



Hawaii's Neurotrauma Program

TRAUMATIC BRAIN & SPINAL CORD INJURIES  STROKE

# Strategic Plan

## Fiscal Years (FY) 2025-2030

Hawai'i State Department of Health  
Developmental Disabilities Division  
Community Resources Branch  
**Neurotrauma Program**  
3627 Kilauea Avenue, Room 411  
Honolulu, HI 96816

May 2024

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## Message from the Director of Health

Aloha,

Based on the support and feedback received from stakeholders, I am pleased to present the Neurotrauma Program's Strategic Plan Fiscal Year (FY) 2025-2030. Over the next five (5) years, this Strategic Plan will guide the work of the Department of Health, Developmental Disabilities Division, Neurotrauma Program.

Since 2002, the Neurotrauma Program, along with similarly focused organizations, has increased the visibility and awareness of neurotrauma injuries across the state through events, presentations, and collaborations. The Department of Health believes in the mission of the Neurotrauma Program to improve access to services and supports for Hawai'i's residents whose lives have been affected by traumatic brain injury, spinal cord injury, or stroke. Each of these injuries is a critical public health issue that impacts the quality of life of Hawai'i's residents.

The Department of Health shall implement the Neurotrauma Program Strategic Plan FY 2025-2030 to improve access to quality services and supports for Hawai'i residents to prevent, live with, and heal from a neurotrauma injury.

Sincerely,



Kenneth S. Fink, MD, MGA, MPH

Director of Health

## Message from the Developmental Disabilities Division Administrator

Hello,

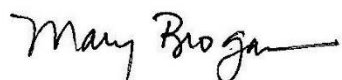
The Strategic Plan FY 2025-2030 is the Neurotrauma Program's framework to guide the Department of Health, Developmental Disabilities Division's journey towards strengthening a more comprehensive and effective system of support for the neurotrauma community.

With input from stakeholders and assessment of social and environmental conditions in our communities, priorities were identified, resulting in the goals and objectives of this Strategic Plan. Guided by this plan, the work of the Neurotrauma Program remains focused on our vision, *"Individuals with neurotrauma will have healthy and meaningful lives."*

Our values are the foundation for our actions and focuses our efforts to work on the four (4) primary goals to: increase general awareness of the impact of neurotrauma injuries; improve service delivery; expand access to resources; and use data to identify incidence, prevalence, and individual needs for survivors of neurotrauma. We are confident that improvement in these areas will enhance the lives of all stakeholders in the neurotrauma community.

We would like to acknowledge everyone that contributed to the process that culminated in the goals and objectives of this Strategic Plan. Your time and assistance are greatly appreciated, and we welcome your continued participation.

Warmest aloha,

A handwritten signature in black ink that reads "Mary Brogan" followed by a horizontal line.

Mary Brogan, Administrator

Developmental Disabilities Division

## Section 1: Executive Summary

The Hawai'i Department of Health (DOH), Developmental Disabilities Division's Neurotrauma Program is charged with setting direction for a comprehensive system to support and access services for survivors of neurotrauma. Goals and objectives for the Neurotrauma Strategic Plan FY 2025-2030 were developed in collaboration with stakeholders at the Neurotrauma Advisory Board (NTAB) and State Traumatic Brain Injury Advisory Board (STBIAB) meetings, from December 2023 to March 2024. Stakeholders included neurotrauma community members from three (3) islands, survivors of neurotrauma injury, family of survivors, other state agencies, Brain Injury Association of Hawai'i, private medical facilities, community partners, the University of Hawai'i, Pacific Disabilities Center, NTAB members, and STBIAB members.

Strategic Plan FY 2025-2030 builds on accomplishments from Strategic Plan FY 2021-2023. The goals, objectives, and accomplishments for FY 2021-2023 were examined, and stakeholder input was solicited on whether those goals and objectives should be continued, or new initiatives should be pursued. This Strategic Plan identifies four (4) goals and related objectives to pursue over the next five (5) fiscal years. The plan largely focuses on using a person-centered approach to improve service delivery, in addition to increasing awareness on neurotrauma and obtaining high-quality data on the needs of survivors of neurotrauma living in the community. The goals of Strategic Plan FY 2025-2030 are:

*Goal 1: In coordination with community partners, expand educational opportunities to the public sector on all neurotrauma injuries to increase awareness on the effects of neurotrauma and how to respond to an injury.*

*Goal 2: In coordination with community partners, connect providers to educational opportunities to increase awareness of neurotrauma and improve service delivery and outcomes for survivors of neurotrauma that they serve.*

*Goal 3: Expand survivors', family members', and caregivers' connections to available resources in Hawai'i.*

*Goal 4: Use data to identify the needs and service gaps for survivors of neurotrauma and family members/caregivers.*

## Section 2: Background and Overview

In 2002, the Hawai'i State Legislature passed Act 160, enacting Section 321H in the Hawai'i Revised Statutes (HRS), to address the needs of individuals with neurotrauma. The statute defines neurotrauma as a severe and chronic disability of a person that is attributable to an injury to the central nervous system, including traumatic brain injury (TBI) or spinal cord injury (SCI), and is likely to continue indefinitely. The statute states neurotrauma can include other neurological dysfunctions but does not include substance misuse and abuse, Alzheimer's disease, or the infirmities of aging. Stroke was included in the definition of neurotrauma because it is a preventable neurological dysfunction that can result in substantial functional limitations in the areas described in the statute: self-care; speech, hearing, or communication; learning; mobility; self-direction; capacity of independent living; and economic sufficiency.

The statute mandates the Department of Health (DOH) to develop, lead, administer, coordinate, monitor, evaluate, and set direction for a comprehensive system to support and provide services for survivors of neurotrauma injuries. Section 321H-3 established the Neurotrauma Advisory Board (NTAB) which provides recommendations to the DOH on implementing this directive. The Neurotrauma Program is also advised by the State Traumatic Brain Injury Advisory Board (STBIAB) which was established in 1997 through the State Legislature's passing of Act 333. The purpose of the STBIAB is to advise the DOH in developing and implementing a plan to address the needs of brain injury survivors.

Section 321H-4 created a Neurotrauma Special Fund (NSF), which generates funding pursuant to the surcharges levied under traffic violations that could result in TBIs or SCIs, such as speeding and operating a vehicle under the influence of an intoxicant. The NSF can be used for:

- Education on neurotrauma;
- Assistance to individuals and families to identify and obtain access to services;
- Creation of a registry of neurotrauma injuries within the State to identify incidence, prevalence, individual needs, and related information; and
- Necessary administrative expenses to carry out this chapter not to exceed two percent of the total amount collected annually.

## Information and Statistics on Neurotrauma in Hawai'i

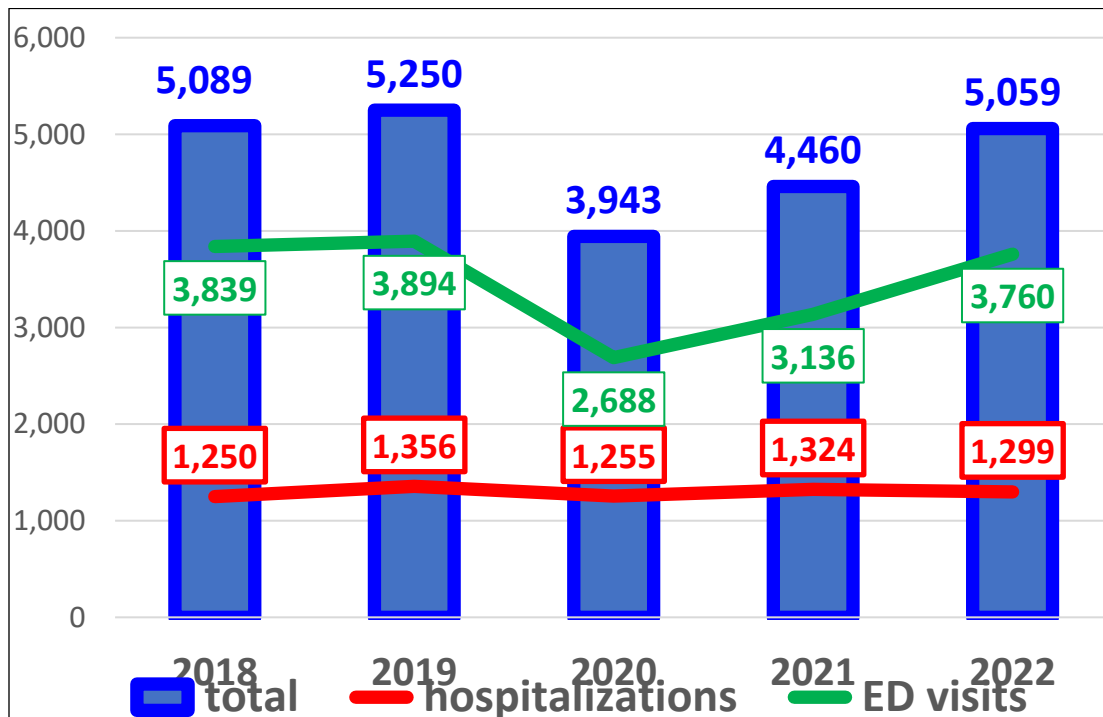
### Traumatic Brain Injury (TBI)

According to the Centers for Disease Control and Prevention (CDC) the cause of a TBI is a “bump, blow, or jolt to the head or a hit to the body that causes the head and brain to move quickly back and forth”. The severity of a TBI may range from ‘mild’ (i.e., a brief change in mental status or consciousness) to ‘severe’ (i.e., an extended period of unconsciousness or memory loss after the injury). While most TBIs are considered mild, and referred to as concussions, the effects of such a head injury can be serious. TBI symptoms may include headaches, vision problems, nausea, vomiting, balance problems, dizziness, brain fog, difficulty concentrating, memory problems, changes in moods, and in sleep patterns. Depending on the severity, a TBI may affect long-term cognitive, motor, sensation, and/or emotional functioning. (CDC, 2024). <https://www.cdc.gov/traumatic-brain-injury/about/index.html>

Annually, between 2018 through 2022, Hawai'i averaged for thousand seven hundred sixty (4,760) TBIs. During this same period annual averages for TBI related emergency department (ED) visits numbered three thousand four hundred sixty-three (3,463) and one thousand two hundred ninety seven (1,297) hospitalizations. Please see Appendix A for additional TBI statistics.

**Graph 1:** Annual number of hospital treatments for TBI in Hawai'i, by level of care, 2018-2022 .

**Source:** Laulima Data Alliance (2018-2022).



- 1 Graph 1 includes non-residents and TBI related fatalities.
- 2 Graph 1 excludes “unspecified head injury” documented as the only TBI diagnosis, records not meeting CDC indicators criteria for a TBI, and patients discharged to another short-term acute care facility.

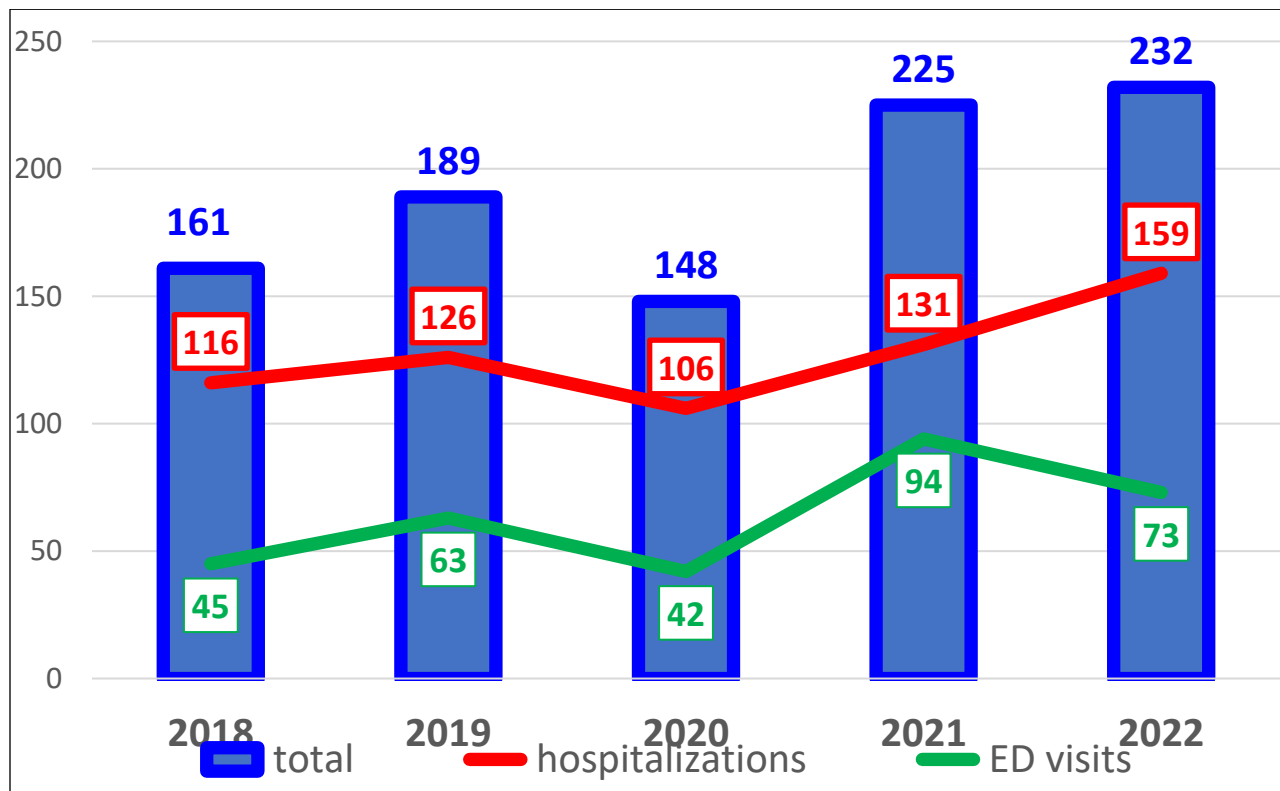
## Spinal Cord Injury (SCI)

According to the [National Institute of Neurological Disorders and Stroke](https://www.ninds.nih.gov/health-information/disorders/spinal-cord-injury?search-term=spinal%20cord%20injury#toc-what-is-a-spinal-cord-injury-), an SCI can be caused by direct injury to the spinal cord or damage to the tissue and vertebrae surrounding the spinal cord. Damage may be temporary or permanent, affecting sensory, movement, strength, and body functions below the site of injury. The damage begins at the moment of injury when displaced bone fragments, disc material, or ligaments bruise or tear into spinal cord tissue. Fractures and compressions of the vertebrae, crush and destroy axons – extensions of nerve cells, that carry signals up and down the spinal cord between the brain and the rest of the body. An injury to the spinal cord can damage a few, many, or almost all these axons. A complete SCI occurs when damage to the spine no longer allows messaging to the brain to control bodily functions. When an SCI is incomplete, the survivor retains some level of functioning below the site of the injury. <https://www.ninds.nih.gov/health-information/disorders/spinal-cord-injury?search-term=spinal%20cord%20injury#toc-what-is-a-spinal-cord-injury->

Annually, between 2018 through 2022, Hawai'i averaged one hundred ninety-one (191) SCIs. During this same period annual averages for SCI related emergency department (ED) visits numbered sixty-three (63) and one hundred twenty-eight (128) hospitalizations. Please see Appendix A for additional SCI statistics.

**Graph 2:** Annual number of hospital treatments for SCI in Hawai'i, by level of care, 2018-2022

**Source:** Lualima Data Alliance (2018-2022).



- 1 Graph 2 includes non-residents and SCI related fatalities.
- 2 Graph 2 excludes records not meeting CDC Indicators criteria for an SCI, and patients discharged to another short-term acute care facility.



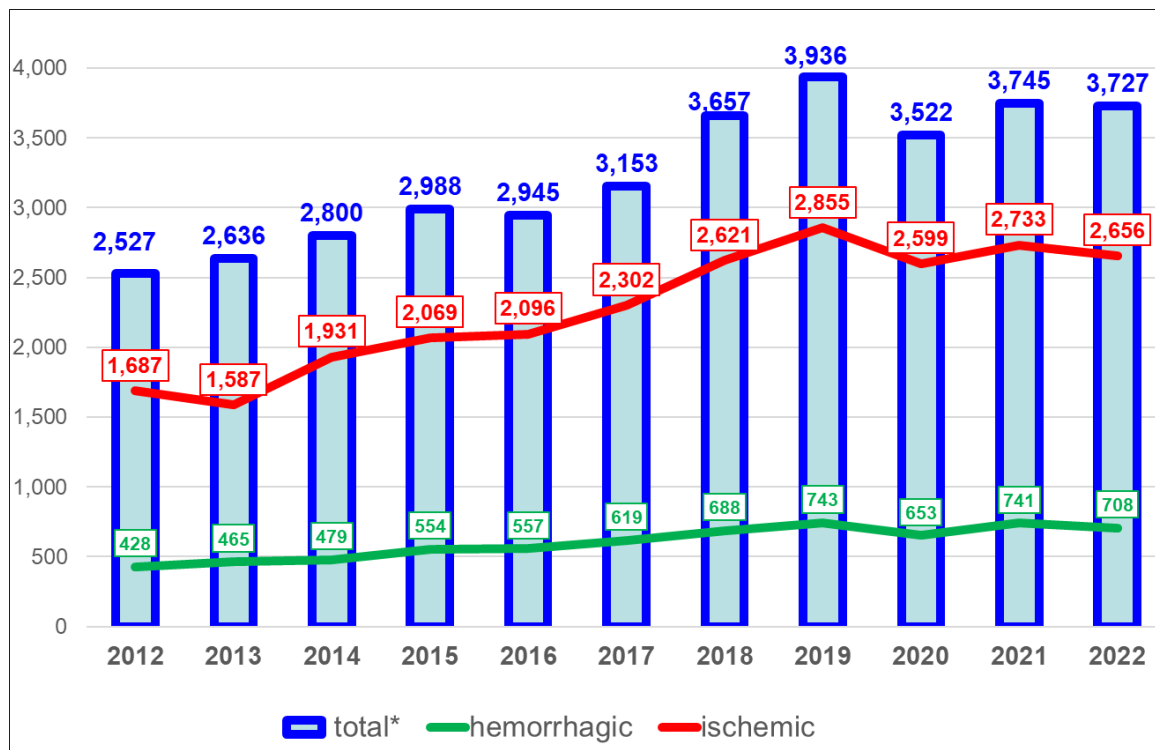
## Stroke

Stroke is the leading cause of chronic disability and the third leading cause of death in Hawai'i. According to the [American Stroke Association](#), “a stroke occurs when a blood vessel that carries oxygen and nutrients to the brain is either blocked by a clot [*ischemic stroke*] or bursts [*hemorrhagic stroke*]. When that happens, part of the brain cannot get the blood (and oxygen) it needs, so it and brain cells die.” A transient ischemic attack (TIA) or “mini stroke” is caused by a temporary clot. The effects of stroke depend on several factors, including the location of the blockage/rupture and how much brain tissue is affected. Effects may include paralysis on one side of the body, vision problems, speech/language problems, changes in behavior, and/or memory loss. <https://www.stroke.org/en/about-stroke>

Annually, between 2012 through 2022, Hawai'i averaged three thousand two hundred forty-two (3,242) strokes, including TIAs. Excluding TIAs, approximately seventy percent (70%) of strokes, were ischemic, and nineteen percent (19%), were hemorrhagic. Please note that the data in Graph 3 below does not indicate an increasing number of strokes occurring each year, but rather an increasing number of hospitals contributing data to the Hawai'i Stroke Registry. Please see Appendix A for additional stroke statistics.

**Graph 3:** Annual number of records in the Hawai'i Stroke Registry, by type of stroke, 2012-2022

**Source:** Hawai'i Stroke Registry, 2012-2022.



- 1 Graph 3 includes non-residents. The “Total” reflects numbers including TIAs and strokes of unspecified type.
- 2 Graph 3 excludes any records with “No stroke related diagnosis”. Numbers specific to “ischemic” and “hemorrhagic” exclude TIAs.

## *Neurotrauma Program Activities and Accomplishments FY 2021-2023*

The Neurotrauma Strategic Plan FY 2025-2030 aims to build on the program's activities and accomplishments of the Strategic Plan FY 2021-2023:

- Conducting outreach to raise public awareness of neurotrauma injuries.
- Participating in education events to raise awareness of TBI, SCI, and stroke.
- Connecting the neurotrauma community (survivors, caregivers, family, professionals) to resources via the Neurotrauma Helpline.
- Assisting support groups across the state to facilitate connections amongst those affected by neurotrauma.
- Procuring services to innovate Hawai'i's stroke system of care including:
  - Implementing the newest stroke technology statewide inclusive of training hospital stroke staff.
  - Teaching keiki to recognize the symptoms of stroke, how to respond, and share what they learned with their household.
  - Increasing fluidity of communication between Emergency Medical Services and hospital staff across all islands.
  - Using data to inform streamlining of procedures resulting in timelier treatment delivery, prevention of unnecessary transfers, and lower rates of disability.
- Procuring concussion education through Project Head, Neck, Spine, aimed at preventing head, neck, and spine injuries by:
  - Using a curriculum both culturally and age appropriate to educate two thousand (2000) students grades three (3) through nine (9).
  - Educating seventy (70) kindergarten through twelfth (12<sup>th</sup>) grade teachers on how to facilitate a concussed student's return to the classroom.
- Strengthening NTAB and STBIAB through diverse membership and increased participation.
- Researching different methods of data collection and analysis to improve Hawai'i's Neurotrauma Registry for identification of needs within the neurotrauma community.
- Increasing communication, education, awareness, and resource access while decreasing duplication of efforts through collaborations and networking with partner agencies.

### **Section 3: Mission, Vision, Values, and Guiding Principles**

The mission, vision and values of the Neurotrauma Program reflect those adopted by the Developmental Disabilities Division. The Strategic Plan was initiated to help carry out its mission:

*Mission:* Enhance partnerships to ensure individuals with neurotrauma and family members have access to services and supports.

*Vision:* Individuals with neurotrauma will have healthy and meaningful lives.

*Values:*

- ✓ Health and well-being of neurotrauma survivors and family members
- ✓ Dignity and respect for each individual
- ✓ Individual choice, control and responsibility
- ✓ Honoring diversity and human rights
- ✓ Personal growth and accomplishment

*Guiding Principles:*

Service delivery system is:

- ✓ Accessible/available/flexible;
- ✓ Implemented through best practices;
- ✓ Innovative/creative;
- ✓ Accountable;
- ✓ Coordinated and seamless through partnerships;
- ✓ Person-centered; and
- ✓ Empowering the individual.

## **Section 4: Strengths and Opportunities**

### ***Strengths***

Chapter 321H, HRS created Hawai'i's NSF, which ensures money is available to fulfill the mandates of Chapter 321H. Dedicated NSF monies allow the Neurotrauma Program to enter into contractual agreements with providers to build new or improved systems of support for survivors of a neurotrauma event.

Working in tandem with the Neurotrauma Program is a network of community organizations with whom Neurotrauma Program partners on a regular basis to provide Hawai'i residents diverse, community focused information and support. Through this network, additional partners are added each year, growing the reach and impact of the Neurotrauma Program.

### ***Opportunities***

The NTAB and the STBIAB are made up of dedicated members who share knowledge and experience to inform Neurotrauma Program's work on building, maintaining, and improving a system of support for Hawai'i's neurotrauma community. Members' backgrounds, as survivor, family, friend, professional, and caregiver, bring vital insight and perspective to the Neurotrauma Program. The Program's efforts in advocacy, outreach, and legislative activism are guided by member input and feedback. As members of NTAB and STBIAB, all parties work collaboratively with the goal of improving the system to make access to resources as seamless as possible.

Neurotrauma Program maintains partnerships with a diverse array of stakeholders (e.g. Kapiolani Medical Center for Women and Children, Queen's Medical Center, Pacific Disabilities Center (PDC), University of Hawai'i at Manoa, College of Education, Kinesiology and Rehabilitation Science (UHKRS), Brain Injury Association of Hawaii (BIHi), and American Stroke Association) in the community. Besides advancements in medicine and technology to better serve the people of Hawai'i, these partnerships allow for collaborations to educate and inform the community about the lifelong impact a neurotrauma injury can have on a person's future. Education and awareness include recognizing signs and symptoms of a neurotrauma injury, tips on living with an injury and actions everyone can take to prevent or minimize injury. Through networking efforts, the Neurotrauma Program continues to build upon these partnerships to ensure messaging to the public and professionals is current, consistent, and reduces the likelihood of efforts being duplicated.

Each of the partners mentioned have their own established networks and informational databases. Although it was ultimately determined to not be feasible, the Neurotrauma Program did explore options to create a systematic shared database to benefit all partners. Alternative partnerships for this endeavor are still being considered. Additionally, the Neurotrauma Program looks to nurture partnerships with stakeholders statewide to gain additional viewpoints and knowledge of their experiences, the needs of survivors of neurotrauma, and the effectiveness of work being done in Hawai'i.

Previous and current work with the UHKRS, are potential doorways for the Neurotrauma Program to extend future educational opportunities related to neurotrauma injury to Hawai'i's Department of Education (DOE). UHKRS's work promotes best practices to identify, prevent, and address head injury. The opportunity to further educate DOE administration, staff and students on stroke and spinal cord

injury aims to raise awareness and highlight the benefits of healthy lifestyle habits to prevent and/or mitigate neurotrauma injury.

From the neurotrauma community we often hear of the desire to connect with others who have similar lived experiences with neurotrauma injury. A TBI survivor who is struggling to find a therapist wants to talk to a survivor who has made progress with their own therapist. The adult caring for a parent who experienced a stroke wants to meet other people in his/her situation to see how they cope with the demands of work, family, appointments, personal care, special diets, etc. Help and comfort are often found in support groups with likeminded individuals. National neurotrauma organizations such as Brain Injury Association of America (BIAA) are available to assist regional groups such as BIHi to organize and grow to support survivors. Neurotrauma Program has increased interactions with BIHi in recent years and facilitated a meet up between BIAA and BIHi at the 2023 National Association of State Head Injury Administrators, State of the State conference. Further interactions between the Neurotrauma Program and BIHi will foster a more cohesive community that can lean upon one another for encouragement and guidance.

Current data sources related to neurotrauma in Hawai'i include the Lualaba Data Alliance, the Hawai'i Trauma Registry, and the Hawai'i Stroke Registry. The Lualaba Data Alliance is a repository of billing data, which provides information on patients who seek medical treatment via emergency departments or hospitals for TBI or SCI. The Hawai'i Stroke Registry and the Hawai'i Trauma Registry databases are populated by registrars who encounter patients with certain presentations (i.e., stroke, TBI, and SCI). The Hawai'i Trauma Registry captures more serious injuries that present to one of the nine (9) trauma centers in the State of Hawai'i and provides more detail than the billing data from the Lualaba Data Alliance. The Hawai'i Stroke Registry, also known as the Get With the Guidelines (GWTG) Database, is a *"hospital-based quality improvement initiative created by the American Heart Association (AHA) and the American Stroke Association (ASA) to improve the care of patients with cardiac disease and stroke."* (*Am Heart J.* 2004 Nov;148(5 Suppl):S46-8.) In partnership with Neurotrauma Program, DOH Emergency Medical Services & Injury Prevention System Branch analyzes and interprets GWTG, the Hawai'i Trauma Registry, and the Lualaba Data Alliance data.

HRS 321H mandates the DOH create and maintain a registry of neurotrauma survivors to identify needs and gaps in service to improve the system of services and supports for survivors. However, due to the Health Information Portability and Accountability Act requirements, information gathered by Hawai'i's medical providers for Lualaba Data Alliance, GWTG and Hawai'i Trauma Registry, cannot be shared between programs within the DOH. Neurotrauma Program previously contracted with PDC from March 21, 2013, to June 19, 2020, to identify and register survivors to the Hawai'i Neurotrauma Registry, (HNTR). From the voluntary registry data, the HNTR provided analysis of the needs of five hundred sixty-one (561) unduplicated statewide respondents. The current focus of the Neurotrauma Program is to identify a data collection system that will allow for gathering of a larger sample that will be representative of the neurotrauma community throughout the State of Hawai'i.

## Section 5: Stakeholder Feedback

Members of Hawai'i's neurotrauma community contributed personal experiences, ideas, and suggestions to shape the goals and objectives of Strategic Plan FY 2025-2030. Community input was garnered through participation in the 12/14/23 NTAB and 1/9/24 STBIAB meetings with attendees from the islands of O'ahu, Hawai'i, and Kaua'i. Stakeholders included neurotrauma injury survivors, board members, other state agencies, contractors, advocates, families, medical providers, hospital trauma workers, and injury prevention personnel. Goals, objectives, and progress on the Strategic Plan FY 2021-2023 were reviewed and discussed. Stakeholders agreed on the need to continue work on the four (4) existing goals and objectives with the addition of a new objective under Goal 1.

FY 2025-2030	SUGGESTED UPDATES	OTHER COMMENTS
<b>GOAL 1</b>	<ul style="list-style-type: none"> <li>• Add language to include engagement in activities addressing injury prevention.</li> <li>• Promote support groups in person and electronically.</li> <li>• Start education at elementary grades on choices that contribute to neurotrauma injuries (drugs, diet, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>• Education and learning experiences are a great impact for all involved.</li> <li>• STBIAB attendees voiced support for educating keiki on life choices that can lead to neurotrauma injuries.</li> <li>• Years ago, Brain Injury Assoc of Hawai'i created a packet/curriculum for school principals.</li> <li>• <a href="https://www.brainline.org/article/acrm-bi-isig-disorders-consciousness-family-education-guide">https://www.brainline.org/article/acrm-bi-isig-disorders-consciousness-family-education-guide</a> resource shared to start creation of education packet.</li> </ul>
<b>GOAL 2</b>	<ul style="list-style-type: none"> <li>• Extend outreach to care homes so staff is getting updated information on how to care for people.</li> <li>• Increase involvement and exposure on the neighbor islands.</li> <li>• Define what kind of training is needed for care home staff.</li> <li>• Gear training toward all medical helpers.</li> <li>• Include care planning.</li> <li>• Have a case worker handle the training.</li> </ul>	None

FY 2025-2030	SUGGESTED UPDATES	OTHER COMMENTS
<b>GOAL 3</b>	<ul style="list-style-type: none"> <li>• Before a patient leaves a facility to go home, caregivers need to have more information on how to properly care for their loved one. Training needs to be more hands on with the caregiver demonstrating proper application of knowledge and technique in food preparation, medication distribution, lifts, transfers, etc.</li> <li>• Sponsor memberships for fitness facilities when survivor has neurotrauma diagnosis and therapy prescription from their primary doctor.</li> <li>• Increase neighbor island access to services.</li> <li>• Need some type of assistance for people who need help understanding information being relayed by their medical professionals' (diagnosis, instructions, observations during an appointment).</li> <li>• Increase training to prepare survivors and caregivers to have a better understanding of doctor appointments.</li> <li>• Increase training for medical staff to provide patients with a better understanding of their appointments.</li> </ul>	<ul style="list-style-type: none"> <li>• Insurance plans often cover gym memberships.</li> <li>• What transportation is covered by insurance for neighbor island travel?</li> <li>• Peer mentoring group in place years ago with Robin Brandt (former director of the organization now known as Pacific Disabilities Center) was a way for survivors to teach one another how to get help and access the community.</li> </ul>
<b>GOAL 4</b>	<ul style="list-style-type: none"> <li>• Create a brochure explaining the neurotrauma registry and pass it out at community events so people can access the survey at their own convenience.</li> </ul>	<ul style="list-style-type: none"> <li>• Many survivors don't want to talk about the past.</li> <li>• Know your target audience.</li> <li>• Questionnaires are too personal.</li> <li>• One of the obstacles was the ask for lots of information. How to make people more comfortable. Is there a way to get the necessary information other than a long survey? Educational support group or meeting? When in hospice, they have a care conference instead of a survey.</li> </ul>

## **Section 6: Goals and Objectives**

### **GOAL 1:**

In coordination with community partners, expand educational opportunities to the public sector on all neurotrauma injuries to increase awareness on the effects of neurotrauma and how to respond to an injury.

#### **OBJECTIVES:**

- 1.1 Provide survivors and caregivers with awareness of how a neurotrauma injury can affect a person's life immediately following an injury and throughout their lifetime. Include information on accessing neurotrauma injury support groups.
- 1.2 Educate the public on neurotrauma injury prevention as well as the signs, symptoms and what to do when recognizing a TBI, SCI or Stroke.
- 1.3 Coordinate public education efforts to maximize the impact and ensure efforts are not being duplicated.
- 1.4 Collaborate with Hawai'i's Department of Education to create and distribute a curriculum for elementary students and teachers on choices and behavior patterns that have historically contributed to neurotrauma injuries.

### **GOAL 2:**

In coordination with community partners, connect providers to educational opportunities to increase awareness of neurotrauma and improve service delivery and outcomes for the survivors they serve.

#### **OBJECTIVES:**

- 2.1 Provide social workers and medical providers with insight on survivors' experiences and methods for effective communication to improve collaboration between patient and provider.
- 2.2 Work with administration and staff involved with educating youth to establish and implement a Return-to-Learn protocol for students exhibiting signs of a TBI, including the identification of TBI signs and symptoms and how to discuss with parents.

### **GOAL 3:**

Expand survivors', family members', and caregivers' connections to available resources in Hawai'i.

#### **OBJECTIVES:**

- 3.1 Work with hospital staff and interested stakeholders to develop and implement an effective way to share information and resources with survivors to increase access to services and supports.
- 3.2 Provide guidance for members of the neurotrauma community to gather in a safe space to share thoughts, ideas, and resources on a regular basis.



**GOAL 4:**

Use data to identify the needs and service gaps for survivors of neurotrauma and family members/caregivers.

**OBJECTIVES:**

- 4.1 Develop and implement a plan for obtaining generalizable data.
- 4.2 Develop and implement a plan to analyze data and identify service gaps to direct program activities.

## **Section 7: Summary and Next Steps**

The Neurotrauma Program appreciates all stakeholders who contributed to Strategic Plan FY 2025-2030 and looks forward to continuing to work together to improve Hawai'i's system of services and supports for survivors of TBI, SCI, and stroke. Under Goal 1, objective 1.1 was updated to highlight the need for survivors and caregivers to have ongoing support as healing from a neurotrauma event is a lifelong endeavor. Also under Goal 1, objective 1.4 was added to reflect the importance of healthy habits forming early in life as the best prevention against injury and chronic disease.

Although all feedback is not addressed explicitly in the listed goals and objectives, all stakeholder input is taken into consideration and impacts the work on all goals and objectives. Shared viewpoints and experiences serve to inform the Neurotrauma Program of current concerns within the neurotrauma community and ideas to address those concerns. These insights are the impetus for the Neurotrauma Program to approach each goal and objective with a refreshed outlook and energy.

The focus of Strategic Plan FY 2025-2030 is to develop and implement effective methods to better understand the needs of the neurotrauma community and innovations to connect the community to needed resources. Continuing to cultivate healthy collaborative relationships with our community partners and board members are key to successful achievement. With our partners, work from this plan will include improving service delivery, addressing service gaps, and increasing opportunities to educate and raise awareness of neurotrauma.

Collaborations with partners will be pursued to support the intentions of Strategic Plan FY 2025-2030. Current approaches employed by the Neurotrauma Program to educate, raise awareness, and build a better program will be assessed for viability and relevance. New approaches to address the goals and objectives of Strategic Plan FY 2025-2030 will be effective, purposeful, and align with Neurotrauma Program's Mission and Vision to positively impact the neurotrauma community.

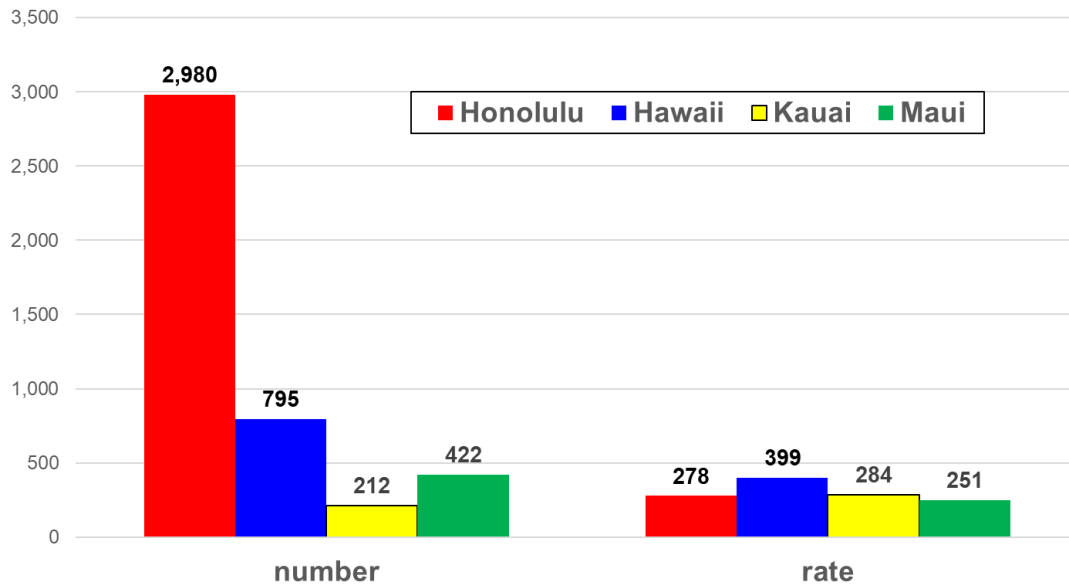
NTAB and STBIAB members will actively participate in achieving the goals and objectives laid out in Strategic Plan FY 2025-2030 by serving on subcommittees, implementing strategies, and networking in the community.

## Appendix A: Additional Neurotrauma Statistics

### Graph 4. TRAUMATIC BRAIN INJURY

Average annual number and age-adjusted rate (/100,000) of TBI in Hawai'i, by county of residence, 2018-2022.

Source: Lulima Data Alliance (2018-2022)

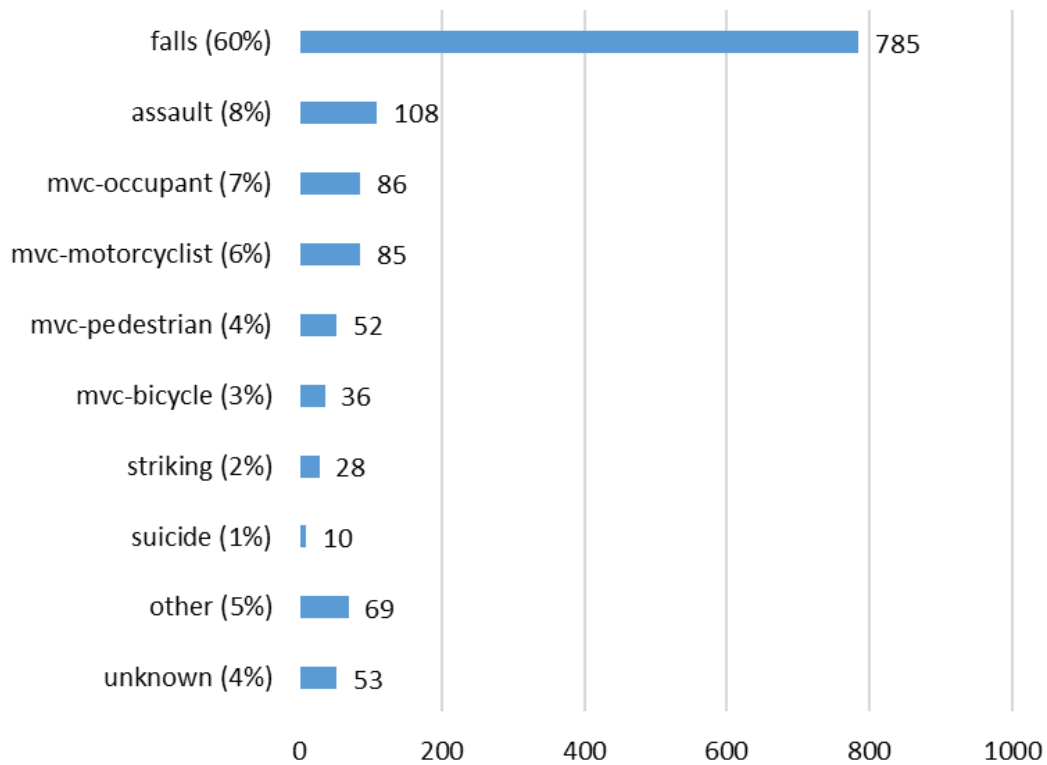


- 1 Graph 4 excludes non-residents records with “unspecified head injury” documented as the only TBI diagnosis, and records not meeting CDC indicators criteria for a TBI.
- 2 Observations on the number of TBIs across the State:
  - a) Sixty-eight percent (68%) of injured residents are from Honolulu County.
  - b) Except for a possible decreasing trend for Maui County, no clear trends between counties.
- 3 Observations on the rate of TBIs across the State:
  - a) Honolulu County is lower than the counties of Hawai'i and Maui.
  - b) Hawai'i County is significantly higher than all other counties.
  - c) Almost no difference between the counties of Maui and Kaua'i.

### Graph 5. TRAUMATIC BRAIN INJURY

Average annual number for causes of TBI hospitalizations and fatalities in Hawai'i, 2018-2022. (mvc= motor vehicle crash)

Source: Lailima Data Alliance (2018-2022)

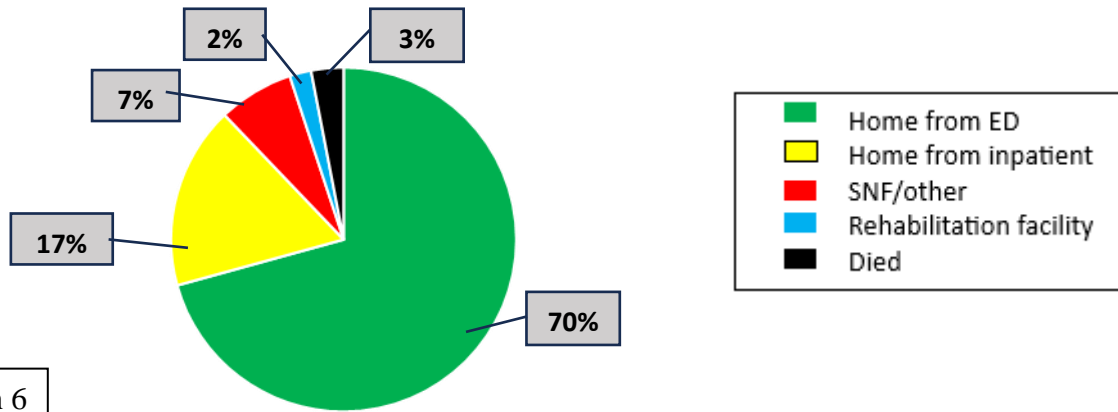


- 1 Graph 5 includes non-residents and TBI related fatalities.
- 2 Graph 5 excludes “unspecified head injury” documented as the only TBI diagnosis, records with injury cause coding for adverse effects, records not meeting CDC indicators criteria for a TBI, patients discharged alive from the ED or discharged to another short-term acute care facility.
- 3 Of the seven hundred eighty-five (785) falls, five hundred eighty-three (583) (44%) were seniors aged 65 years or older.

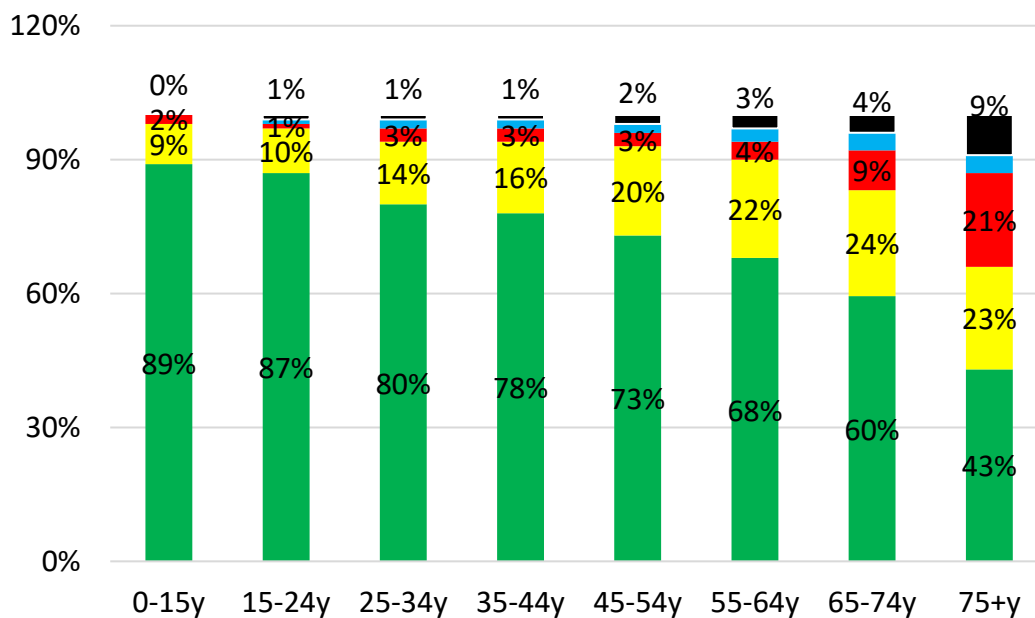
**Graph 6 - 7. TRAUMATIC BRAIN INJURY**

Distribution of discharge disposition for Hawai'i TBI patients, by age group, 2018-2022.

Source: Laulima Data Alliance (2018-2022)



Graph 6



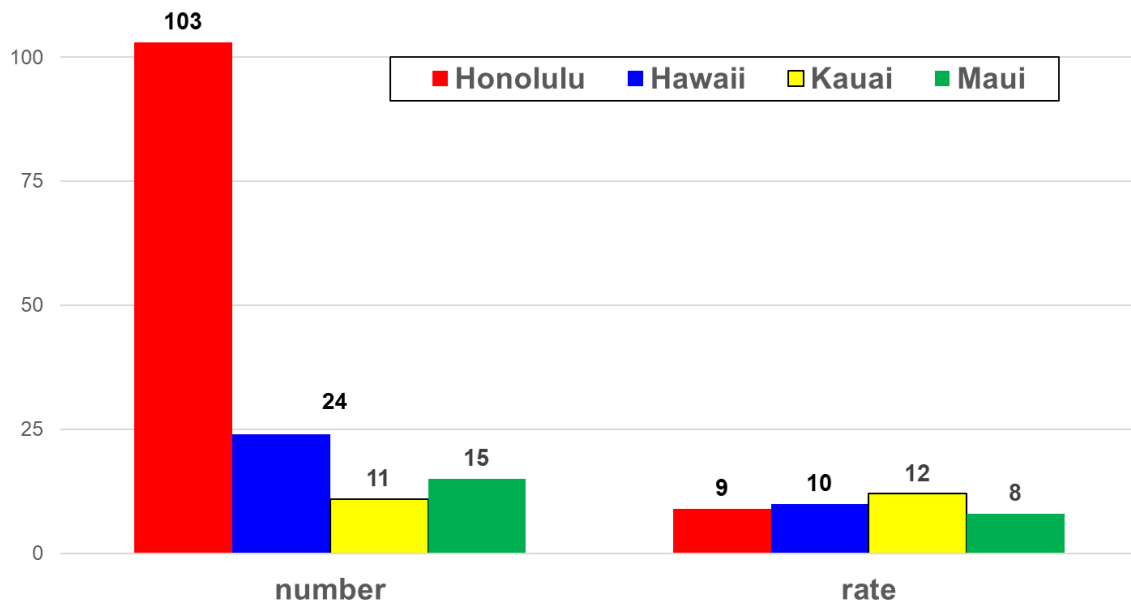
Graph 7

- 1 Graph 6 - 7 includes: non-residents and TBI related fatalities.
- 2 Graph 6 - 7 excludes: “unspecified head injury” documented as the only TBI diagnosis, records not meeting CDC indicators criteria for a TBI, and patients discharged to another short-term acute care facility.

### Graph 8 SPINAL CORD INJURY

Average annual number and age-adjusted rate (/100,000) of SCI in Hawai'i, by county of residence, 2018-2022.

Source: Lailima Data Alliance (2018-2022).

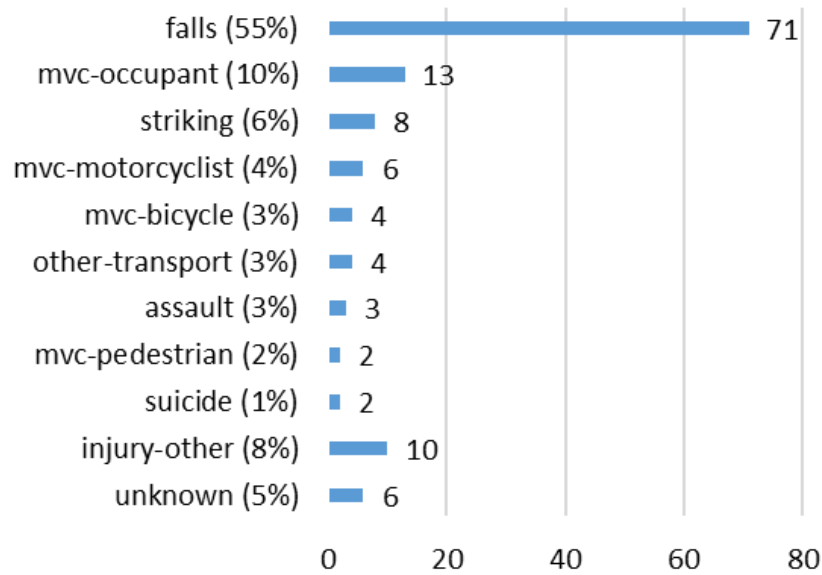


- 1 Graph 8 excludes: non-residents, TBI related fatalities, patients transferred to hospitals other than Tripler Army Medical Center, deleted records not meeting CDC indicators criteria for a TBI, and patients discharged to another short-term acute care facility.
- 2 Observations of SCIs by county:
  - a) Number of SCIs is significantly higher in Honolulu County than all other counties.
  - b) No significant difference between counties in the rate of SCI occurrences.

### Graph 9 SPINAL CORD INJURY

Average annual number of causes of SCI hospitalizations and fatalities in Hawai'i, 2018-2022.  
(mvc= motor vehicle crash)

Source: Lailima Data Alliance (2018-2022).

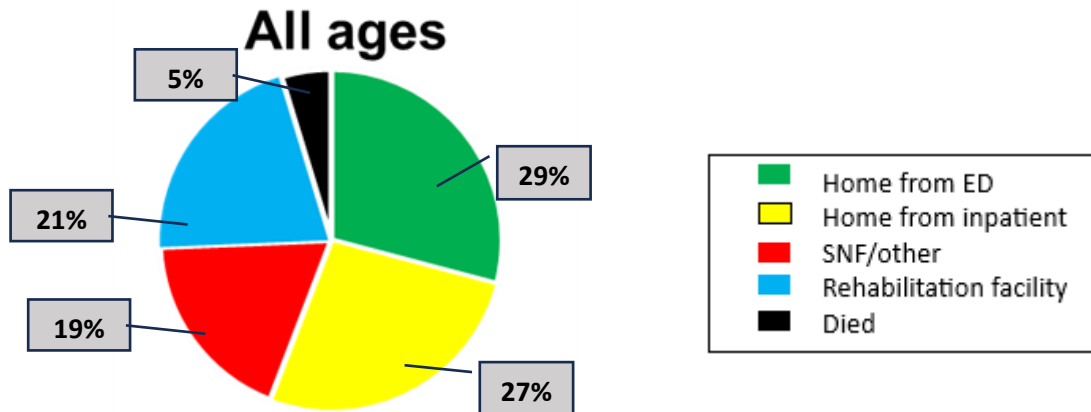


- 1 Graph 9 includes: non-residents and SCI related fatalities.
- 2 Graph 9 excludes: patients transferred to hospitals other than Tripler Army Medical Center, records not meeting CDC indicators criteria for an SCI, and patients discharged alive from the ED or discharged to another short-term acute care facility.

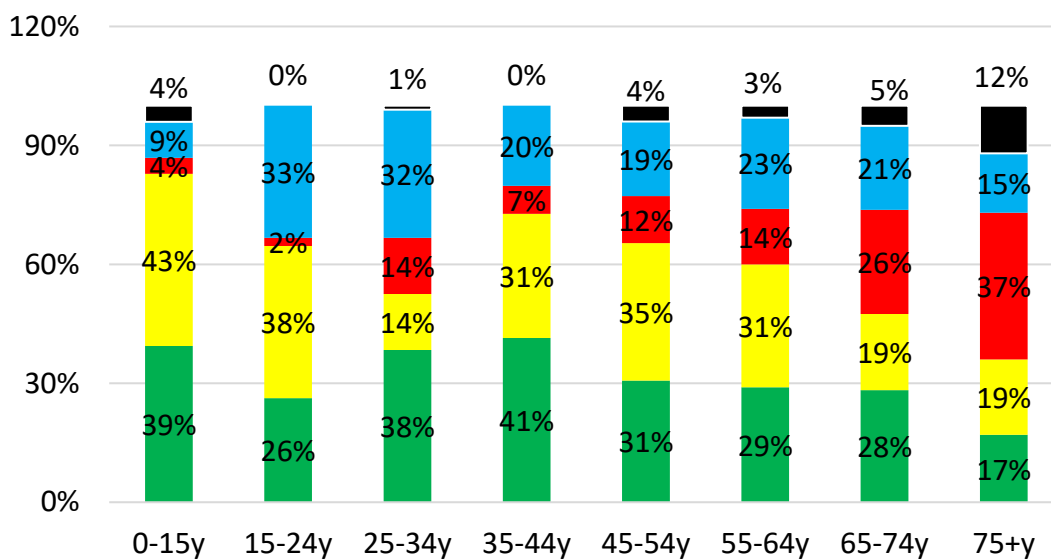
**Graph 10 - 11 SPINAL CORD INJURY**

Distribution of discharge disposition for Hawai'i SCI patients, by age group, 2018-2022.

Source: Laulima Data Alliance (2018-2022)



Graph 10



Graph 11

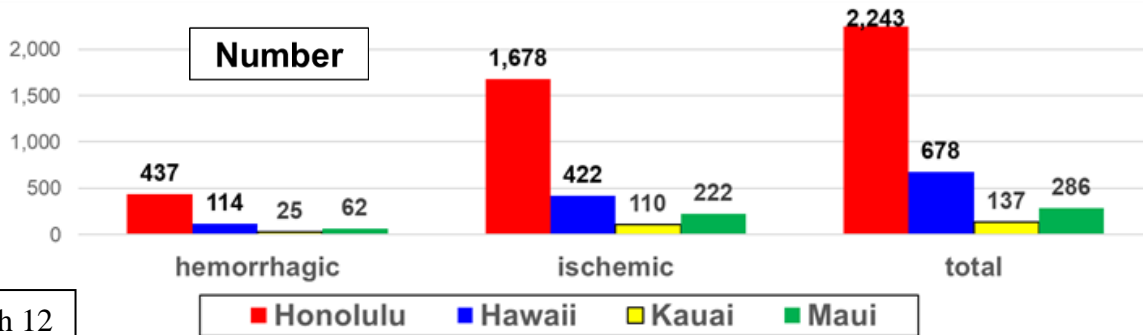
- 1 Graph 10-11 includes non-residents and SCI related fatalities.
- 2 Graph 10-11 excludes: patients transferred to hospitals other than Tripler Army Medical Center, records not meeting CDC indicators criteria for an SCI, and patients discharged to another short-term acute care facility.



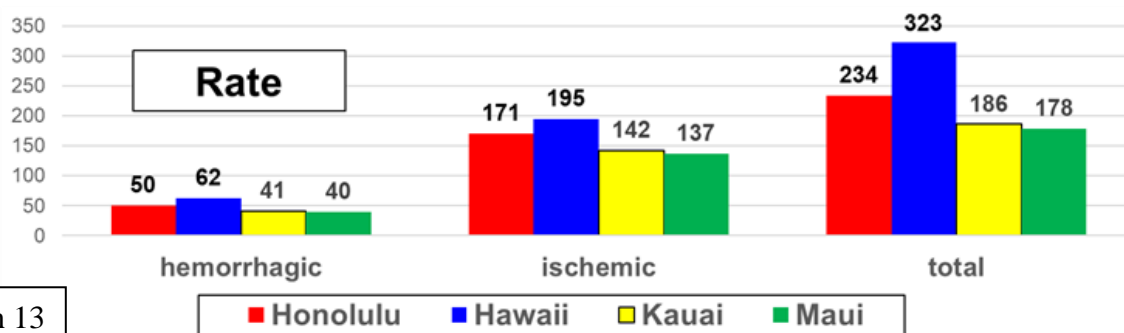
## Graph 12 - 13 STROKE

Average annual number and age adjusted rate (/100,000) of stroke in Hawai'i, by county of residence and type, 2020 -2022. (Includes only residents 20 years of age and older.)

**Source:** Hawai'i Stroke Registry (2020-2022)



Graph 12



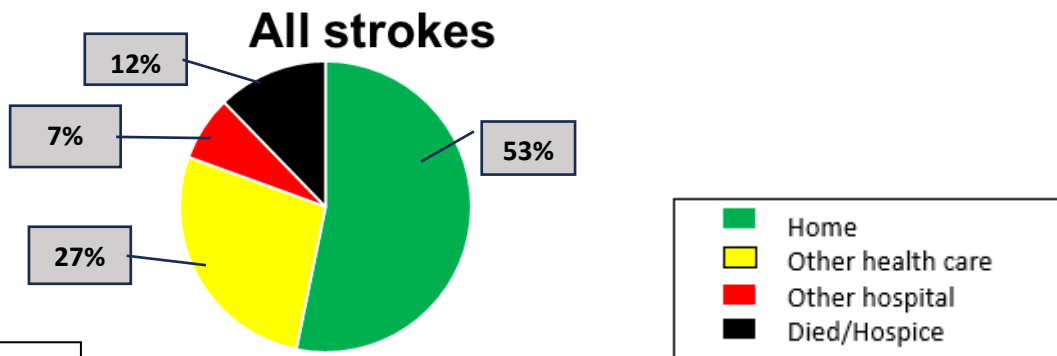
Graph 13

- 1 Graphs 12-13 includes analyses of 2020-2022 records by zip code.
- 2 Graphs 12-13 excludes records reflecting non-resident zip codes.
- 3 Observations on number of strokes:
  - a) Honolulu County is significantly higher than all other counties.
  - b) Hawai'i County is significantly higher than the counties of Kaua'i and Maui.
- 4 Observations on rate of strokes:
  - a) Total rate for Hawai'i County is significantly higher than all other counties.
  - b) Hemorrhagic strokes for Hawai'i County are significantly higher than all other counties.

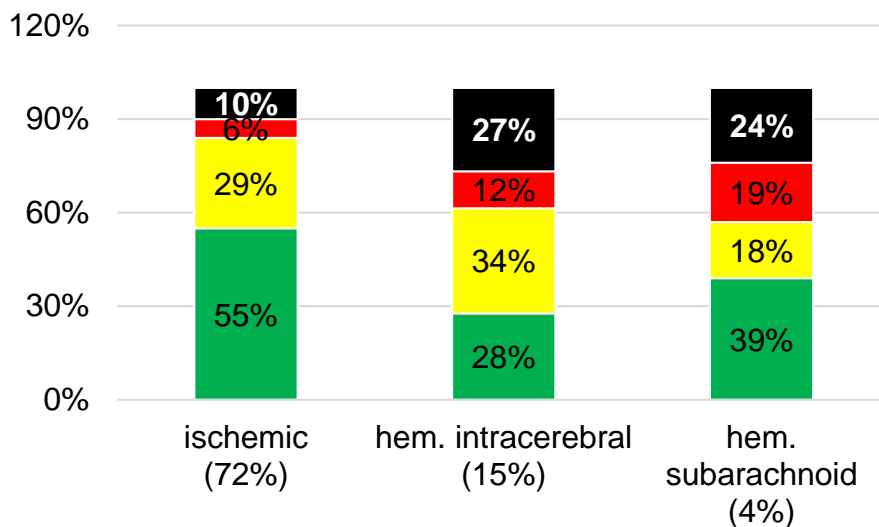
**Graph 14 - 15 STROKE**

Distribution of discharge disposition for Hawai'i stroke patients, 2018-2022.

Source: Hawai'i Stroke Registry (2018-2022).



Graph 14



Graph 15

- 1 Graph 14-15 includes non-residents.
- 2 Observations on discharge disposition for strokes:
  - a) Significant rate of fatalities for hemorrhagic strokes as compared to ischemic strokes.
  - b) Ischemic patients have the greatest percentage being discharged to home, indicating a likelihood that this group enjoys the lowest level of compromise to executive functioning, upon discharge.