend: no trend
Total: 15
Ave: 3/year



Age groups:
widely distributed



Gender:
87% M
13% F



County totals and 5-year rate (deaths/100,000):

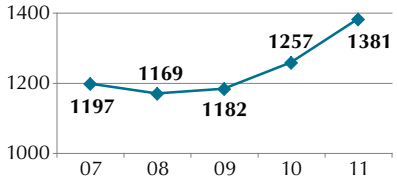
COUNTY	NUM.	RATE
Hawaii	0	-
Honolulu	12	1.3
Kauai	0	-
Maui	3	-

Almost all (91%, or 10) of the 11 traffic-related crashes (from 2007 to 2010) involved cars traveling straight on the road; only 1 crash was due to a car making a turn. Two (18%) of the 11 bicyclists tested positive for alcohol, and 4 (36%) tested positive for drugs. Overall, about half (54%, or 6) of the victims tested positive for either alcohol or drugs. Besides substance use 2 bicyclists were traveling against traffic at the time of the crash and another failed to yield the right-of-way. Four (36%) of the 11 drivers made an error which contributed to the crash, most commonly substance use and speeding (2 instances each).

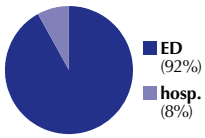
Nonfatal injuries

There were more than 1200 nonfatal injuries to bicyclists each year, with a generally increasing trend. Most (92%) of the injuries were treated in EDs (emergency departments). Males comprised 75% of the patients, including 80% of those who were hospitalized. Nearly one-third (31%) of the patients were 5 to 14 years of age, and the injury rate for 5 to 14 year-olds (244 injuries/100,000 residents) were more than 3 times higher than the rate for residents of other ages (74/100,000).

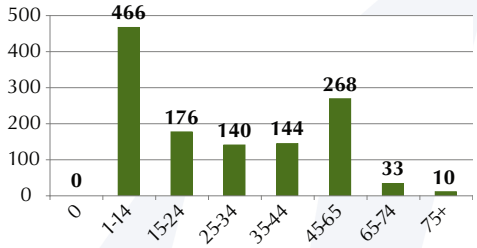
Trend: increasing trend
Ave: 1237/year



Treatment:
1133 ED
105 hosp.



Age groups:
1-14y = 38%



County totals, annual number and rate (/100,000):

COUNTY	NUM.	RATE
Hawaii	201	120.4
Honolulu	779	90.7
Kauai	109	182.8
Maui	148	102.9

The injury rate for Kaua'i County residents was significantly higher than the rates for any other county, and approximately double the rate estimates for residents of Honolulu or Maui counties. Almost all (85%) of the injuries were coded as "non-traffic", or occurring on private roads, driveways, or off-road environments. Most of the injuries treated in EDs (88%) and requiring hospitalization (71%) were coded to indicate crashes that did not involve a collision with another vehicle or object, but were probably due to the patient falling off of the bicycle. Although 92% of the patients were treated in EDs, hospitalizations comprised 32% of the treatment days and 66% of the total medical charges of $5.8 million/year. Most (63%) of the hospitalized patients had fractures, including 15% with skull fractures and 20% with leg fractures. More than one-third (38%) of these patients had a traumatic brain injury.

EMS data and 2007 linked data (EMS, DOT, HHIC, FARS, death certificates)

Most (73%) of the EMS-attended bicyclist crashes were distributed over the 11-hour period of 7:31 a.m. to 6:29 p.m., with a peak from 4:31 p.m. to 6:29 p.m. (17%). About half (53%) of the injuries involved motor vehicles and 47% did not. Only 27% of the injured bicyclists wore helmets. Unhelmeted riders had a significantly higher proportion of "critical" or fatal injuries (2.1%, or 22 of 1031), compared to helmeted riders (0.7%, or 3 of 458). These differences were accentuated among crashes that involved motor vehicles, as the proportion of unhelmeted bicyclists with critical or fatal injuries was 3.1% (17 of 540), compared to 0.9% (2 of 214) among helmeted riders. Probable alcohol use was noted for about 9% of the patients. If only the bicyclists with known alcohol and helmet status were considered, helmet use was 5 times higher among those who did not consume alcohol (35%), compared to the drinkers (5%).

Linked data from 2007 showed odds of sustaining an injury that required hospitalization or resulted in death were 80% higher among unhelmeted rides compared to helmeted riders, although this estimate was only of "borderline" statistical significance (p=0.11).

Hawai'i Trauma Registry (toxicology data)

Only 11% of the injured bicyclists in the Hawai'i Trauma Registry had been drinking at the time they were injured. This percentage was nearly three times higher among those hurt in crashes that did not involve a motor vehicle compared to those who were hit by motor vehicles (15% vs. 6%, respectively). About one-quarter of the bicyclists tested positive for illicit drugs, most commonly narcotics (17%), and this proportion did not differ by the type of crash. Overall, one-third (33%, or 89) of the 271 patients tested positive for either alcohol or drugs. None of the 28 bicyclists who had been drinking were wearing a helmet at the time of the crash, compared to 27% usage among those who tested negative for alcohol, and 31% among those who were not tested.

Violence and Abuse Prevention

Background and Accomplishments

The Hawai'i State Department of Health, Maternal and Child Health Branch (MCHB) leads activities in the state to prevent intimate partner violence, sexual assault, and child maltreatment, with support from the Injury Prevention and Control Section (IPCS) and other partners in the community. IPCS has been specifically involved with bullying prevention and also leads activities in the state to prevent suicide prevention.

- Beginning in 2009, IPCS and community partners worked with MCHB to identify Title V bullying prevention and child abuse and neglect prevention performance measures. With technical support from the national Children's Safety Network, MCHB and IPCS collaborated to conduct the first statewide cross-program integration training in November 2009 for bullying and child abuse and neglect prevention. The training strengthened collaborative efforts between IPCS, MCHB, and community partners on program and policy initiatives related to violence prevention.
- The Safe Schools Community Advisory Committee developed 33 recommendations for policies and strategies to address bullying and harassment in public schools. Members are currently working to get these recommendations adopted by the Board of Education and Department of Education.
- The Maui County Hoʻoikaika Partnership is a group of agencies working together since 2008 to implement best practices and policies as they strengthen violence prevention services for children and their caregivers. This collaborative initiative serveS as a model for similar partnerships across the state.
- The Asian/Pacific Islander Youth Violence Prevention Center was established in 2000 as one of ten National Academic Centers of Excellence on Youth Violence Prevention funded by CDC. Since then, the Center has partnered with IPCS and other organizations to conduct research on youth violence and develop, implement and evaluate violence prevention programs.
- IPCS helped establish a non-profit coalition to promote primary prevention of violence, Prevent Violence Hawai'i. IPCS funded the University of Hawai'i Social Science Research Institute to produce, Ending Violence: A 2004 Status Report on Violence Prevention in Hawai'i. The report's recommendations were based on the World Health Organization's approach to addressing risk factors and solutions common to all areas of violence. Concerns about sustaining efforts in individual areas of violence hampered the organization's ability to take a unified approach to violence prevention, and the non-profit dissolved in 2010.

Recommendations

In 2010, a statewide needs assessment was conducted that included an online survey of 149 people representing government agencies, law enforcement, schools and universities, medical centers, non-profit organizations, private businesses, and grassroots organizations; and qualitative interviews with 21 key informants from state agencies and universities. A cross-disciplinary stakeholder group was convened to review the results and recommendations, and assess whether they reflected the potential for measurable progress and impact over the next five years.

The resulting recommendations outlined here build on Ending Violence: A 2004 Status Report on Violence Prevention in Hawai'i and the Hawai'i Injury Prevention Plan 2005-2010. They reflect stakeholders' renewed readiness to collaborate. Effectively preventing violence will take the concerted efforts of individuals and organizations from all sectors working together across all areas of violence.

Recommendation 1: Establish and promote forums for collaboration and information sharing to help integrate violence and abuse prevention efforts statewide

While different types of violence share common risk factors and prevention strategies, prevention efforts are often independent. Forums that encourage organizations that serve different populations and address different types of violence to share information about effective strategies would facilitate collaboration and coordination of efforts (Saul, et al, 2008).

Efforts should be comprehensive and address the different types of violence, encourage the use of evidence-based program and policy practices, and account for primary, secondary, and tertiary prevention as appropriate.

Recommended Next Steps

- Facilitate opportunities for inter-agency collaboration and coordination among organizations serving different populations and addressing various sub-forms of violence.
- Expand the use of new and existing channels of communication such as newsletters, listservs, websites, clearinghouses, and other means of technology to facilitate the exchange of information and resources among partners at all levels and in all areas of violence.

Recommendation 2: Collaborate with professionals and community workers to develop a public awareness campaign about violence and abuse prevention.

Current partners represent all levels of prevention and include community and non-profit social service organizations, primary health care centers, law enforcement, and selected policymakers. But there are additional partners who may not be aware of their potential role in violence prevention or understand the value of their programs to violence prevention efforts.

Engaging partners in the development, implementation and evaluation of a communications campaign to raise public awareness will increase likelihood of success at all levels (e.g., developing messages, producing materials, identifying appropriate channels for dissemination).

PARTNERS

Child Death Review Council

Domestic Violence Fatality Review

Hawai‘i Children’s Trust Fund Advisory Council

Hawai‘i Coalition Against Sexual Assault

Hawai‘i Community Foundation

Hawai‘i Youth Services Network

Hawai‘i State Department of Education, School Based Behavioral Health

Hawai‘i State Department of Health, Family Health Services Division, Maternal and Child Health Branch

Hawai‘i State Department of Human Services

Hawai‘i State Department of the Attorney General

Hawai‘i State Judiciary, Children’s Justice Center and First Circuit Court

Hoʻoikaika Partnership

Injury Prevention Advisory Committee

Maui County Domestic Violence Task Force

University of Hawai‘i, John A. Burns School of Medicine, Department of Psychiatry

University of Hawai‘i, Social Science Research Institute

Recommended Next Steps

- Identify and reach out to potential partners that may not perceive their work as being related to violence prevention.
- Work with existing and new partners to develop and implement a public education campaign using clear, consistent, tested messages.
- Partner with representatives from the media to enhance efforts and increase reach for messaging.

Recommendation 3: Promote training that enhances knowledge and skills of community workers and professionals working in violence prevention and related fields

There should be continued training among providers and organizations, and audiences should extend beyond those working directly in the violence and abuse prevention fields. For example, teachers and counselors could receive related information as part of their academic training. Organizations could adopt violence prevention modules as part of their new employee orientation protocols.

Recommended Next Steps

- Identify training opportunities and resources available to community workers in the violence and abuse prevention fields to enhance their knowledge and skills in primary prevention.
- Identify training opportunities and resources for other professionals and community members to enhance their knowledge and skills in primary prevention.

Recommendation 4: Enhance the use of data to understand common risk and protective factors for violence prevention

Data are crucial to understanding the complex issue of violence. Data help programs develop priorities, guide interventions and policies, and mobilize support (World Health Organization, 2002). Barriers to collecting and sharing information across agencies need to be removed so that data are accessible to everyone. There also are additional data sources (i.e., on different types of violence) that would help illustrate trends and better guide research and intervention efforts.

Recommended Next Steps

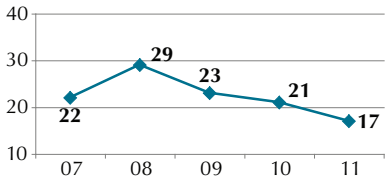
- Facilitate data and information sharing across state agencies.
- Identify and acquire new data sources to develop an annual report on child maltreatment that will enhance understanding of violence and abuse.

Injury Data for Homicides and Assaults

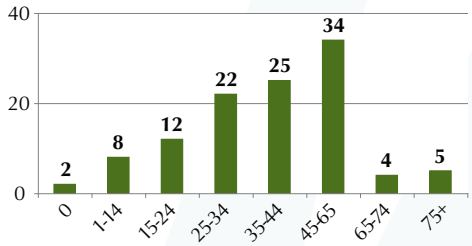
Fatal injuries

There were 112 victims of homicide over the 5-year period, with a decreasing trend from 29 in 2008 to 17 in 2011. More than half (58%) of the victims were in the 25 to 54 year age range, but there were also 6 victims (5%) who were under 5 years of age. Males comprised 59% of the victims. The fatality rate for residents of O'ahu (8.8 deaths/100,000 residents) was statistically comparable to the rate for all Neighbor Island residents (8.4/100,000).

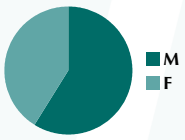
Trend: decreasing trend
Total: 112
Ave: 22/year



Age groups:
25 to 54y = 58%



Gender:
59% M
41% F



County totals and 5-year rate (deaths/100,000):

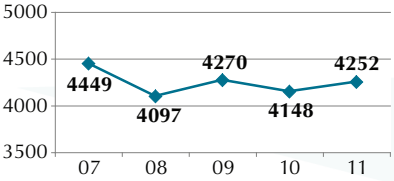
COUNTY	NUM.	RATE
Hawaii	17	-
Honolulu	81	8.8
Kauai	7	-
Maui	7	-

The most common method was the use of firearms (35%), followed by stabbings (28%), and physical force or unarmed beatings (25%). According to Uniform Crime Reports from 2007 to 2009, most (73%) of the homicide victims knew their assailant, and only a minority (19%) were killed by strangers. Female victims were most likely to be killed by their intimate partner (37%, vs. 5% of male victims), while males were most likely to be killed by extra-familial acquaintances (40%) or strangers (25%).

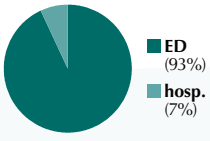
Nonfatal injuries

There were over 4200 nonfatal injuries from assaults among Hawai'i residents each year, with no clear trend over time. Males comprised two-thirds (67%) of the patients treated in EDs (emergency departments) and an even greater proportion (89%) of those who were hospitalized. More than half (58%) of the patients were 15 to 34 years of age; few (5%) were under 15 years of age, or over 65 years of age (1%). The peak age for rates of both ED visits and hospitalizations was the 15 to 29 year age group, particularly 20 to 24 year-olds.

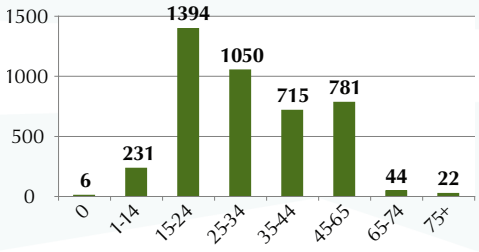
Trend: no trend
Ave: 4243/year



Treatment
3936 ED
307 hosp.



Age groups:
15-24y = 33%



County totals, annual number and rate (/100,000):

COUNTY	NUM.	RATE
Hawaii	771	466.3
Honolulu	2735	302.4
Kauai	226	384.0
Maui	511	363.2

The injury rate for residents of Hawai'i County was significantly higher than for any other county, while the rate for residents of Honolulu County was significantly lower than any other county. Patients were hospitalized for nearly 5 days on average, with over $31,000 in charges for each admission. Unarmed beatings caused 70% of all injuries, and 61% of those that required hospitalization. Fractures were the most common type of injury (53%) that required hospitalization, including 44% of patients admitted with a skull fracture.

EMS data

The number of EMS-attended incidents generally increased over the course of the day (starting at 6 a.m.), reaching a broad peak during the 7:31 p.m. to 2:29 a.m. period (48% of the total). The home or residence of the patient was the most common location for the assault (40%), followed by other indoor location or buildings (17%), most commonly "public buildings" (7%), and bars and restaurants (6%). One-fifth (20%) of the patients were transported in serious or critical condition. That proportion was highest among the senior-aged victims (29%). Probable alcohol use was noted for 29% of the patients. Patients who had consumed alcohol were significantly less likely to be released at the scene (34%, vs. 52% for other patients), and twice as likely to be transported in serious condition (31% vs. 15%, respectively).

Hawai'i Trauma Registry (toxicology data)

Nearly half (46%) of the adult-aged (18 years and older) Hawai'i Trauma Registry resident patients who were injured by assaults were positive for alcohol, and more than one-third (38%) tested positive for illicit drugs. About three-fourths (76%, or 286) of the 375 drinkers had BAC (blood alcohol content) levels of 0.08% or greater. THC (marijuana) was the most commonly documented drug (19% of the patients), followed by amphetamines (15%) and narcotics (15%). Considered together, about two-thirds (67%) of the patients tested positive for either alcohol or drugs. Alcohol use was significantly more likely among the male patients (49%) compared to females (27%), among those injured on weekends (54% vs. 41% for those assaulted on weekdays), and among those assaulted during night time hours (54%, vs. 30% for those injured between 6:31 a.m. and 7:29 p.m.).

Appendix A: Hawai'i Injury Prevention Plan 2005-2010 Status Report

INFRASTRUCTURE

RECOMMENDATIONS	STATUS*	CURRENT EFFORT**	COMMENTS
Stabilize IPCS funding and support expansion of injury prevention services to all counties throughout the state. ▸ Stabilize funding for Core IPCS positions ▸ Establish suicide prevention coordinator position ▸ Establish Neighbor Island positions	**Progress Made** **Objective Met** **Progress Made**	✓ ✓	IPCS has 3 permanent state funded positions – Program Manager, Planner, and Suicide Prevention Coordinator. In 2012, the Hawai'i State Legislature approved potential funding for injury prevention positions with Trauma Special Funds. Trauma coordinator program manager positions at trauma centers across the state are funded through DOH Emergency Medical Services Injury Prevention System Branch and are required to incorporate injury prevention into their work.
Establish standards for completeness and accuracy of external cause of injury coding (e-coding) for hospitals to achieve and maintain.	**Objective Met**		E-coding is at 90% for emergency department and hospital admission records.
Produce and disseminate annual and specialized injury reports.	**Objective Met**		*Injuries in Hawai'i 2001-2006* was published in 2008. IPCS developed an injury data overview for the IPAC orientation packet. Injury specific data overviews are updated each year and shared with IPAC and other partners.
Incorporate injury prevention into Hawai'i's Health Education Standards for grades K through 12.	**Progress Made**		The Hawai'i Health standards-based playground safety curriculum and unintentional injury curriculum were developed for public elementary schools.
Develop a cadre of individuals and organizations who are injury literate, articulate, and active.	**Progress Made**	✓	An injury prevention module was developed for emergency medical and mobile intensive care technician classes at Kapi'olani Community College, and the course was taught across the state. IPCS coordinated injury prevention integration training with Department of Health Family Health Services Division, Maternal and Child Health Branch as well as several injury specific conferencesand public health core competency workshops.
Cultivate awareness and advocacy among policy makers and the public in recognizing and addressing injuries as a major public health problem in Hawai'i.	**Progress Made**	✓	IPCS distributed Injuries in Hawai'i to 2008 Legislators; provided testimony for injury-related legislation; developed and disseminated materials for the injury prevention "No Get Hurt Hawai'i" campaign with prevention tips; and developed IPAC packet.
Foster partnerships with the military to address injury prevention issues in which the military can have impact.	**Progress Made**	✓	IPAC and Prevent Suicide Hawai'i Steering Committees include representatives from the military. Members of the military are involved in the Department of Transportation's "Click It or Ticket" campaign as well as Prevent Suicide Hawai'i Task Force suicide prevention efforts.

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DROWNING

RECOMMENDATIONS	STATUS*	CURRENT EFFORT**	COMMENTS
Develop a beach rating system that includes comprehensive risk assessments for all beaches in the state.	**Objective Met**		The rating system and beach safety website were developed (www.hawaiibeachsafety.org).
Evaluate existing and promising programs, curriculum, and activities to determine their effectiveness in preventing drownings and other water-related injuries, and to appropriately allocate limited resources.	**Progress Made**	✓	Conducted an evaluation of beach warning signs in 2009.
Support mandatory 4-sided isolation fencing for residential pools.	**On Hold**		IPCS not currently involved.
Conduct a coordinated educational campaign targeting residential pool owners and pool service providers to promote pool safety and the adoption of safety devices.	**Objective Met**		Worked with Swimming Pool Association of Hawai'i to develop a pool safety awareness campaign; conducted a pool safety survey of pool owners.

FALLS

RECOMMENDATIONS	STATUS*	CURRENT EFFORT**	COMMENTS
Enhance public awareness that falls are preventable and promote actions that reduce the risk of injury.	**Progress Made**	✓	IPCS participated with partners, including Fall Prevention Consortium members, in annual campaign for fall prevention awareness. Fall prevention questions were added to statewide health survey in 2008.
Increase availability and accessibility of fall prevention programs statewide for caregivers and older adults on how to prevent falls and effectively use community resources.	**Progress Made**	✓	Fall Prevention Resource Guide developed and posted online, will be revised in 2012. Needs assessment conducted in 2010. Piloted two *Tai Chi for Health* projects.
Expand the role of medical and health care professionals in screening, educating, and referring older adults to fall prevention programs.	**Progress Made**	✓	IPCS participated with partners in annual campaign for fall prevention awareness working with physical therapists and pharmacists.

MOTORCYCLE

RECOMMENDATIONS	STATUS*	CURRENT EFFORT**	COMMENTS
Advocate for a mandatory universal helmet use law.	**Progress Made**	✓	IPCS continues to work on this through Strategic Highway Safety Plan committee.
Enhance and expand training of county police officers to recognize impaired motorcyclists.	**On Hold**		IPCS not currently involved.

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MOTOR VEHICLE OCCUPANT

RECOMMENDATIONS	STATUS*	CURRENT EFFORT**	COMMENTS
Increase "high visibility enforcement efforts" of traffic safety laws and publicity of those efforts as a combined strategy.	**Progress Made**	✓	IPCS works with DOT Safe Communities Offices to distribute "Click It or Ticket" annual campaign materials to traffic safety partners.
Develop a statewide task force for traffic safety advocacy.	**Objective Met**		The Strategic Highway Safety Plan (SHSP) was developed. See partner list in Traffic Safety chapter.
***Support a statewide task force for traffic safety advocacy.	**Progress Made**	✓	IPCS involved in on-going SHSP implementation of efforts.
Advocate for a Graduated Driver's License System for Hawaiï.	**Objective Met**		Act 72 (2005) established a 3-stage graduated driver licensing program for persons under the age of 18. Department of Health and Department of Transportation were required to conduct yearly evaluations.
***Evaluate the Graduate Driver's License System for Hawai'i.	**Objective Met**		IPCS completed evaluations from 2007-2010, when the law became permanent
***Reduce impaired driving.	**Progress Made**	✓	Ignition interlock bill was passed in 2008 and became effective in 2010. IPCS continues to be involved, specifically in evaluating of the law.

PEDESTRIAN

RECOMMENDATIONS	STATUS*	CURRENT EFFORT**	COMMENTS
Maintain and upgrade existing crosswalks and walkways; develop new crosswalks and walkways based on pedestrian safety factors such as location and condition.	**Progress Made**	✓	IPCS has on-going involvement with pedestrian and bicycle safety efforts. Since 2005, Complete Streets state legislation and an O'ahu Complete Streets ordinance have passed.
Conduct a media awareness campaign aimed at changing attitudes and behaviors of drivers and pedestrians to improve road sharing.	**Progress Made**		"No Get Hurt" TV PSA includes pedestrian safety.
Incorporate pedestrian safety in the health education standards of the Department of Education's K-12 curriculum.	**Progress Made**		The Hawai'i Health standards-based unintentional injury curriculum, which includes pedestrian safety, was developed for public elementary schools.

Appendix A: Hawai'i Injury Prevention Plan 2005-2010 Status Report

UNINTENTIONAL POISONING

RECOMMENDATIONS	STATUS*	CURRENT EFFORT**	COMMENTS
Through legislation, improve labeling on prescription drugs to include: ▸ Diagnosis and instructions to patients ▸ Physical description	**On Hold**		IPCS worked with community partner on analyses of unintentional poisoning of prescription narcotics which may have implications on future legislation.
Expand age-appropriate education efforts in poison prevention.	**Progress Made**		Keiki Injury Prevention Coalition (KIPC) distributed poisoning prevention materials across the state. "No Get Hurt" poisoning prevention poster distributed through DOH.
Maximize use of the 24-hour Hawai'i Poison Hotline for poison AND medication/ drug information.	**Progress Made**	✓	Distribution of poisoning prevention materials included information on the Hawaii Poison Hotline.

SUICIDE

RECOMMENDATIONS	STATUS*	CURRENT EFFORT**	COMMENTS
Develop and implement suicide prevention training for "gatekeepers."	**Objective Met**		Gatekeepers were trained from all counties. IPCS coordinated workshops statewide. As of 2012, there are 37 ASIST (Applied Suicide Intervention Skills Training) trainers and more than 2,500 gatekeepers trained.
***Maintain and evaluate suicide prevention training for "gatekeepers."	**Progress Made**	✓	IPCS evaluated gatekeeper trainings and worked with partners to develop a sustainability plan for suicide prevention training efforts.
Launch a public awareness campaign.	**Progress Made**	✓	IPCS worked with Visionary Related Entertainment (VRE) Hawai'i to develop a radio spot in 2009. The "No Get Hurt" TV PSA aired on Olelo in 2009, and the "No Get Hurt" suicide prevention posters were distributed statewide. IPCS coordinated two statewide suicide prevention conferences and co-sponsored "Survivors of Suicide" conferences with Hawai'i SPEAR (Suicide Prevention Education Awareness Research).
Promote and support research on suicide and suicide prevention.	**Progress Made**		IPCS evaluated gatekeeper training.
Develop and promote effective clinical and professional practices and policies.	**Progress Made**	✓	The Prevent Suicide Hawai'i Task Force (PSHTF) and IPCS coordinated conferences for clinicians and professionals.

Appendix A: Hawai'i Injury Prevention Plan 2005-2010 Status Report

VIOLENCE AND ABUSE			
RECOMMENDATIONS	**STATUS***	**CURRENT EFFORT****	**COMMENTS**
Promote and support the development of "full-service" schools.	**On Hold**		IPCS not currently involved.
Identify approaches used in local and national programs that effectively reduce community violence.	**Progress Made**		The Asian/Pacific Islander Youth Violence Prevention Center worked on this recommendation. This Center is represented on IPAC.
Conduct research to better understand violence in Hawai'i.	**Progress Made**		The Asian/Pacific Islander Youth Violence Prevention Center worked on this recommendation. This Center is represented on IPAC.

HIPP 2005-2010 was revised in 2009 to include additional recommendations in traffic and suicide that reflect on-going efforts. These are noted with ***

*Objective met – IPCS and partners completed the recommendation

Progress made – IPCS and partners accomplished a portion of the recommendation

On-Hold – IPCS was unable to make progress on recommendation due to a lack of resources (time, personnel, etc) or other reasons

** Current Efforts – a check mark in this column reflects on-going efforts.

Appendix B: Data Sources and Methods

With the exception of the chapter on drowning, the data presented in this plan refers only to injury among residents of Hawai'i. This is consistent with national reporting conventions of injury mortality and allows for the comparison of fatal injury rates in Hawai'i with rates for the remainder of the country. Also, other population estimates (e.g. age, ethnicity, county, etc.) were available only for residents, so the inclusion of injuries among non-residents would result in an over-estimation of injury rates. The exclusion of non-residents reduces the amount of fatal injuries by about 9%, hospitalizations by 9%, and emergency department visits by 9%. (Non-residents comprised 47% of the drowning victims in Hawai'i, so they are included in some of the data in the drowning section.)

The calculation of injury mortality rates necessitates the definition of "at risk" populations for the denominator. This data was obtained from the web site for the U.S. Census Bureau (2012). Rate estimates used the average annual population estimate over the 2007 to 2010, since 2011 estimates were not available when preparation of this report began.

The primary source of injury mortality data in Hawai'i is the death certificate database of the Hawai'i Department of Health. The ICD-10 underlying cause of death codes were grouped as recommended by the Centers for Disease Control and Prevention, with some exceptions (CDC, 2002). For some types of injuries, the open text information on how the injury occurred was reviewed to extract information not captured by the cause of death code. Supplemental data was also used for certain injury categories. Data from the Fatal Analysis Reporting System (FARS) of the National Highway Traffic Safety Administration (NHTSA) was linked to death certificate data for deaths from traffic crashes (NHTSA, n.d.). Supplemental data on homicides was abstracted from the Uniform Crime Reports (UCR), maintained by the National Archive of Criminal Justice data (2010). The autopsy records of O'ahu suicide and drowning victims were also reviewed for the 2007 to 2010 period.

The main source of data on nonfatal injuries was the Hawai'i Health Information Corporation (HHIC), which receives abstracted data from the medical records of patients treated in all hospital-based emergency departments (EDs) and hospitals in the state, with the exception of ED records from Tripler Army Medical Center. A record was defined as injury-related if the principle diagnosis was within the ICD-9CM series 800-995.85, with the following exclusions: 909.3, 909.5, 995.0-995.4, 995.6-995.7 (Injury Surveillance Workgroup, 2003). Patients who died in the hospitals or who were discharged to hospice facilities were excluded from these analyses. To prevent double-counting of injuries, patients who were transferred to another hospital at discharge were excluded. Injuries resulting from "adverse effects", as indicated by external cause of injury codes (E-codes) were also excluded (CDC, 2007). E-codes were used to group nonfatal injuries into mechanisms that corresponded to the groupings for fatal injuries (CDC, 2007). In this report, all nonfatal self-inflicted injuries are described as "suicide attempts", although this is not actually discernible through E-codes. This may have resulted in an overestimation of suicide attempts, but it is also possible that self-inflicted injuries in general are underreported.

It is important to note that the extent of E-coding varied across the counties patients reside in, and over time within those counties. The records for residents of Neighbor Islands were significantly more likely to have E-codes than records for residents of Honolulu County (on average 97.4% vs. 87.5%, respectively). There were also decreasing trends in the proportion of inpatient records with E-codes for all counties except Maui, although these were most meaningful for O'ahu hospitals. These variations in E-coding need to be considered when interpreting comparisons between counties and examining trends within a county

over time. Most statistics in this report are based only on E-coded records, and therefore underestimate the real magnitude of injuries by about 9% for both those treated at EDs and for those injuries requiring hospitalizations. There was some inconsistency in the contribution to the HHIC database from certain individual hospitals. One Oʻahu hospital began contributing ED records in November, 2008, although this hospital accounted for only 1.4% of ED records. Two other Oʻahu hospitals closed operations in mid-December of 2011.

EMS data is included in certain chapters (motor vehicle crashes, falls and assaults) for which there were discreet injury codes in the EMS data collection system. EMS personnel document the use of protective equipment (seat belts and helmets) and the approximate time and location of the injury, elements which are lacking from the more population-based HHIC data. Patient use of alcohol and drugs is also noted in EMS data, either by patient admission, the smell of alcohol on the breath, or physical evidence (e.g. bottles, drug paraphernalia, etc.) at the scene. However, since use of "drugs" is not specific, only the EMS characterization of patient alcohol use is examined. To avoid double-counting of individual patients, those who were transferred to another EMS unit were excluded from analyses. Patients who refused transport to hospitals (or released at the scene) and those who were dead upon EMS arrival or who died while in EMS care were included, however, to provide a full description of the effects of protective factors or alcohol use.

A grant from the Hawaiʻi Department of Transportation (DOT) enabled the linkage of 2007 EMS records related to motor vehicle crashes to DOT, HHIC, and FARS, and death certificate records. EMS records were linked to DOT, FARS and death certificate records probabilistically, on the basis of time, date, and location of the crash, and patient age, gender and seating position. This product was then linked to HHIC records by deterministic methods using patient identifiers, including name and date of birth. This linked dataset provided examination of the effect of protective devices (as described by EMS, DOT and FARS) with the ultimate medical disposition of the patients (as described by HHIC records and death certificates).

More complete and test-based results of toxicology were available from the Hawaiʻi Trauma Registry (HTR). The HTR includes data from the 7 main trauma centers in the state. Data was available for the 2008 to 2011 period, but 6 of the trauma centers did not begin contributing data until 2009. HTR data was included to provide a description of substance use among patients who had nonfatal (although serious) injuries from a variety of mechanisms. To avoid double-counting, the results of HTR patients who were transferred at discharge were excluded. Patients who died, either in the ED or after hospitalization, were included, to examine associations between substance use and mortality for injuries where these relationships are not better described through other data systems (e.g. motor vehicle deaths and FARS).

Most of the injury rates have been standardized for age distribution, by the direct method, using the U.S. 2000 standard population (Anderson & Rosenberg, 1998). Sixteen age groups were used for standardization across all ages, although certain calculations were restricted to more narrow age ranges. Statistical tests were conducted with t-tests for continuously distributed variables (e.g. patient age) and chi-squared tests for categorical variables (e.g. patient gender). Some trends (described as "significant" or "non-significant") were formally assessed using Poisson regression (Clayton & Hills, 1993). Rate differences were tested using different techniques, depending on sample size and use of age standardization (Dever, 1984). All statistical significance testing was conducted at the 95% confidence level.

Appendix C: Acronyms

ADRC – Adult Disability Resources Centers

ASIST – Applied Suicide Intervention Skills Training

BRFSS – Behavioral Risk Factor Surveillance System

CDC – Centers for Disease Control and Prevention

CHOW Project – Community Health Outreach Work to Prevent AIDS project

DOH – Hawai'i State Department of Health

DPS – Department of Public Safety

DOT – Hawai'i State Department of Transportation

DUI – Driving under the influence (alcohol or drugs)

E-code – External cause of injury codes within the ICD-9 system

ED – Emergency Department

EMS – Emergency Medical Services

EMSIPSB – Emergency Medical Services and Injury Prevention Systems Branch, within DOH

FARS – Fatal Analysis Reporting System

GDL – Graduated Driver's Licensing

HACDAC –Hawai'i Advisory Commission on Drug Abuse and Controlled Substances

HEMSIS – Hawai'i Emergency Medical Services Information System

HHIC – Hawai'i Health Information Corporation

HIPP – Hawai'i Injury Prevention Plan

HMSA – Hawai'i Medical Service Association (Hawai'i's Blue Cross Blue Shield)

ICD-9-CM – International Classification of Diseases, 9th Revision, Clinical Modifications

ICD-10 – International Classification of Diseases, 10th Revision

IOM – Institute of Medicine

IPAC – Injury Prevention Advisory Committee

IPCS – Injury Prevention and Control Section, within DOH EMSIPS Branch

KIPC – Keiki (childhood) Injury Prevention Coalition

LGBT – Lesbian, Gay, Bisexual and Transgendered

MCHB – Maternal and Child Health Branch, within DOH

NHTSA – National Highway Traffic Safety Administration

PDMP – Prescription Drug Monitoring Program

PSHTF – Prevent Suicide Hawai'i Task Force

SAMHSA – Substance Abuse and Mental Health Services Administration

STD/AIDS – STD/AIDS Prevention Branch, within DOH

WIC – Women, Infant and Children Services Branch, within DOH

YRBSS – Youth Risk Behavior Surveillance System

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The New Spectrum of Prevention: Guiding Injury Prevention in Hawai'i

The Spectrum of Prevention is a broad framework that outlines seven levels of intervention, or strategies, intended to address complex public health problems. These strategies account for the various factors that contribute to community health and safety and can be used to develop a comprehensive approach to address public health concerns.

Influencing Policy and Legislation

Legislation and policy initiatives affect large numbers of people by improving their environments, encouraging healthy lifestyles, and providing for consumer protections.

Mobilizing Neighborhoods and Communities

Engaging neighborhoods and communities in the process of identifying, prioritizing and addressing public health concerns leads to more accepted and successful community interventions.

Changing Organizational Practices

Modifying internal policies and practices of agencies and organizations can lead to improved health and safety for staff and clients and contribute to a healthier community. Changing practices in some agencies (e.g., law enforcement, schools) may also affect community health.

Fostering Coalitions and Networks

Coalitions and networks that represent local government, public health, private and nonprofit organizations, health care, and the community provide an opportunity for collaborative planning, coordinated use of resources, and strong support of legislation and organizational change.

Educating Providers

Educated providers, in and out of the health field, play an important role by identifying injury prevention issues and intervening as needed. Providers may encourage adoption of injury prevention behaviors, offer education, and advocate for legislation and organizational change.

Promoting Community Education

Community education uses different communication channels to reach as many people as possible with health education messages. These messages aim to change behaviors and build a critical mass of people who will become engaged in the issue.

Strengthening Individual Knowledge and Skills

Health educators and trained community members work directly with individuals to promote health and safety. Attention may be given to building individuals' capacity to use new approaches, educate others, or become more engaged in advocacy.

Source:
The original Spectrum of Prevention was developed by Larry Cohen based on the work of Dr. Marshall Swift. The Contra Costa Health Services Public Health Division, Community Wellness & Prevention Program later added the strategy Mobilizing Neighborhoods and Communities and renamed the framework The New Spectrum of Prevention: A Model for Public Health Practice.

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