

**Overview of Traumatic Brain Injury  
and Spinal Cord Injury  
among Hawaii residents.**

**-Dan Galanis**

*Injury Prevention and Control Program  
Hawaii Department of Health  
1250 Punchbowl St., Room 214  
Honolulu, HI 96813  
Ph: (808) 586-5943  
E-mail: [djgalani@mail.health.state.hi.us](mailto:djgalani@mail.health.state.hi.us)*

# Overview of Traumatic Brain Injury among Hawaii residents.

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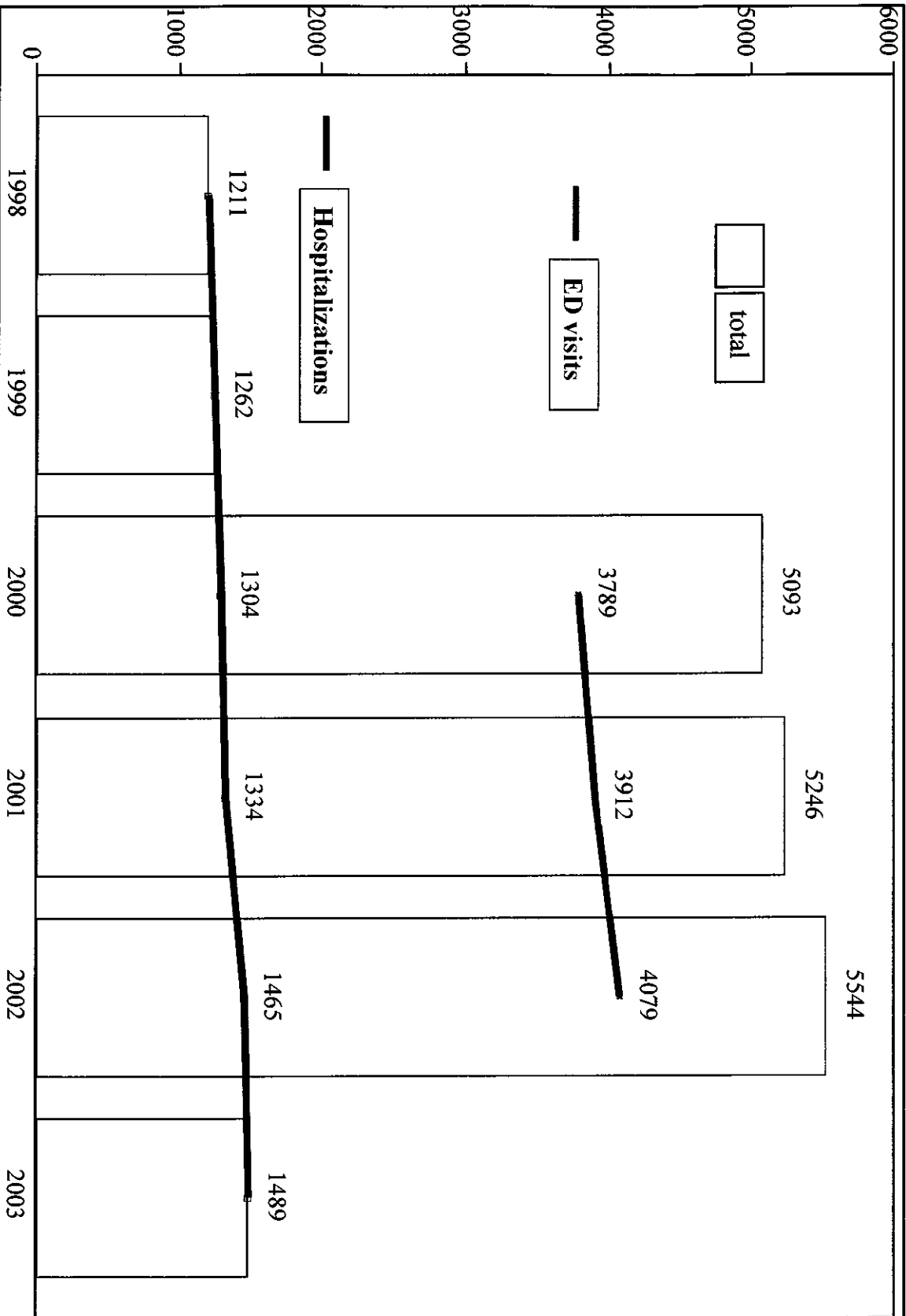
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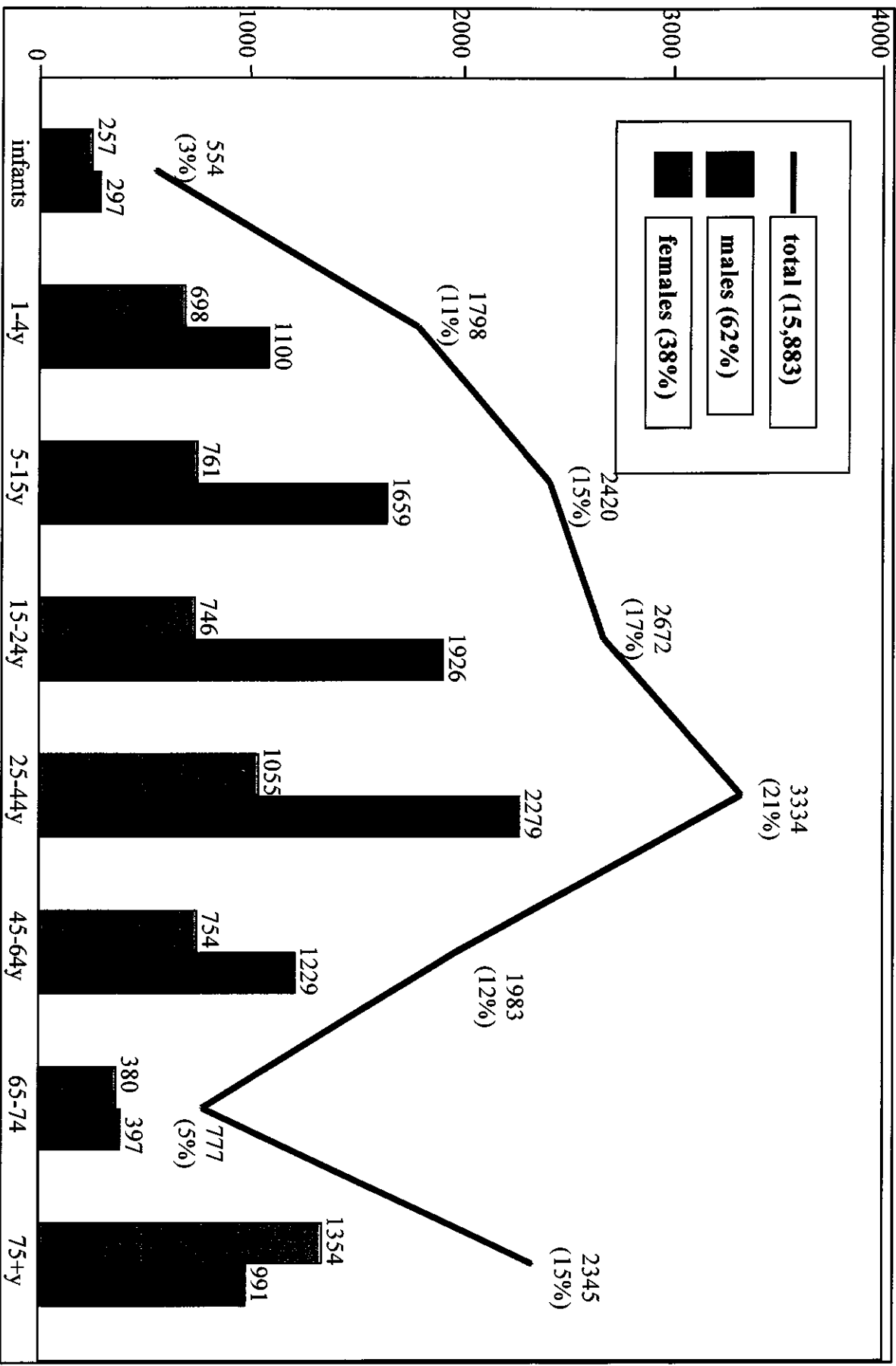
Emergency department visits and hospitalizations for  
Traumatic Brain Injury  
among Hawaii residents, 1998-2003.

- ***Defined by ICD-9CM codes:***
  - ***800.0-801.9, 803.0-804.9: fracture of the skull***
  - ***850.0-854.1: concussion, cerebral laceration and contusion, hemorrhage and other intracranial injury***
  - ***950.1-950.3: injury to optic nerve and pathways***
  - ***959.01: unspecified head injury***
  - ***995.55: shaken infant syndrome***

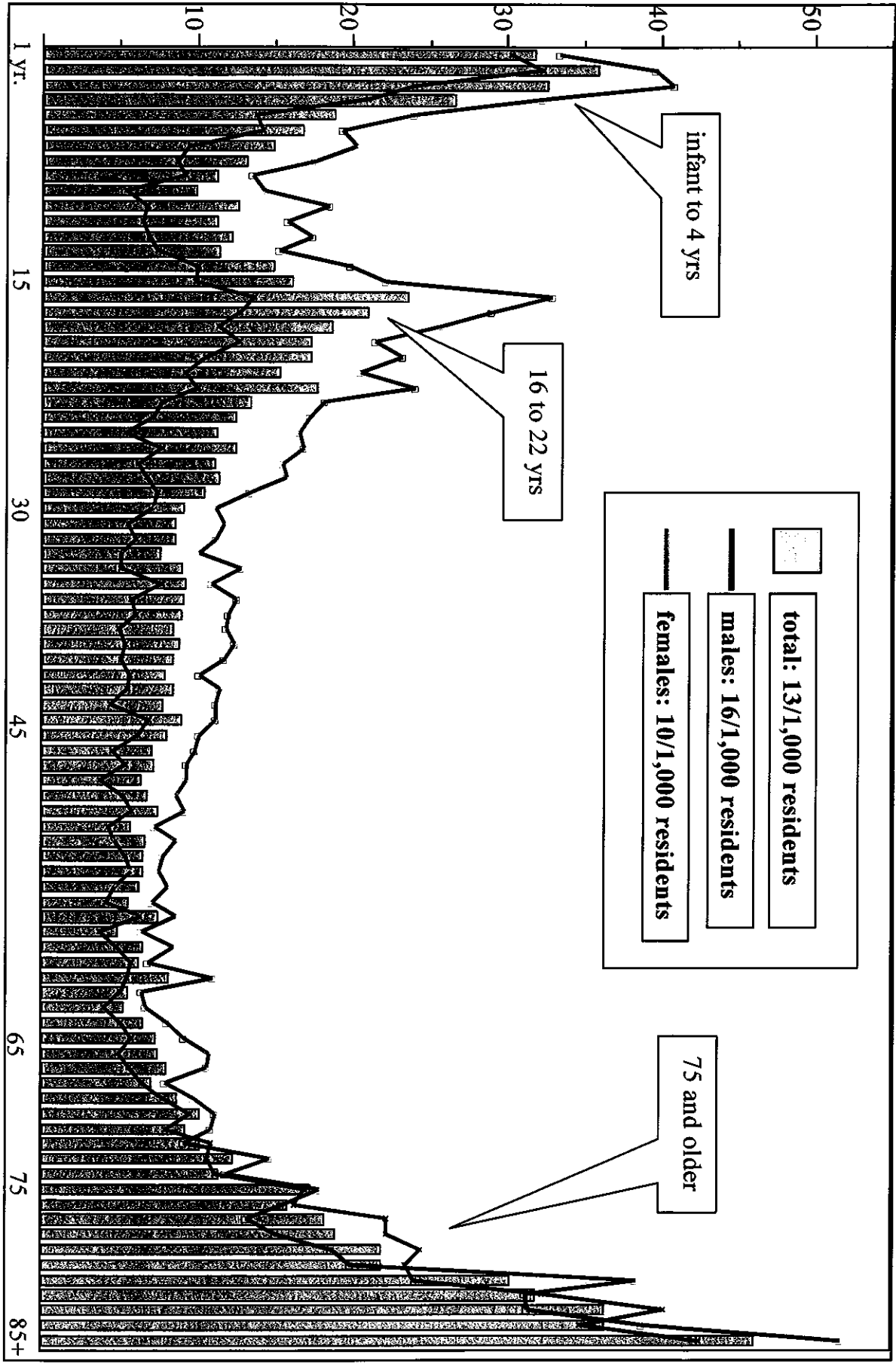
# Annual number of TBI cases among Hawaii residents, by level of health care, 1998-2003.



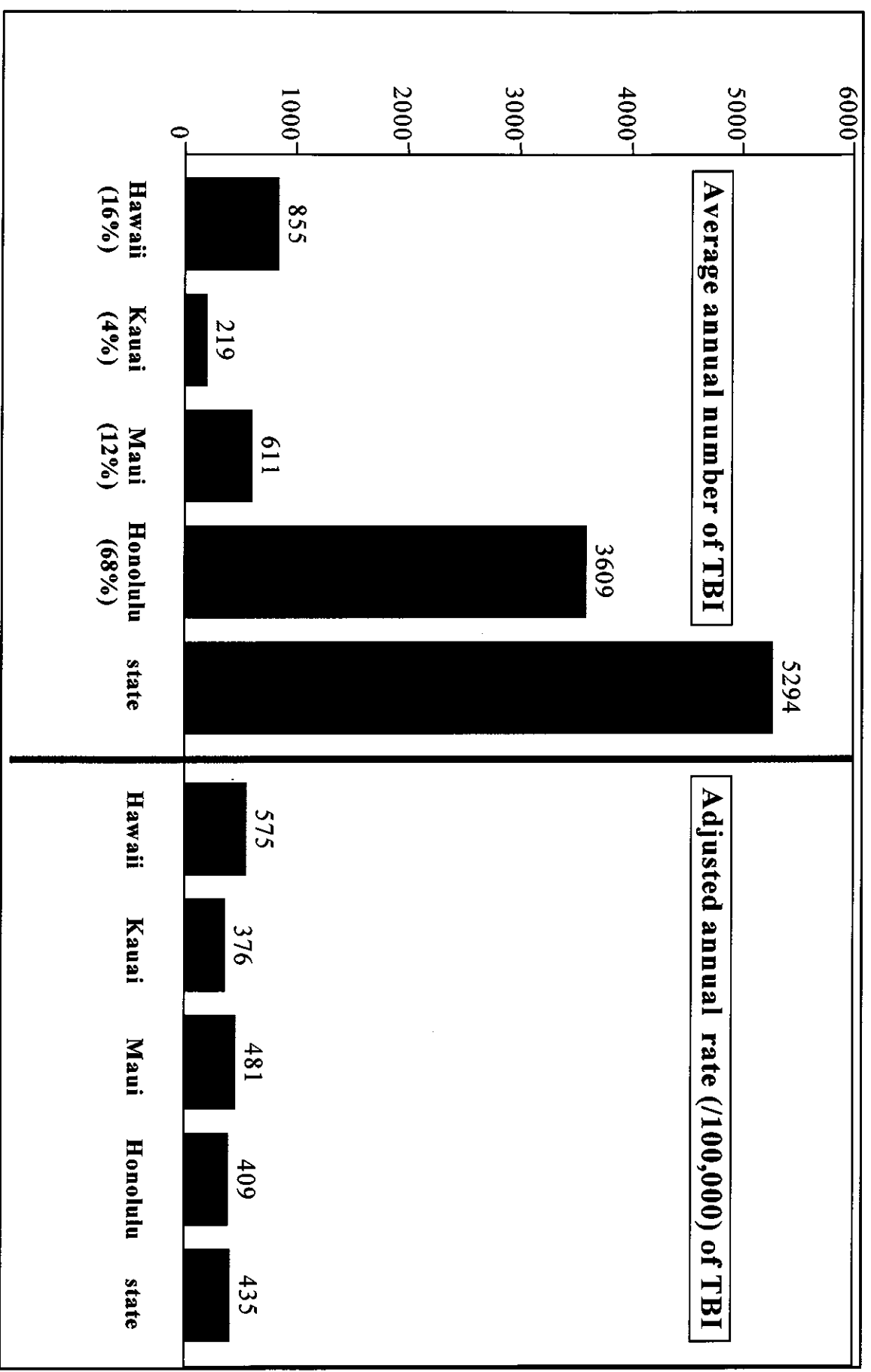
# Age and gender of TBI patients in Hawaii, 2000-2002.



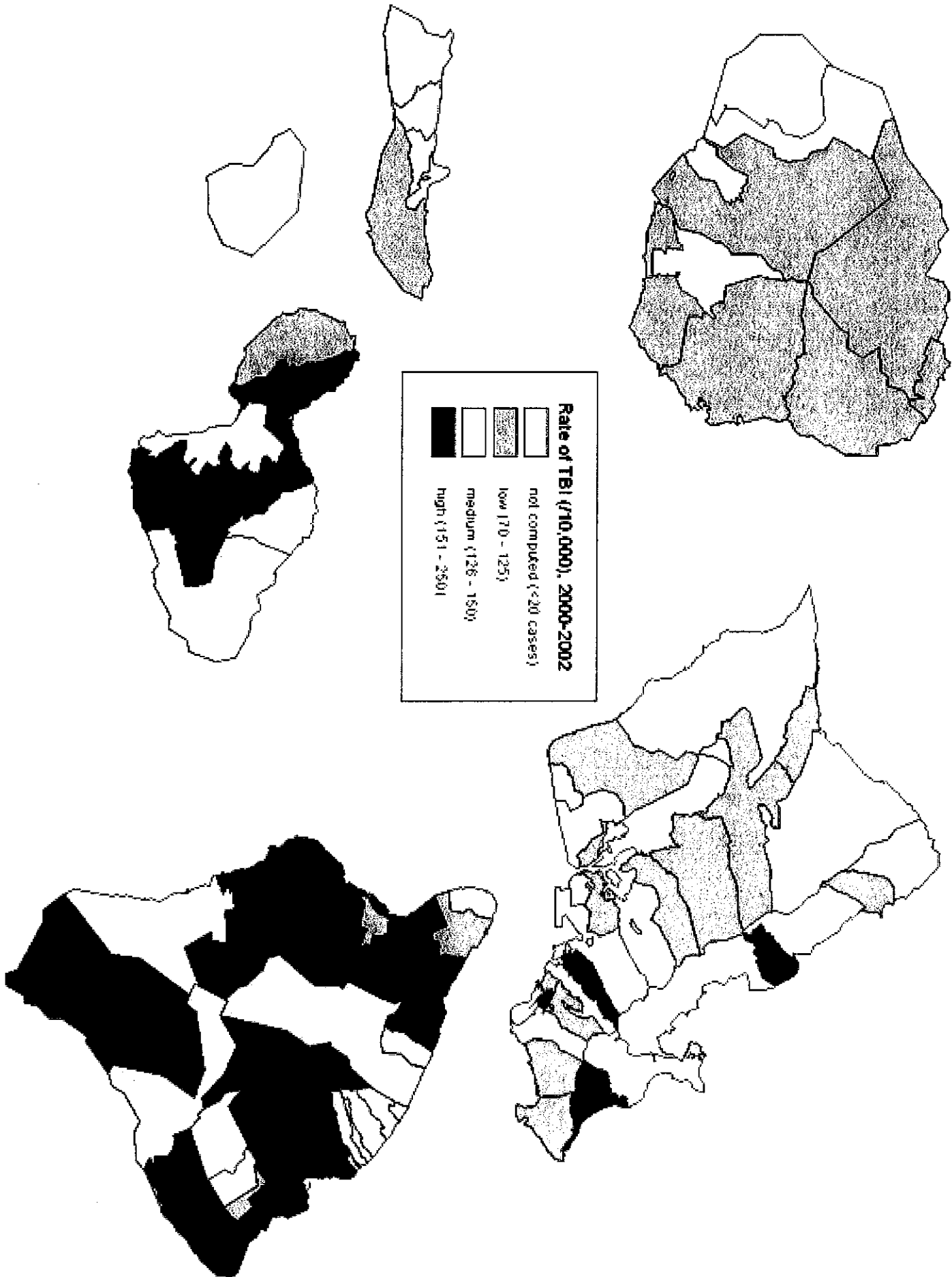
# Rates of TBI among Hawaii residents, by age and gender 2000-2002.



# Number (left side) and rate (right side) of TBI among Hawaii residents, by county of residence 2000-2002.



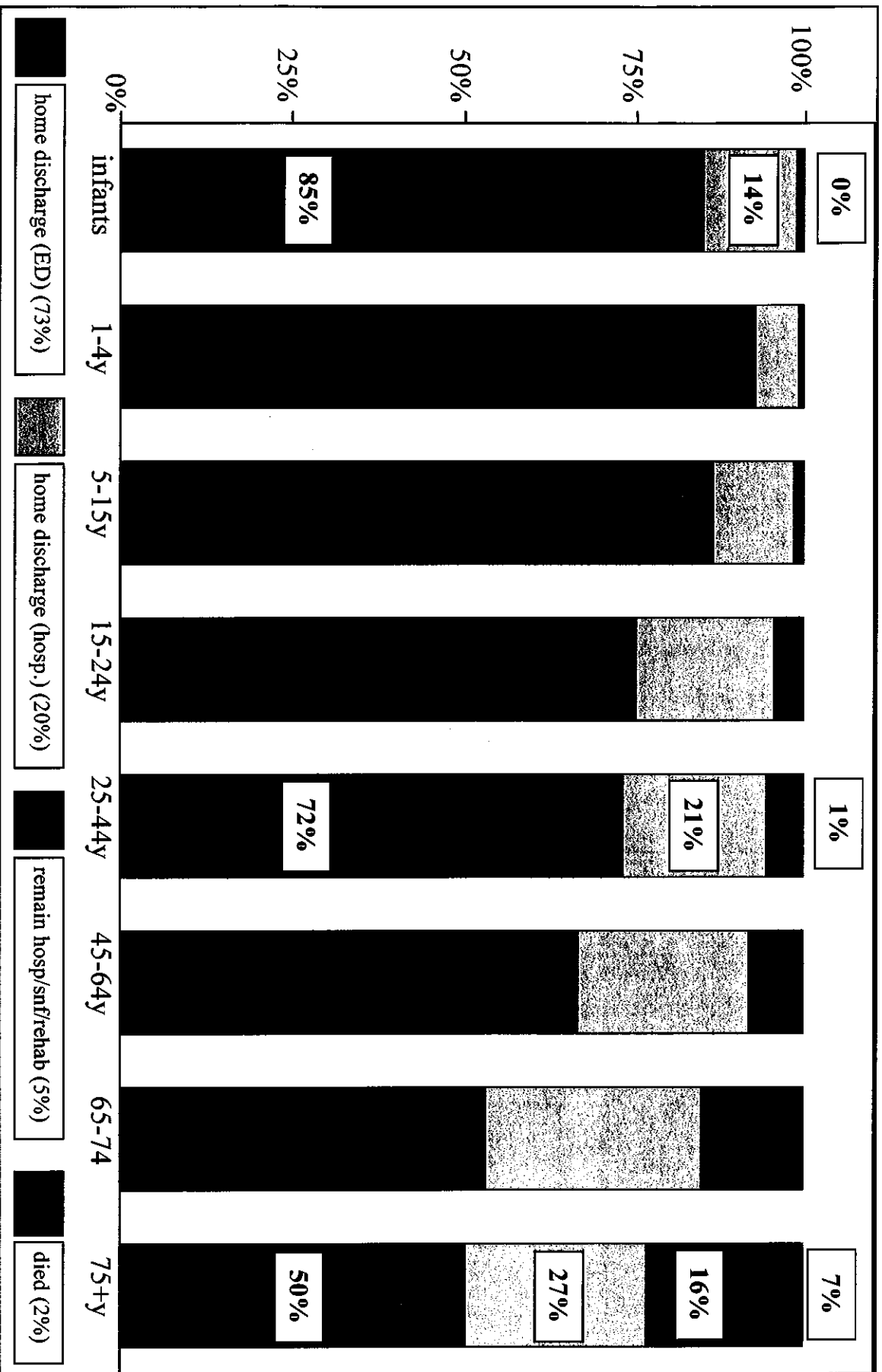




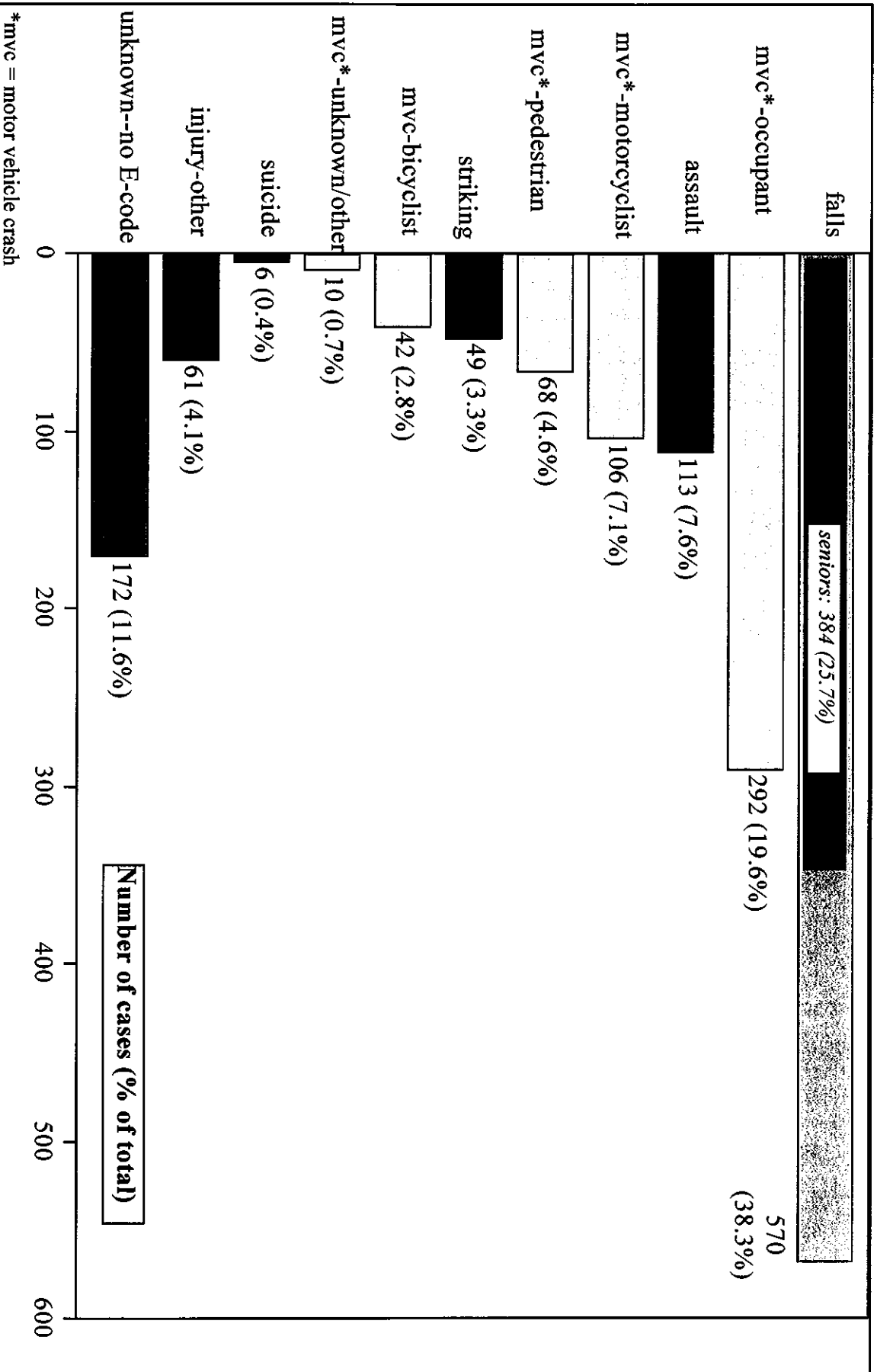
## TBI among Hawaii residents, 2000-2002: Other findings

- **Cost**
  - *Average ED visit: \$1,430* *Total: \$5.6 million/yr.*
  - *Average hospitalization: \$28,350* *Total: \$38.8 million/yr.*
  - *Payers: Medicare/Medicaid (29%), no fault (23%) HMSA (19%), Quest (13%),*
- **Temporality**
  - *One-third (33%) on Saturday or Sunday*
    - *No apparent seasonality*
- **Location---mostly unknown (79%)**
  - *For remainder: home (9%), street/highway (5%),*
- **Disposition**
  - *Most discharged home from ED (73%) or hospital (20%)*
    - *5% discharged to rehab/s.n.f./remain in hospital, 2% died*

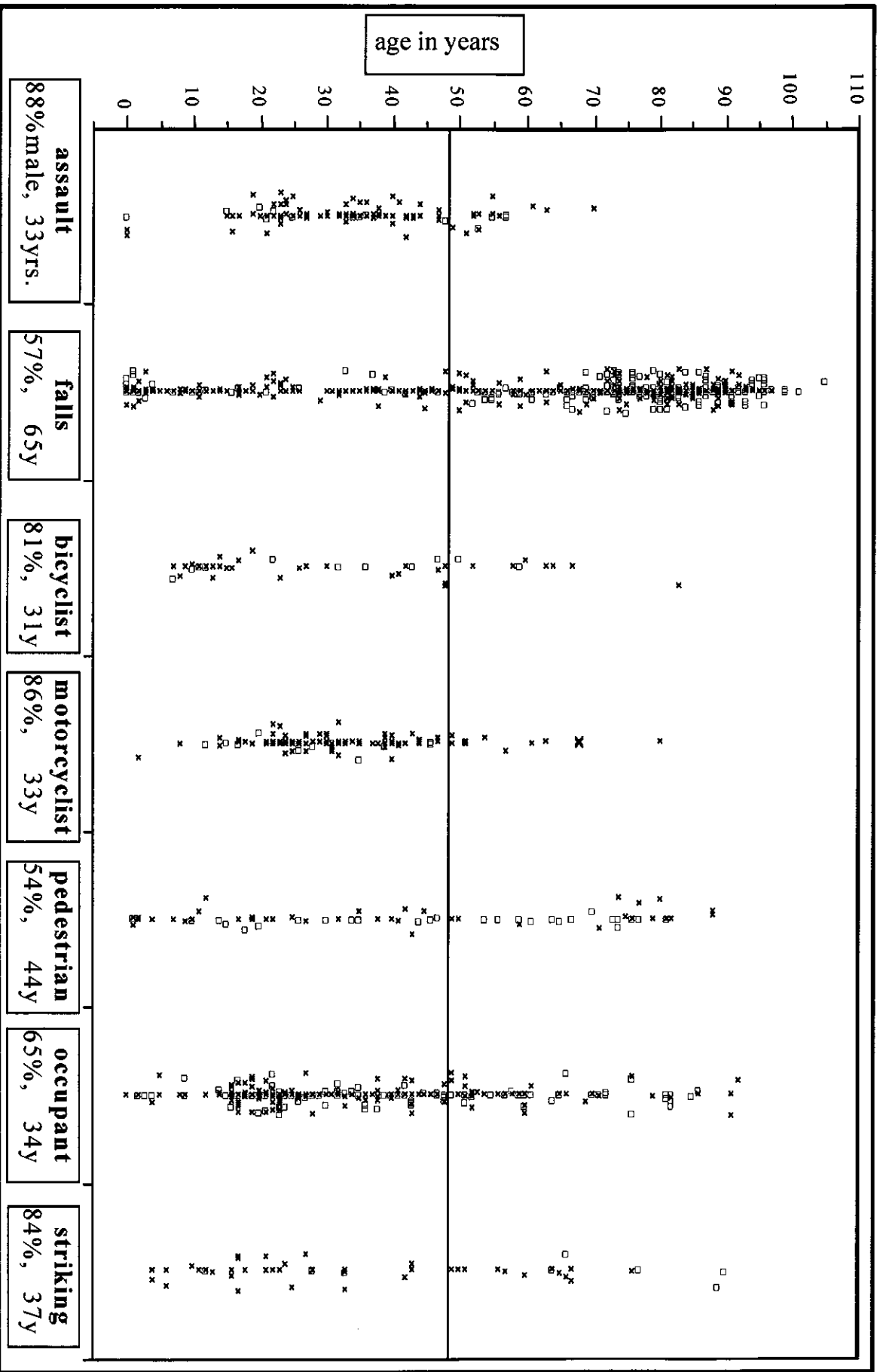
# Disposition of TBI patients in Hawaii, by age, 2000-2002



# Causes of hospitalizations for TBI among Hawaii residents, 2003



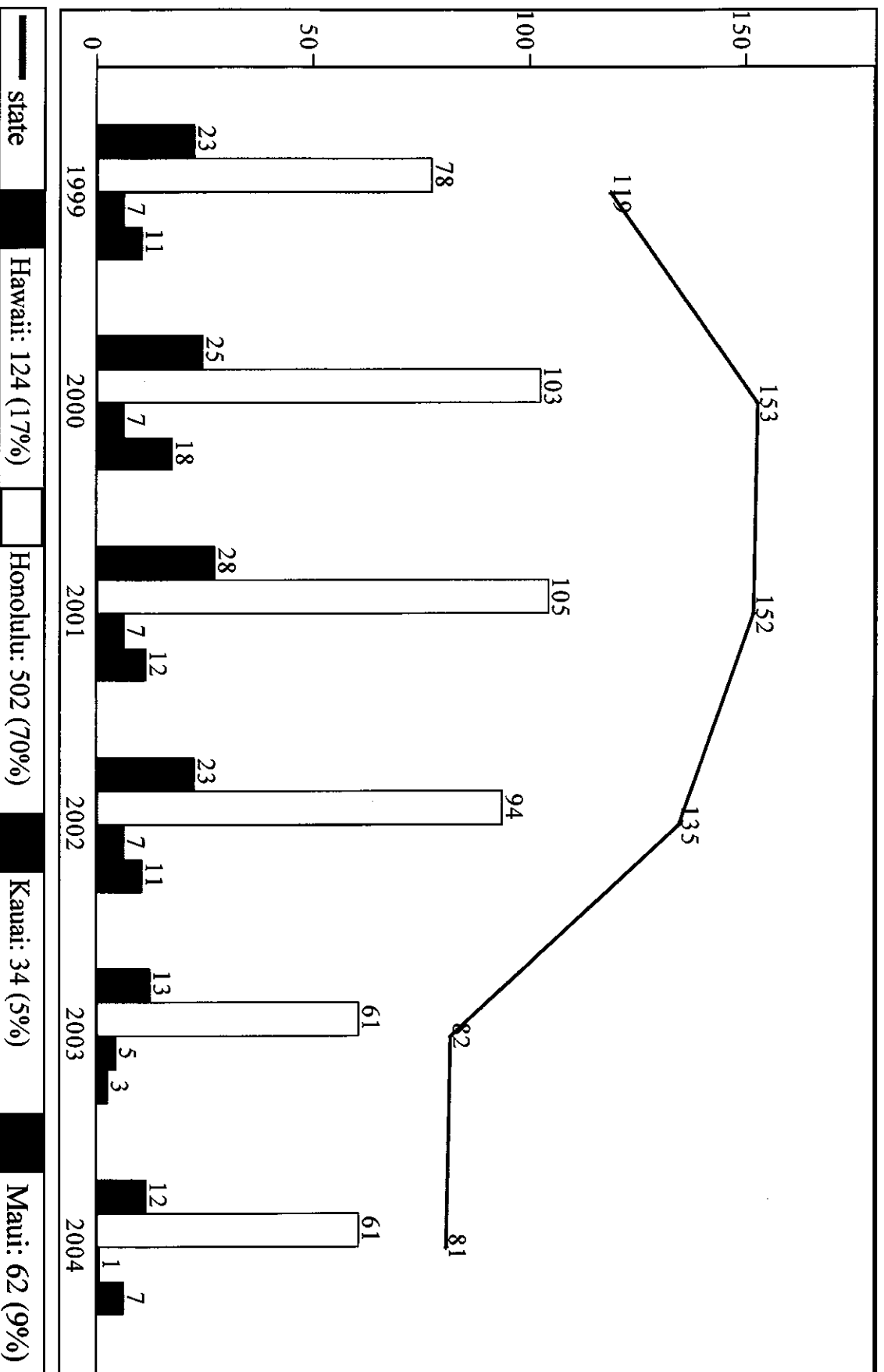
# Age and gender distribution for Hawaii residents hospitalized with TBI, by cause, 2003



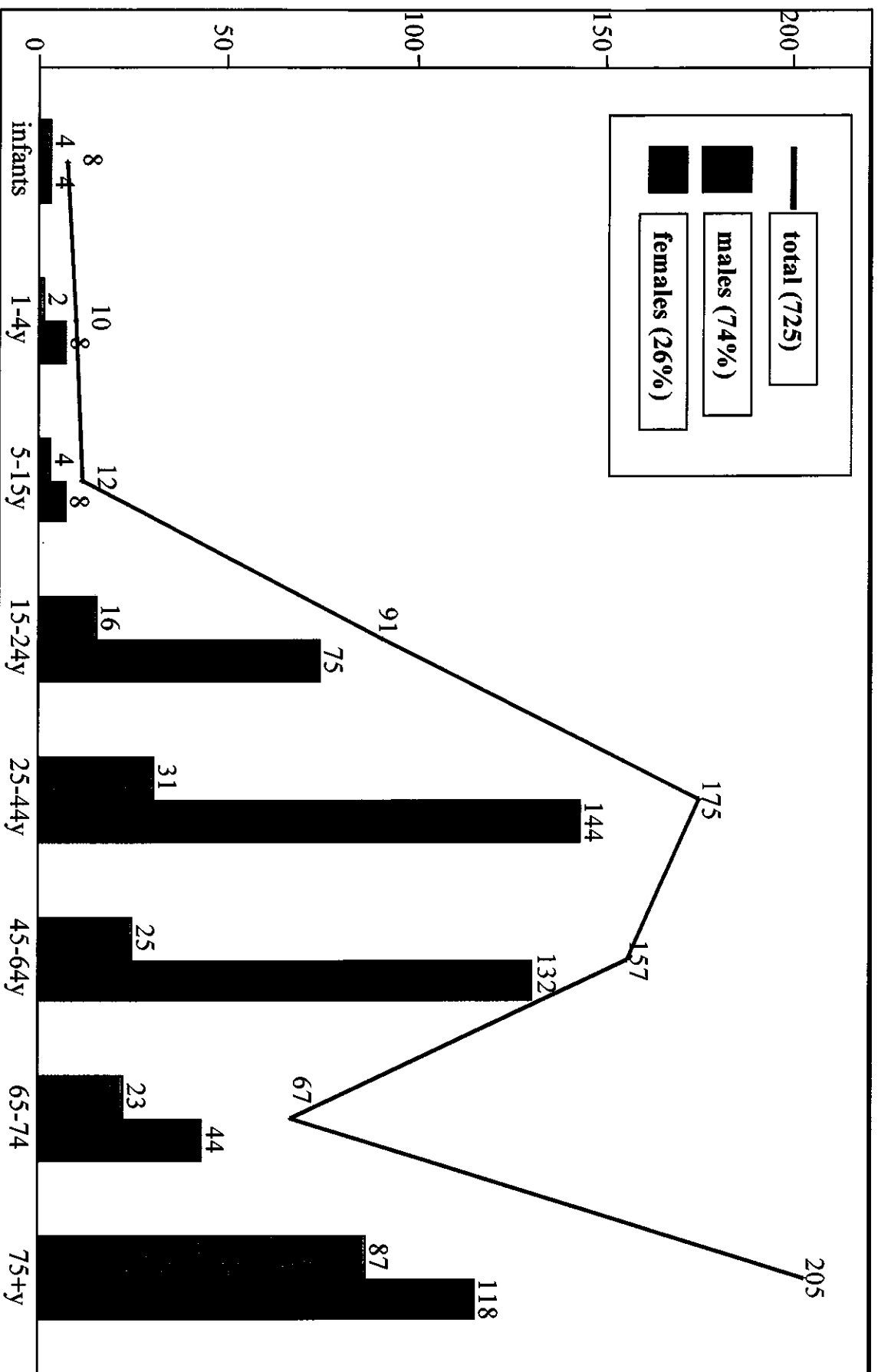
## Fatal Traumatic Brain Injuries among Hawaii residents, 1999-2004.

- ***Defined by ICD-10 codes:***
  - *S01.0-S01.9, T01.0: open wound of the head*
  - *S02.0, S02.1, S02.3, S02.7-S02.9, T02.0: fractures of skull and facial bones*
  - *S04.0: injury to optic nerve and pathways*
  - *S06.0-S06.9: intracranial injury*
  - *S07.0, S07.1, S07.8, S07.9, T04.0: crushing injury of head*
  - *T06.0: injuries of brain and cranial nerve*
  - *T90.1, T90.2, T90.4, T90.5, T90.8, T90.9: sequelae of injuries of head*

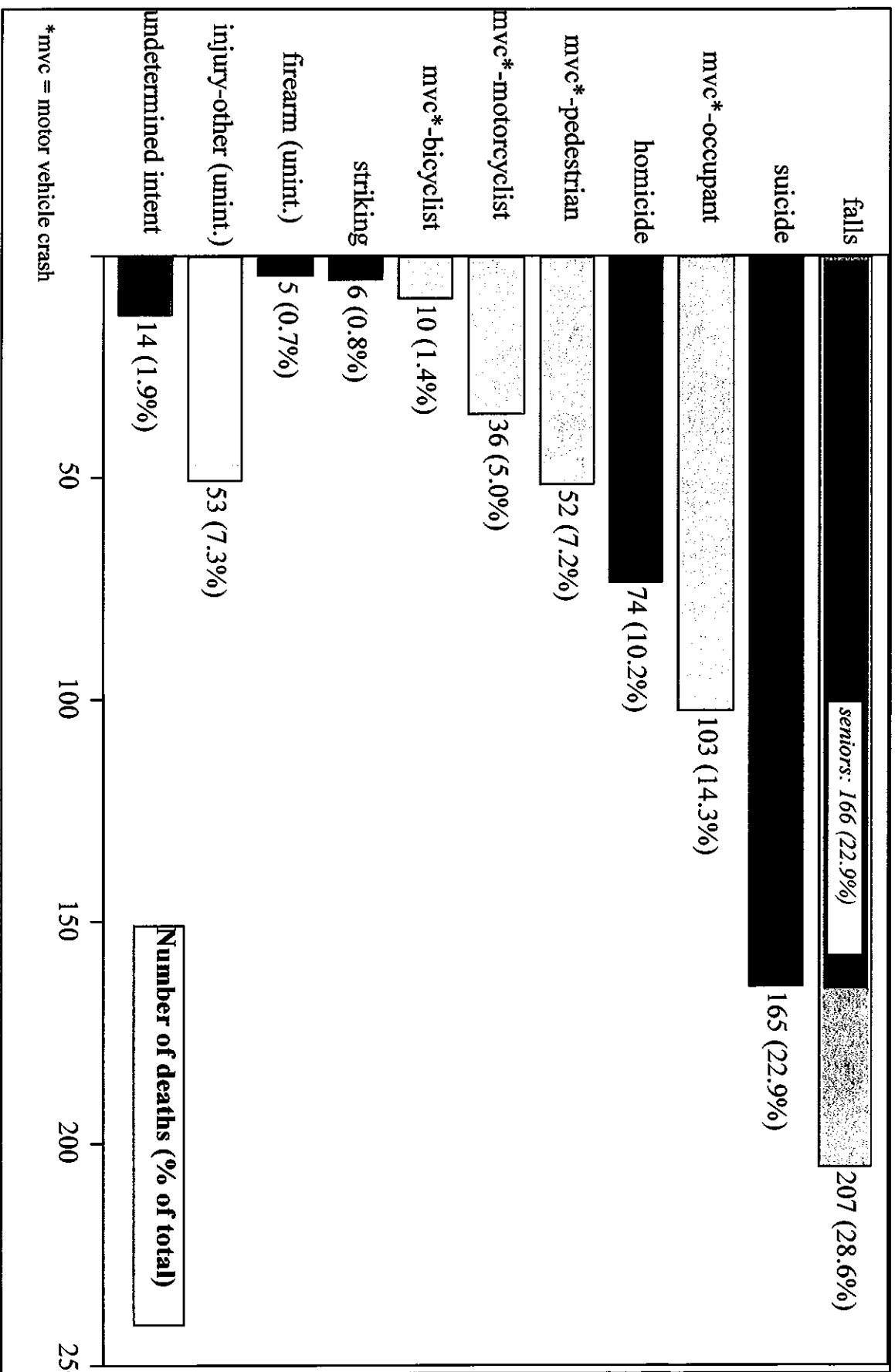
## Annual number of fatal TBI injuries among Hawaii residents, by county of injury, 1999-2004.



# Age and gender of victims of fatal TBI in Hawaii, 1999-2004.



# Causes of fatal TBI among Hawaii residents, 1999-2004



## Summary of TBI among residents of Hawaii

	<b>ED visits and hospitalizations</b>	<b>Fatalities</b>
<i>cases per year</i>	~5,300 (74% through ED)	~120
<i>trends</i>	increasing	decreasing
<i>high risk age groups</i>	infants - 4 yrs., 16 - 21 yrs., 75+ yrs.	65 years and older
<i>gender</i>	62% males	73% males
<i>geography</i>	Hawaii and Maui counties	no clear differences
<i>causes</i>	falls (esp. elderly), crashes, assaults	Falls (esp. elderly), suicides, crashes