

Overview of injuries among seniors in Hawaii

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Leading causes of injury among Hawaii senior-aged residents, by severity, 2009-2013

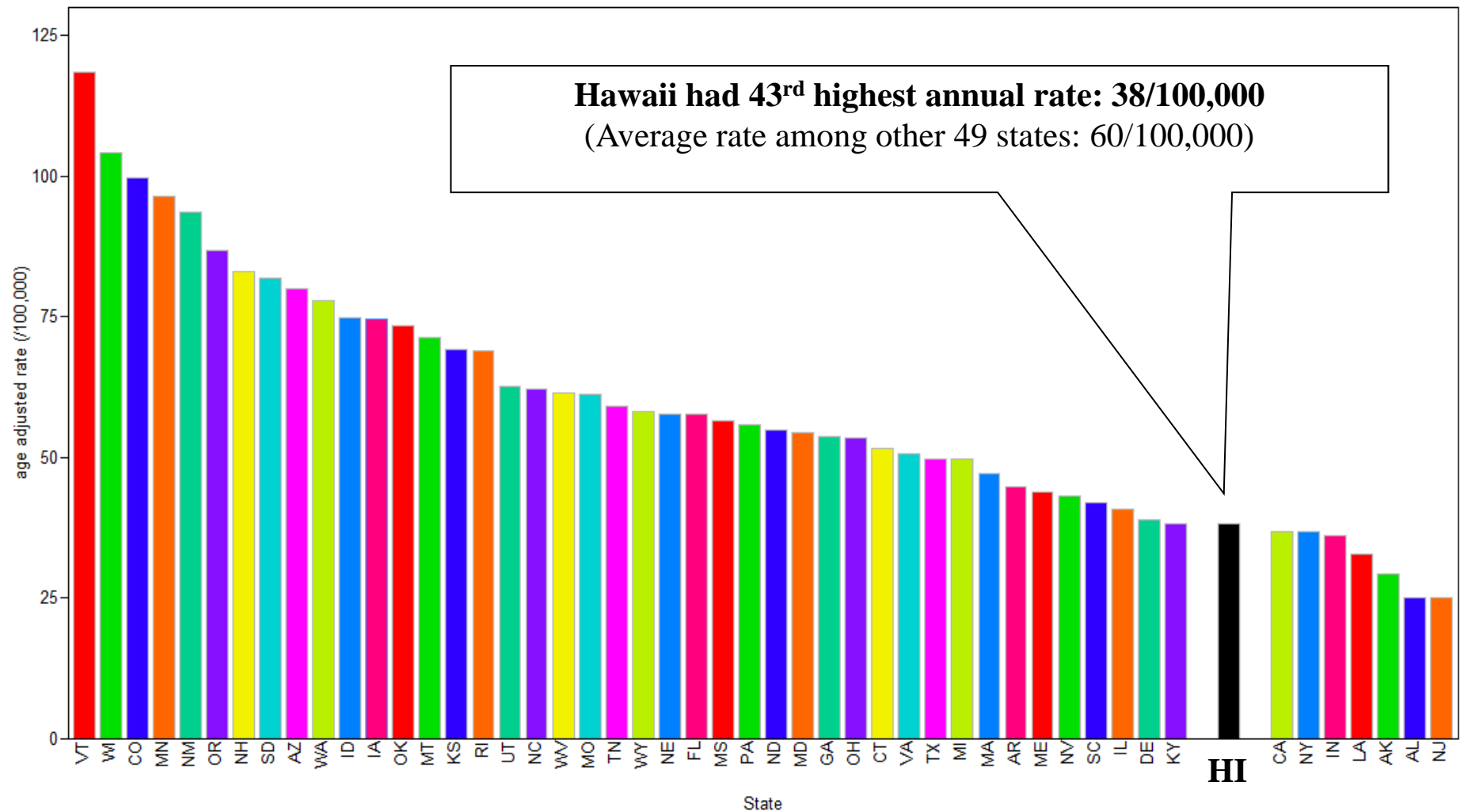
Rank	Fatal injuries	Nonfatal hospitalizations	Nonfatal emergency dept. visits
1	falls 86 (45%)	falls 1912 (83%)	falls 6,012 (61%)
2	suicide 24 (12%)	mvc-occupant 64 (3%)	struck by or against 773 (8%)
3	suffocation 20 (11%)	poisoning 54 (2%)	cut/pierce 626 (6%)
4	mvc-pedestrian 10 (5%)	struck by or against 41 (2%)	overexertion 391 (4%)
5	mvc-occupant 7 (3%)	mvc-pedestrian 35 (2%)	natural/environmental 377 (4%)
6	drowning 5 (3%)	overexertion 26 (1%)	mvc-occupant 366 (4%)
7	poisoning 5 (3%)	suicide 23 (1%)	poisoning 83 (1%)
8	mvc-motorcyclist 3 (2%)	mvc-motorcyclist 15 (1%)	assault 70 (1%)
9	assault 3 (1%)	assault 12 (1%)	mvc-pedestrian 57 (1%)
10	fire/burn 3 (1%)	bicycle crash 10 (0%)	fire/burn 57 (1%)
	all other 25 (13%)	all other 112 (5%)	all other 971 (10%)
Total	190	2,489*	10,632*

*Includes injuries with no information on cause

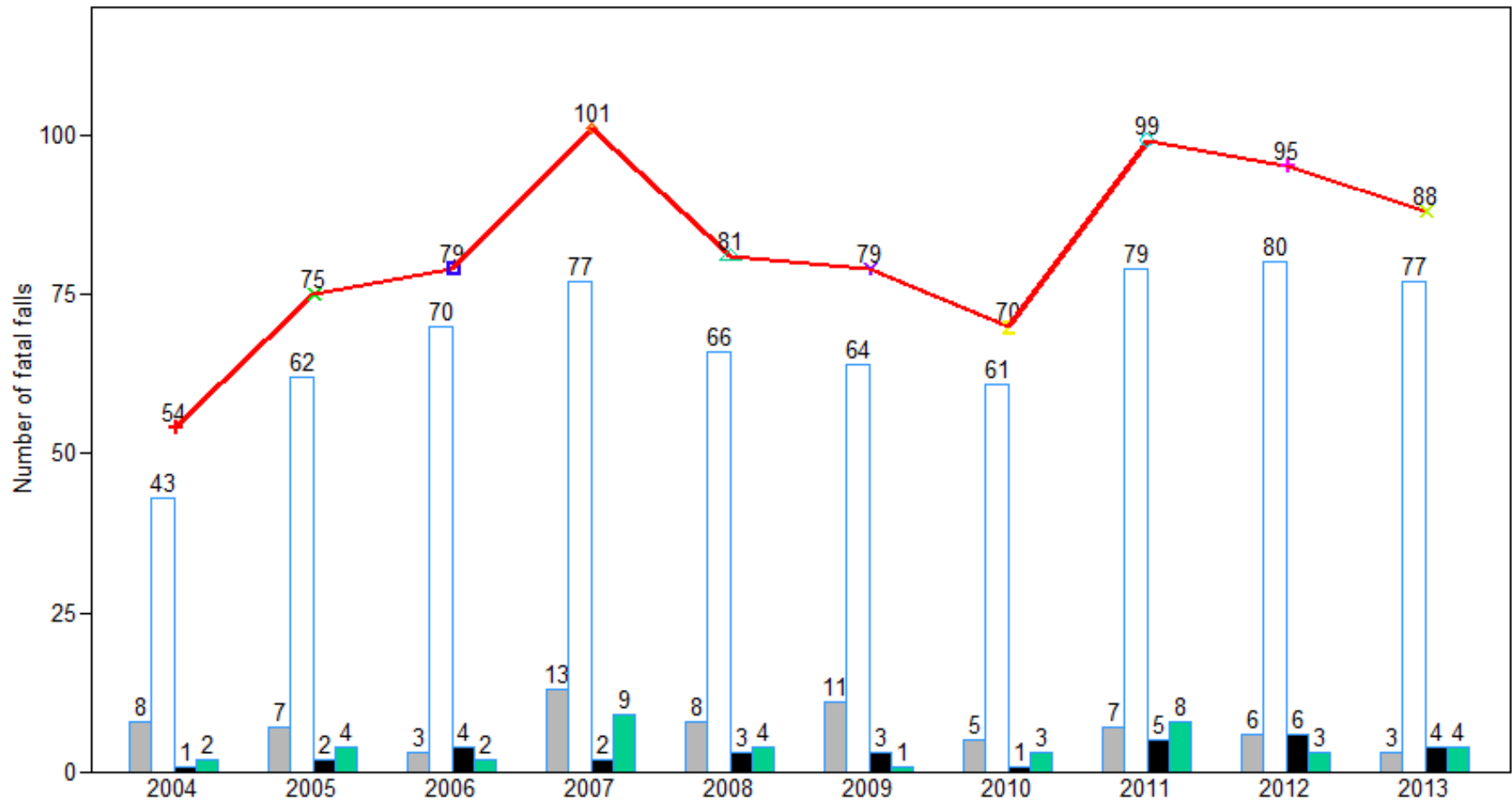
Importance of falls: *Falls among seniors in Hawaii are...*

- The **3rd leading** cause of fatal injuries for residents of all ages (13%)
 - The **leading** cause of fatal injuries among seniors (45%)
- The **leading** cause of injury-related hospitalizations for all ages (36%)
 - The **leading** cause of injury hospitalizations among seniors (83%)
- The **leading** cause of hospitalizations for TBI for all ages (38%)
 - The **leading** cause of hospitalizations for TBI among seniors (87%)
- The **5th leading** cause of injury-related ED visits for all ages (8%)
 - The **leading** cause of injury ED visits among seniors (61%)
- The **leading** cause of injury-related EMS calls (24%)
 - The **leading** cause of injury-related EMS calls among seniors (81%)

Age-adjusted annual fatality rates for falls among seniors, by state, 2009-2013

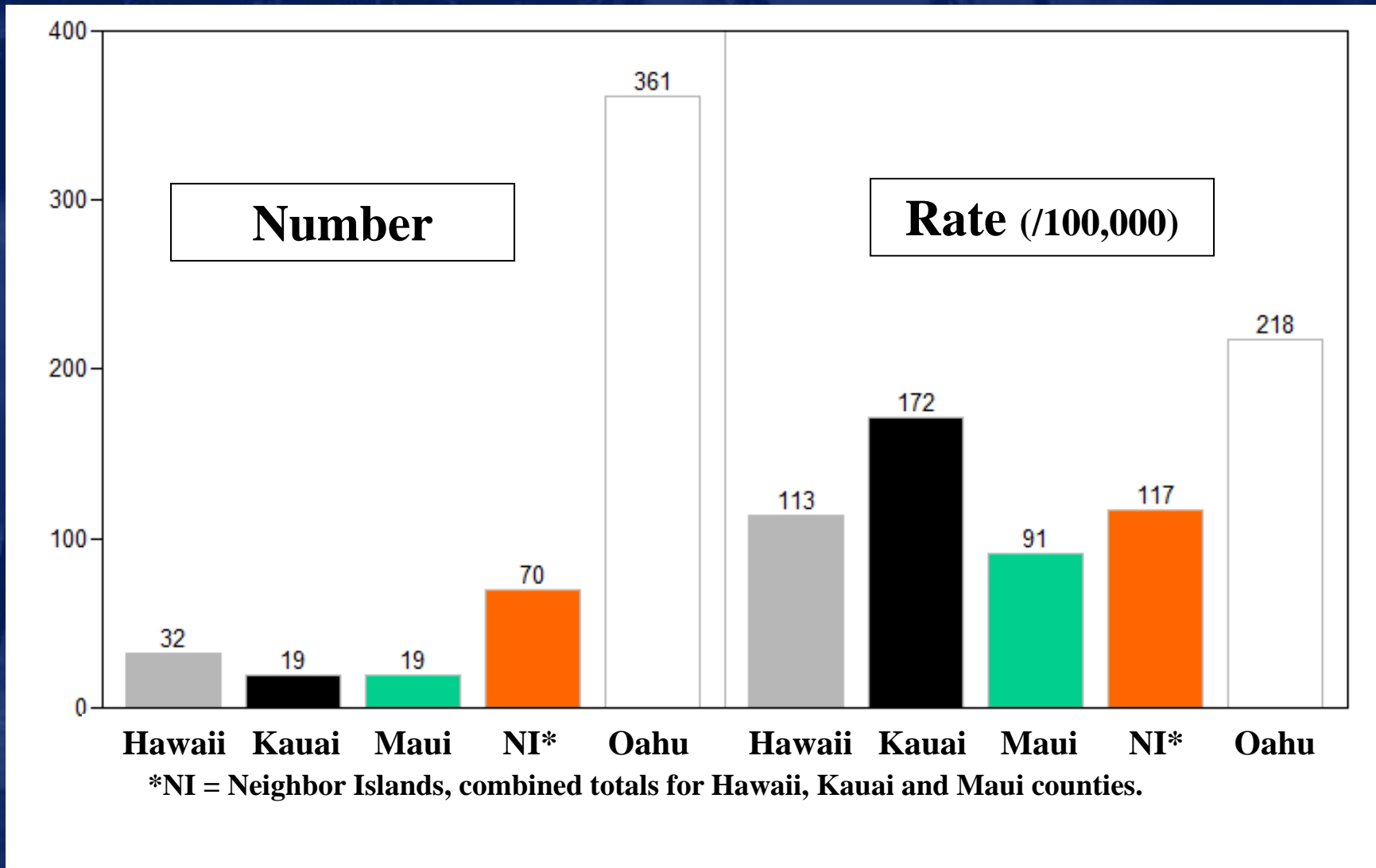


Annual number of fatal falls among senior residents of Hawaii, by county of residence, 2004-2013

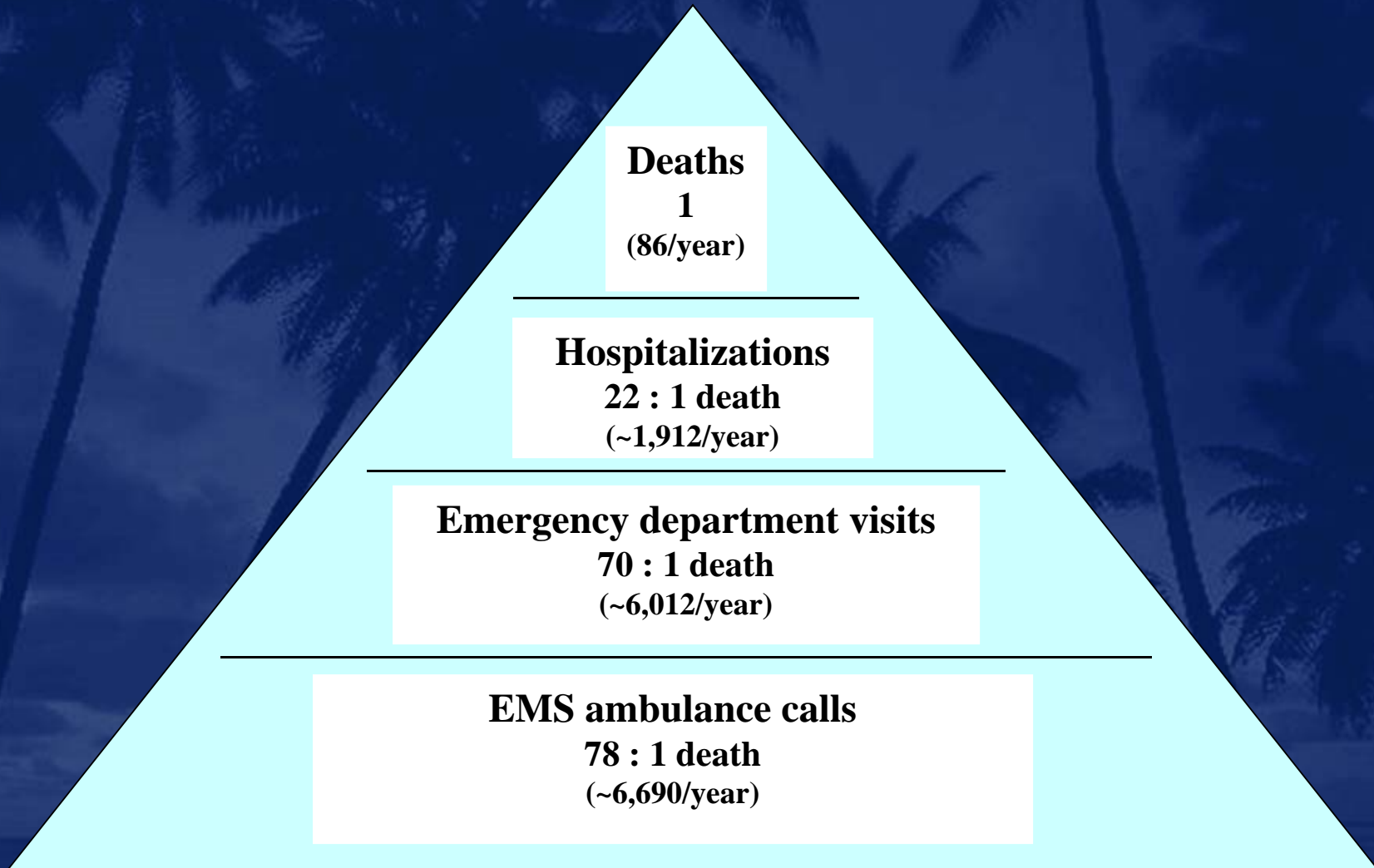


— state
 Hawaii (71, 9%)
 Honolulu (679, 83%)
 Kauai (31, 4%)
 Maui (40, 5%)

Five-year number and rate of fatal falls among senior-aged residents in Hawaii, by county of injury, 2009-2013



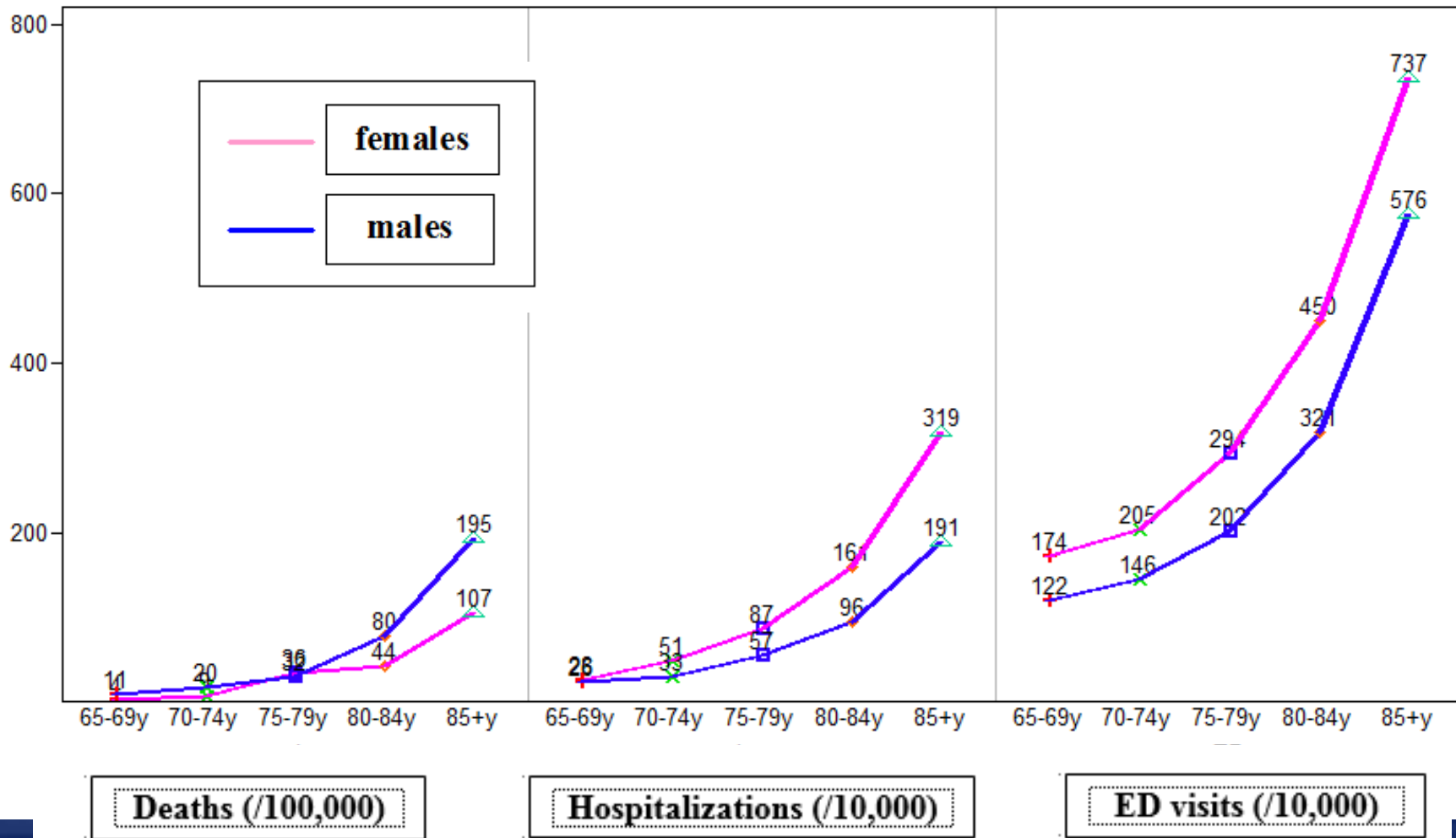
The “injury pyramid” for falls among senior residents of Hawaii, 2009-2013



Non-fatal injuries from falls among senior residents in Hawaii, 2009-2013

- **Over 7,924 E-coded non-fatal injuries from falls per year (~9,150 actual?)**
 - **Most injuries (75%) treated in EDs**
 - **Increasing trend in ED visits: 5,604 in 2009 → 6,860 in 2013 (22% increase)**
 - **Smaller trend in hospitalizations 1,856 in 2008 → 1,965 in 2012-2013 (6% inc.)**
- **Number and rate increases with age**
 - **More than one-third (39%) of patients were 85 years or older**
 - **Nearly half (47%) of those hospitalized were 85 years or older**
 - **Rates among 85+ year-olds are 5 times (ED visits) to 10 times (hospitalizations) higher than rates among 65-69 year-olds**
- **Mostly (67%) female**
 - **Females have significantly higher rates at almost every age group**
 - **Different from fatal falls**
- **Geographic location**
 - **Highest rates of ED visits for Kauai County**
 - **Lowest rates for Maui County residents**

Rates of injuries from falls among senior residents of Hawaii, by gender and level of severity, 2009-2013



Non-fatal injuries from falls among senior residents in Hawaii, 2009-2013

- **The causes of falls were mostly vague or unknown**
 - ~83% coded as “falls on same level” (38%), or “other/unspecified”
 - Falls from stairs/steps and beds most commonly specified (~5%)

	ED visits	Hospitalizations	Total
<i>Length of stay and medical charges</i>			
Patient days	6,012	12,343 (6 days/patient)	18,355
Average charge	\$2,606	\$33,725	\$10,115
Total charges	\$15.7 million	\$64.5 million	\$80.2 million
<i>Primary injury diagnoses</i>			
Fractures	23%	74%	35%
hip fractures	0.5%	40%	10%
Internal injuries	3%	21%	8%
Open wounds	21%	1%	16%
Contusions/superficial	29%	2%	22%
Traumatic brain injury	24%	24%	24%

Disposition of senior residents hospitalized for falls in Hawaii, 2009-2013

37% discharged home:

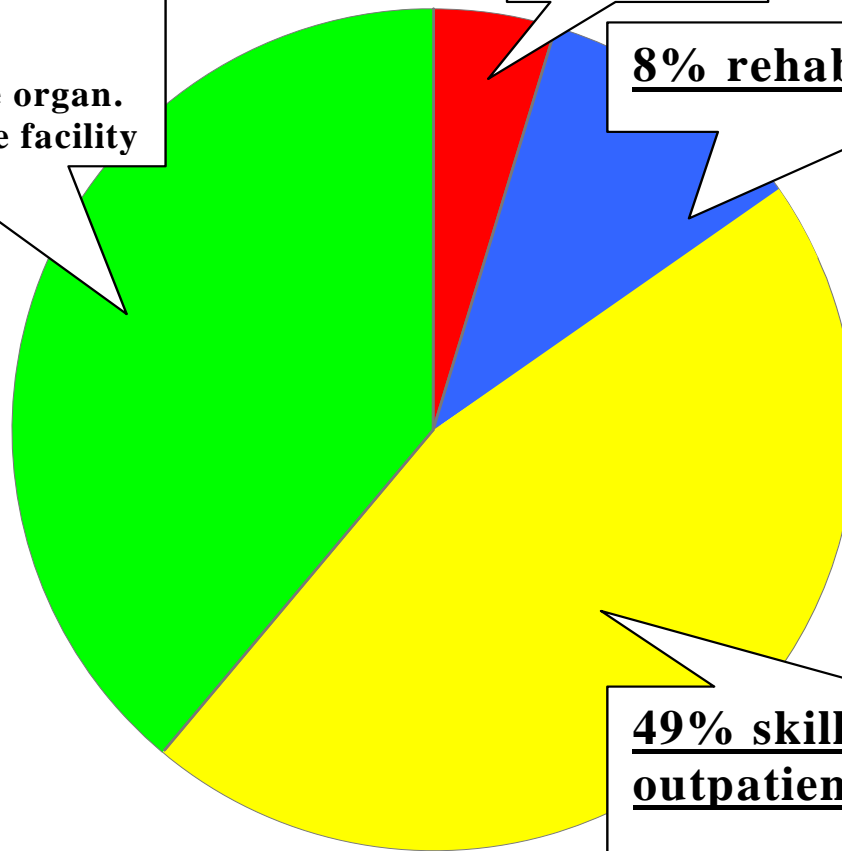
28% home/self care
8% home health care organ.
1% intermediate care facility

5% died

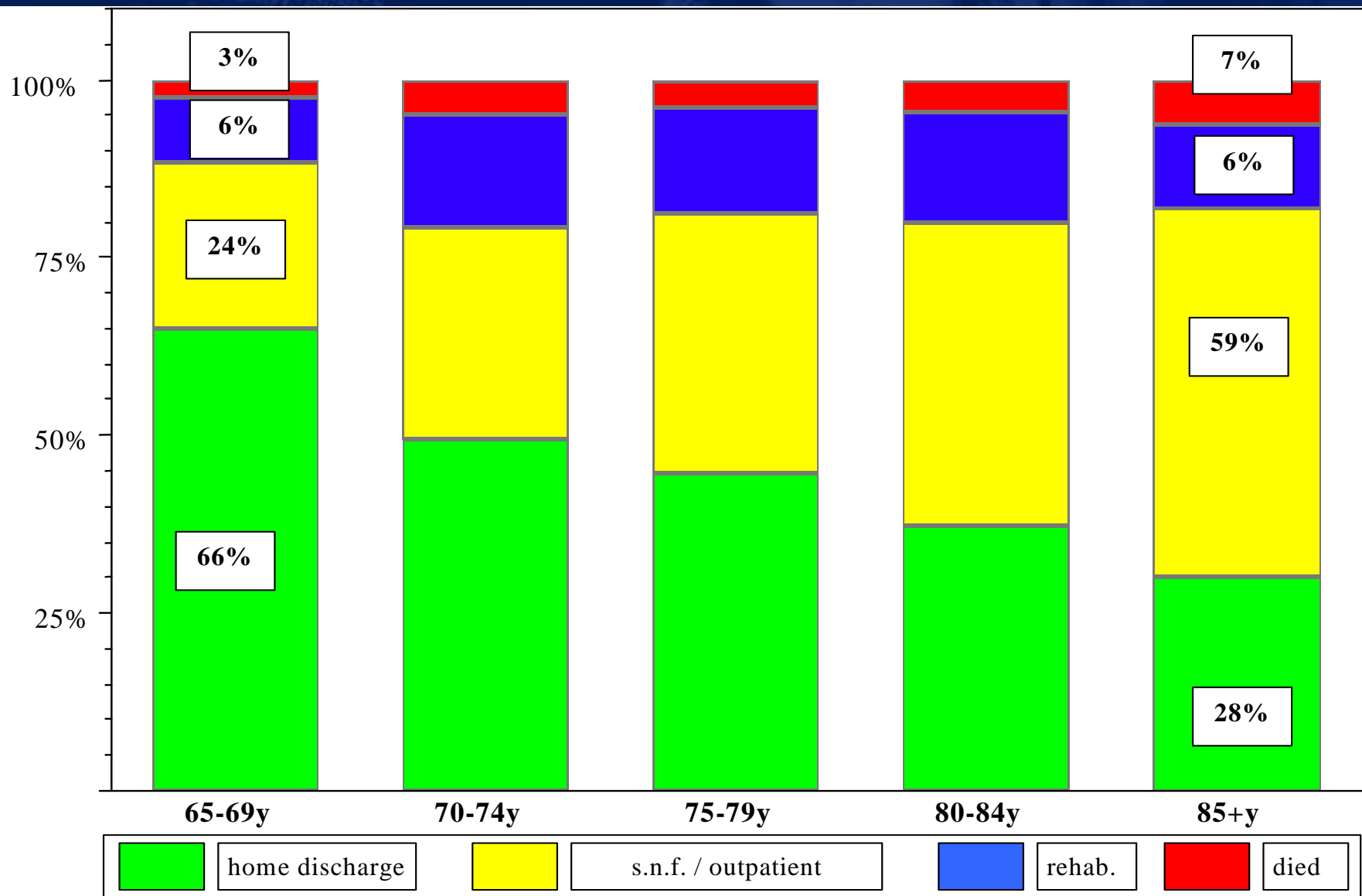
8% rehabilitation facility

49% skilled nursing /
outpatient. / transferred:

48% skilled nursing facility
1% another inst. or outpatient

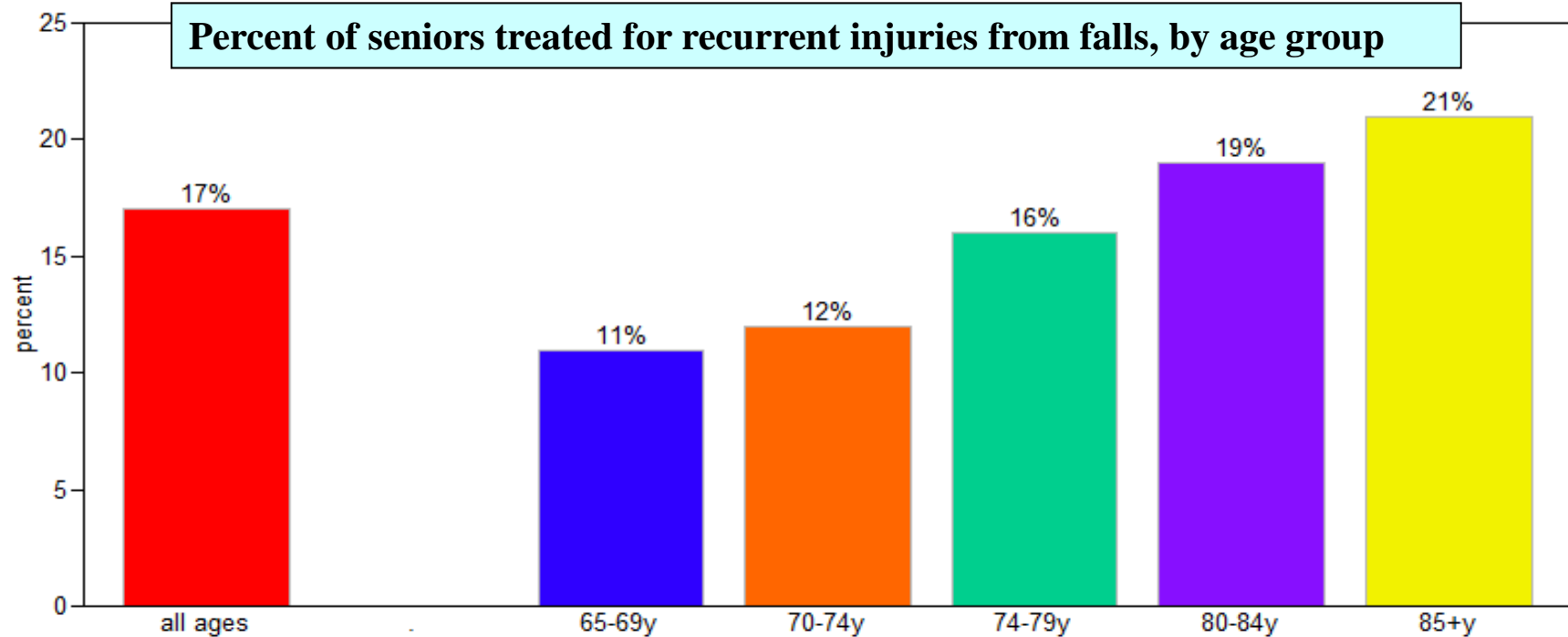


Disposition of senior residents hospitalized for falls in Hawaii, by age group, 2009-2013



Recurrences of injuries from falls among senior residents of Hawaii, 2009-2013

- About 17% of seniors treated for injuries from falls are treated for at least 1 additional fall-related injury
 - ~4% had 3 or more incidents
 - **only captures individuals treated at the same hospital*
 - *Recurrence more common among older patients:*



Data summary

Who? Risk increases greatly across senior age range.
Men have higher fatality rates, but women have higher rates of ED visits and hospitalizations.

Where? Highest numbers (~70%-85%) for Oahu residents, who also have significantly higher fatality rates
Highest ED rates for Kauai County, lowest for Maui County

GIS capability for EMS data, street level for Oahu

When? Mostly (71%) daylight hours; especially mid-day

Why? Poor information for fatalities and hospitalizations; probably multi-factorial causes (intrinsic and extrinsic factors).