

Current landscape of overdose and substance use

Dan Galanis, PhD

***EMS & Injury Prevention System Branch
Hawaii Department of Health***

daniel.galanis@doh.hawaii.gov

Tiana Fontanilla, MPH

***Adult Mental Health Division
Hawaii Department of Health***

tiana.fontanilla@doh.hawaii.gov

Overview of presentation

■ Fatal drug overdoses

Death certificate database

- Comparison with national trends
- Basic description of Hawaii deaths

Detailed data from review of autopsy records and police reports

- SUDORS and NVDRS
 - 2021-2024 (partial)

■ EMS-attended overdoses from fentanyl (2022-2024)

Trends

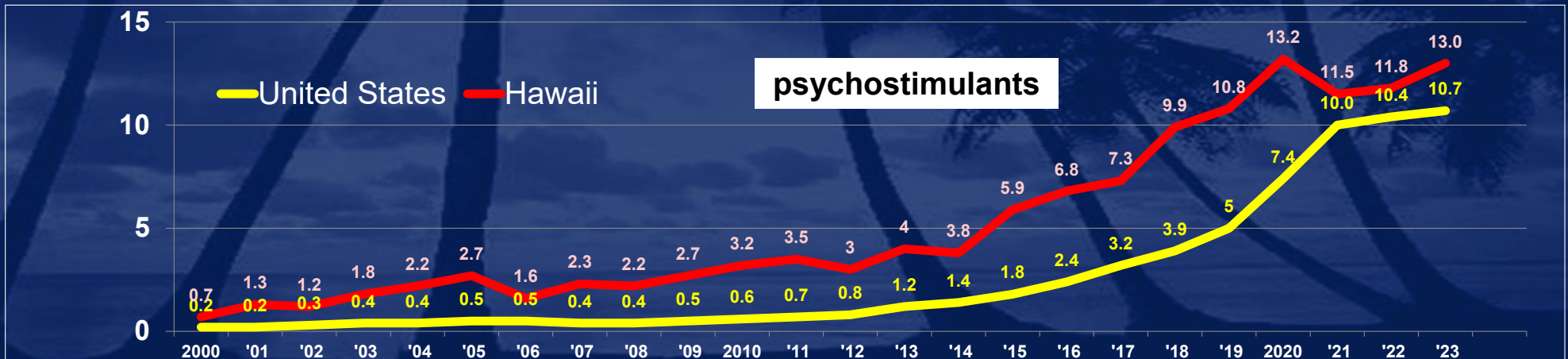
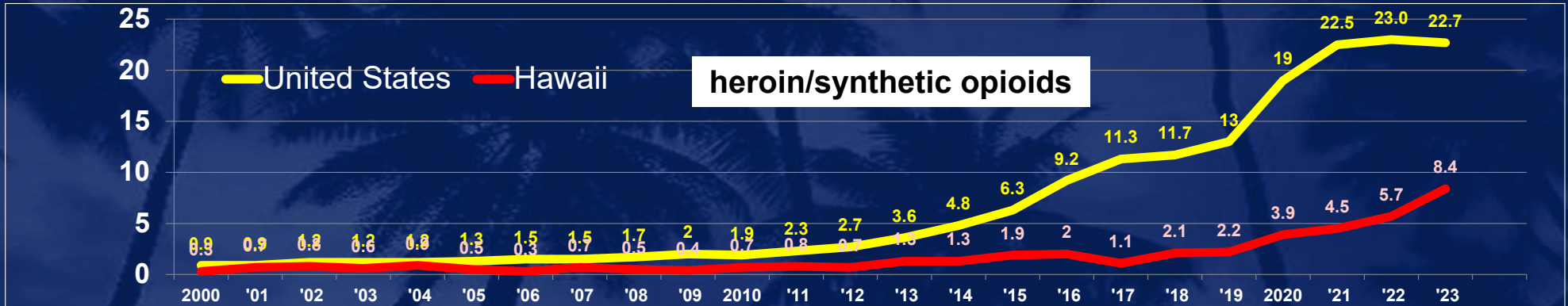
Importance of pre-EMS provision of naloxone

■ Emergency department discharges related to SUD and co-occurring mental illness

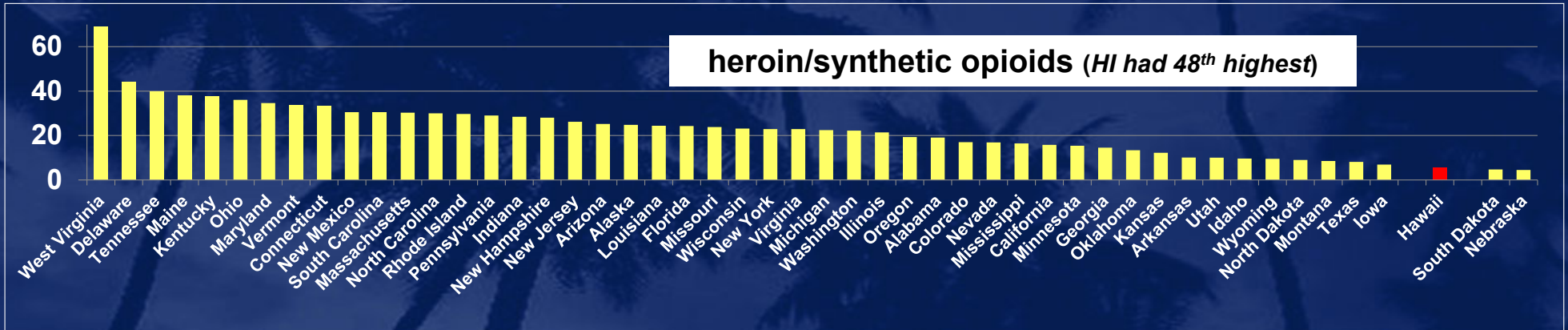
The background of the slide is a dark blue, monochromatic image. It features several palm trees in silhouette, leaning at various angles. The trees are set against a lighter blue background that suggests a sky and a horizon line, possibly representing the ocean. The overall mood is somber and tropical.

Fatal drug overdoses in Hawaii

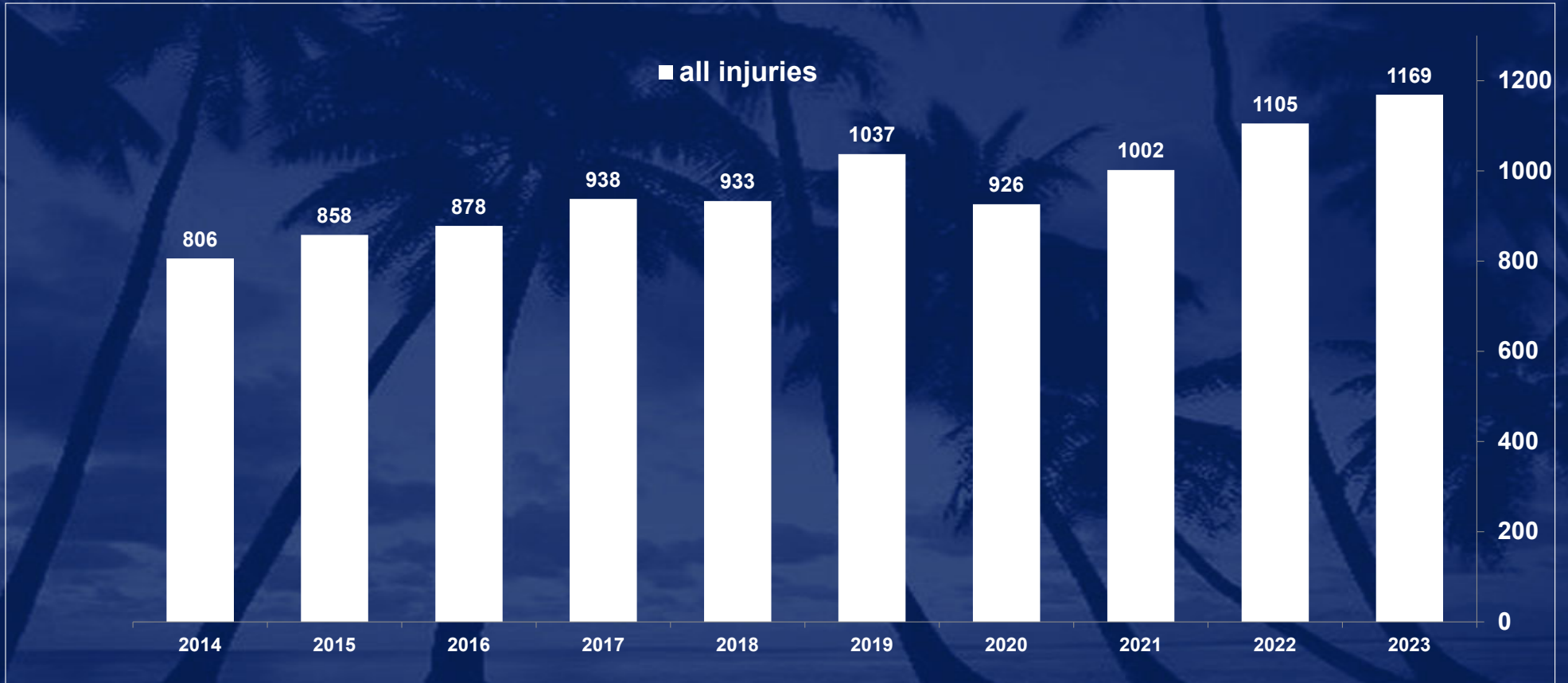
Adjusted overdose fatality rates (/100,000) by substance(s), Hawaii vs. U.S., 2000-2023



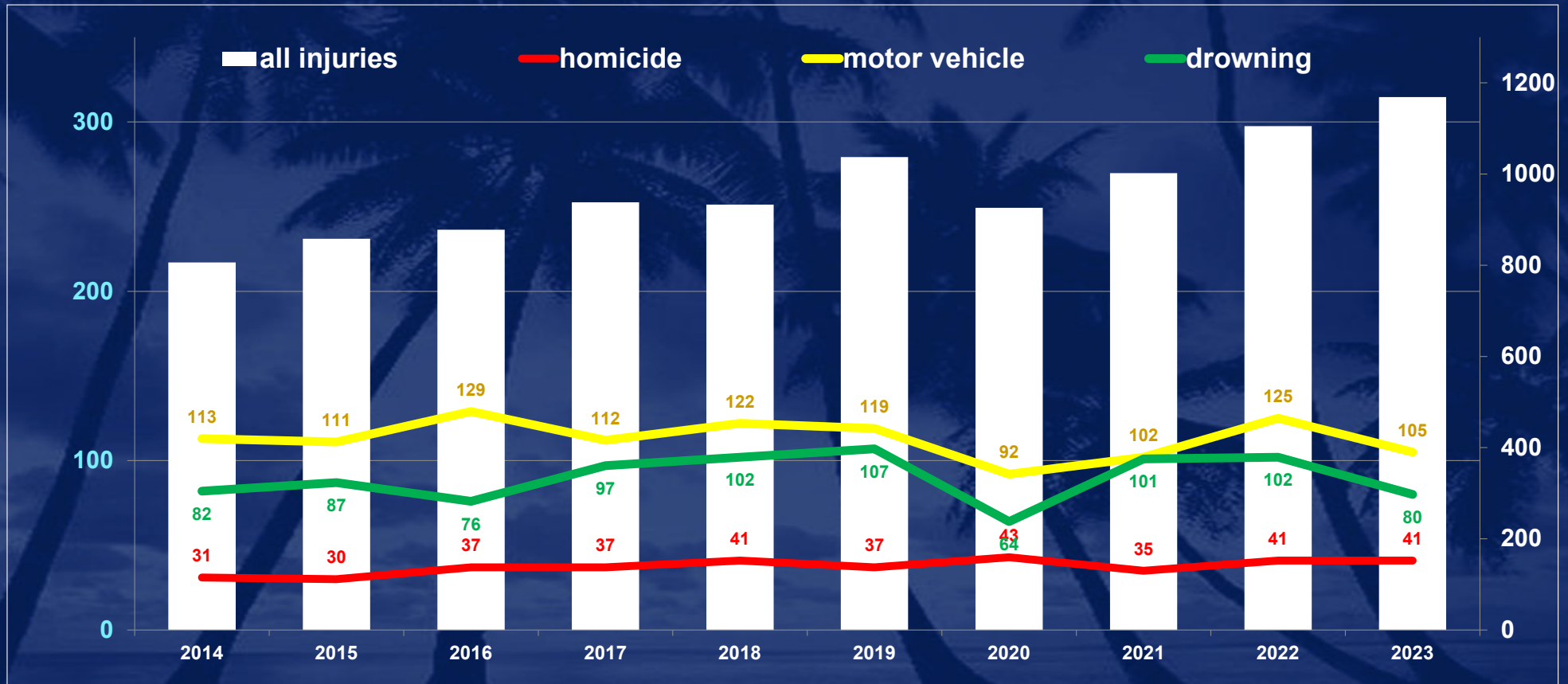
Age-adjusted fatality rates for poisonings by substance(s), by state, 2020-2023



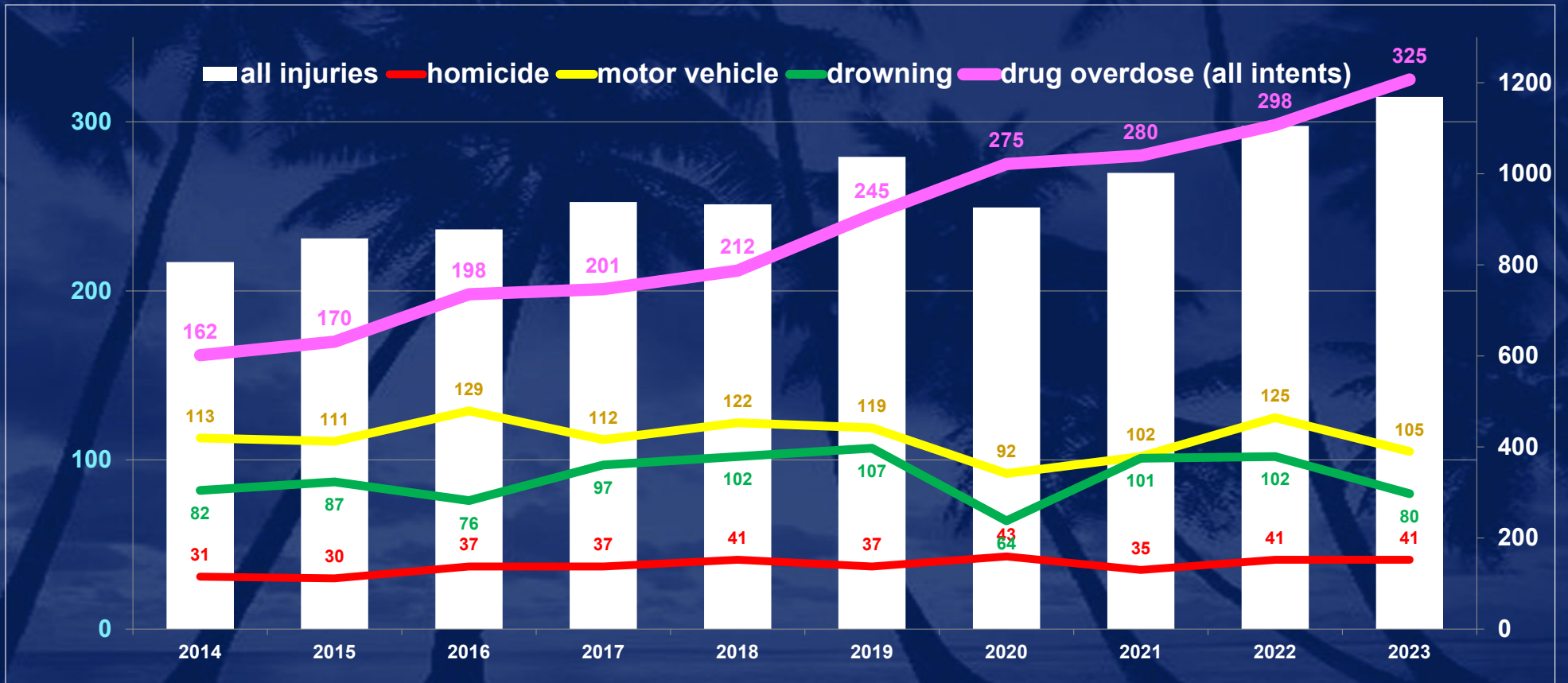
Annual number of fatal injuries in Hawaii, by cause, 2014-2023



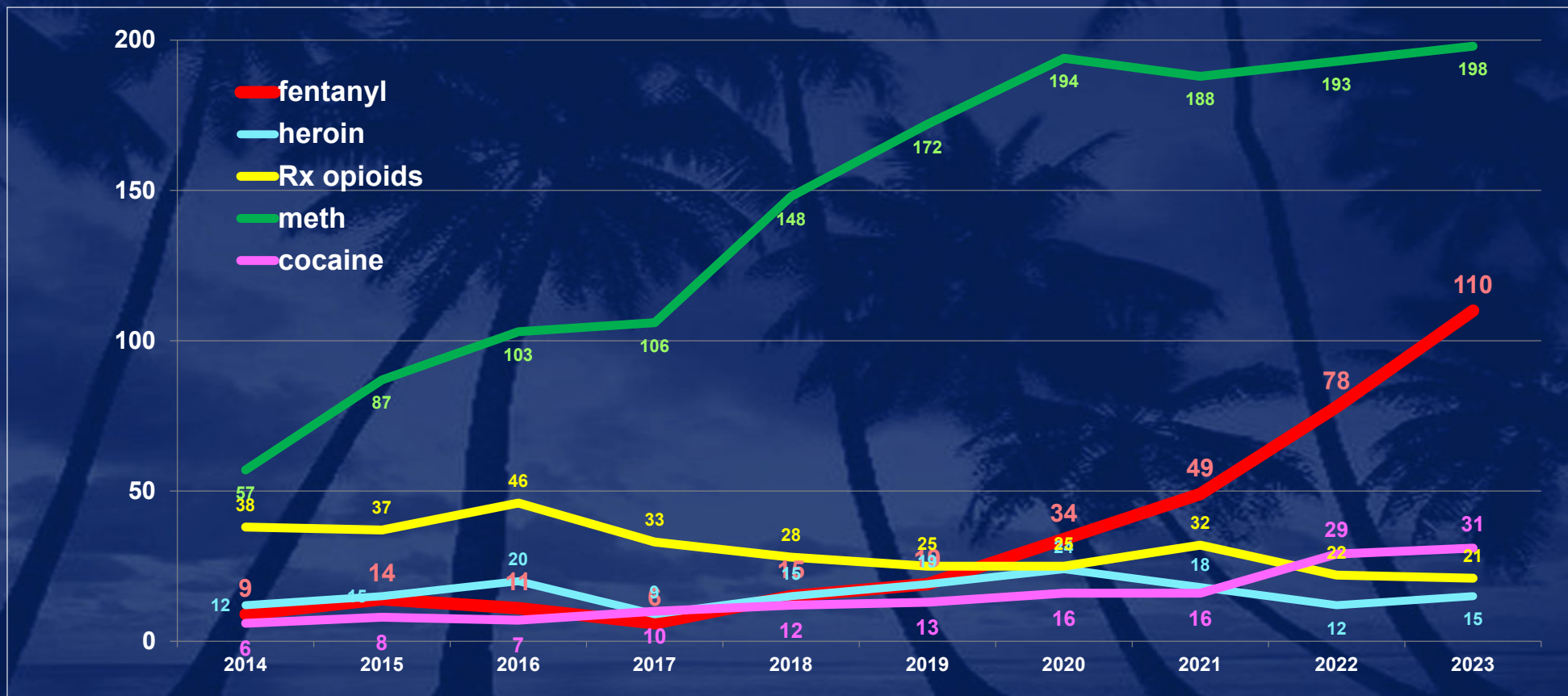
Annual number of fatal injuries in Hawaii, by cause, 2014-2023



Annual number of fatal injuries in Hawaii, by cause, 2014-2023

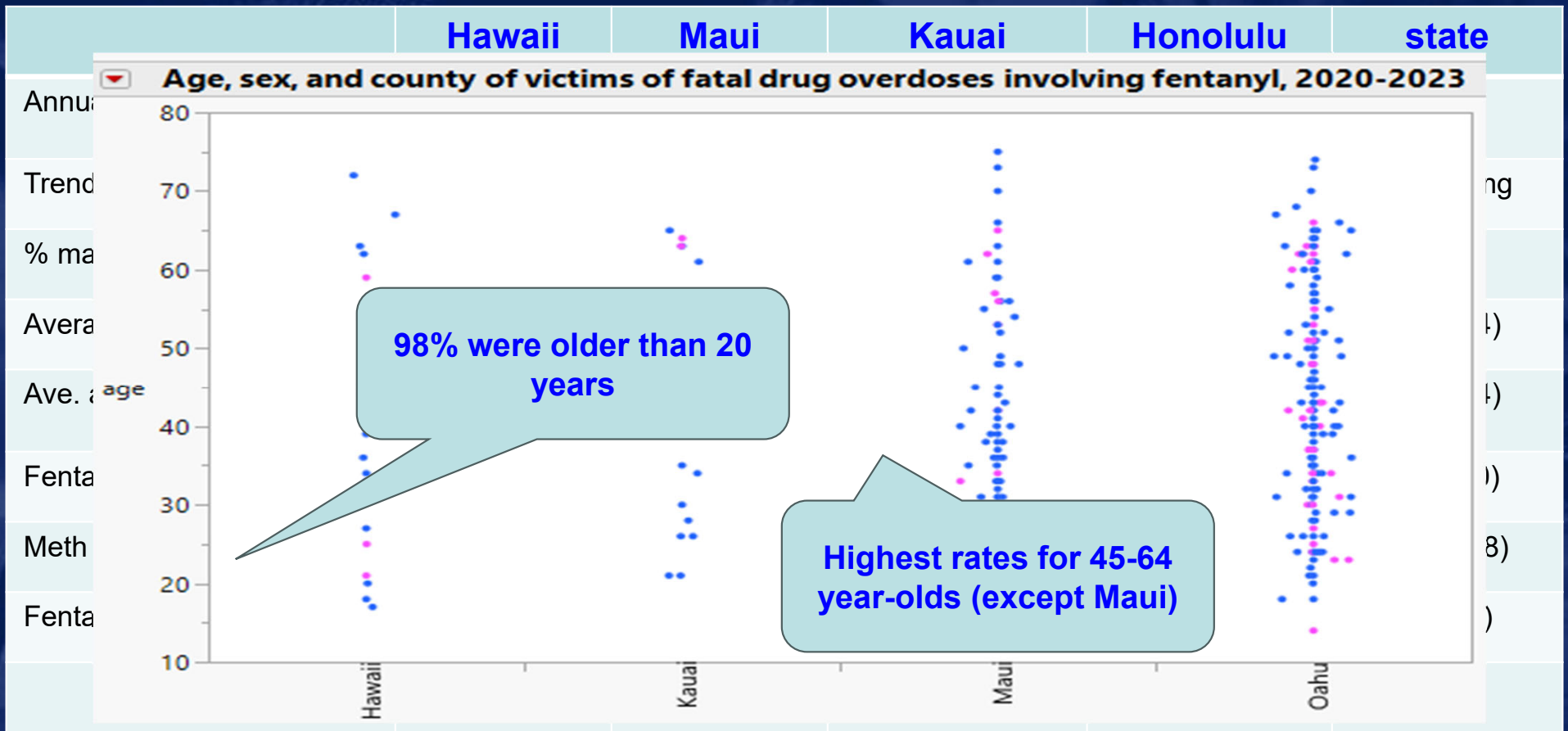


Annual number of fatal drug overdoses in Hawaii, by contributing substance(s), 2014-2023

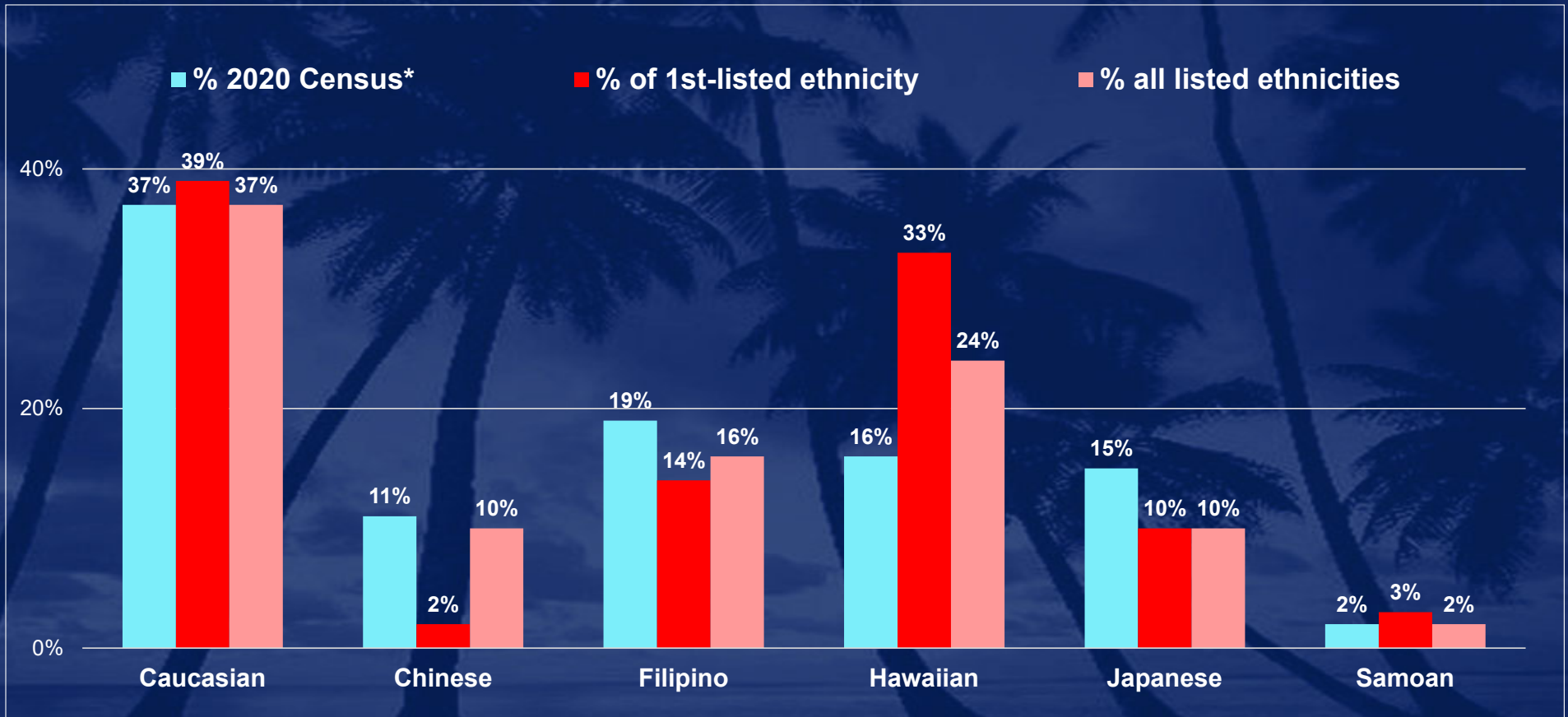


Data from death certificates. Decedents with more than one substance can be counted multiple times

Fatal drug overdoses in Hawaii, by county, 2020-2023



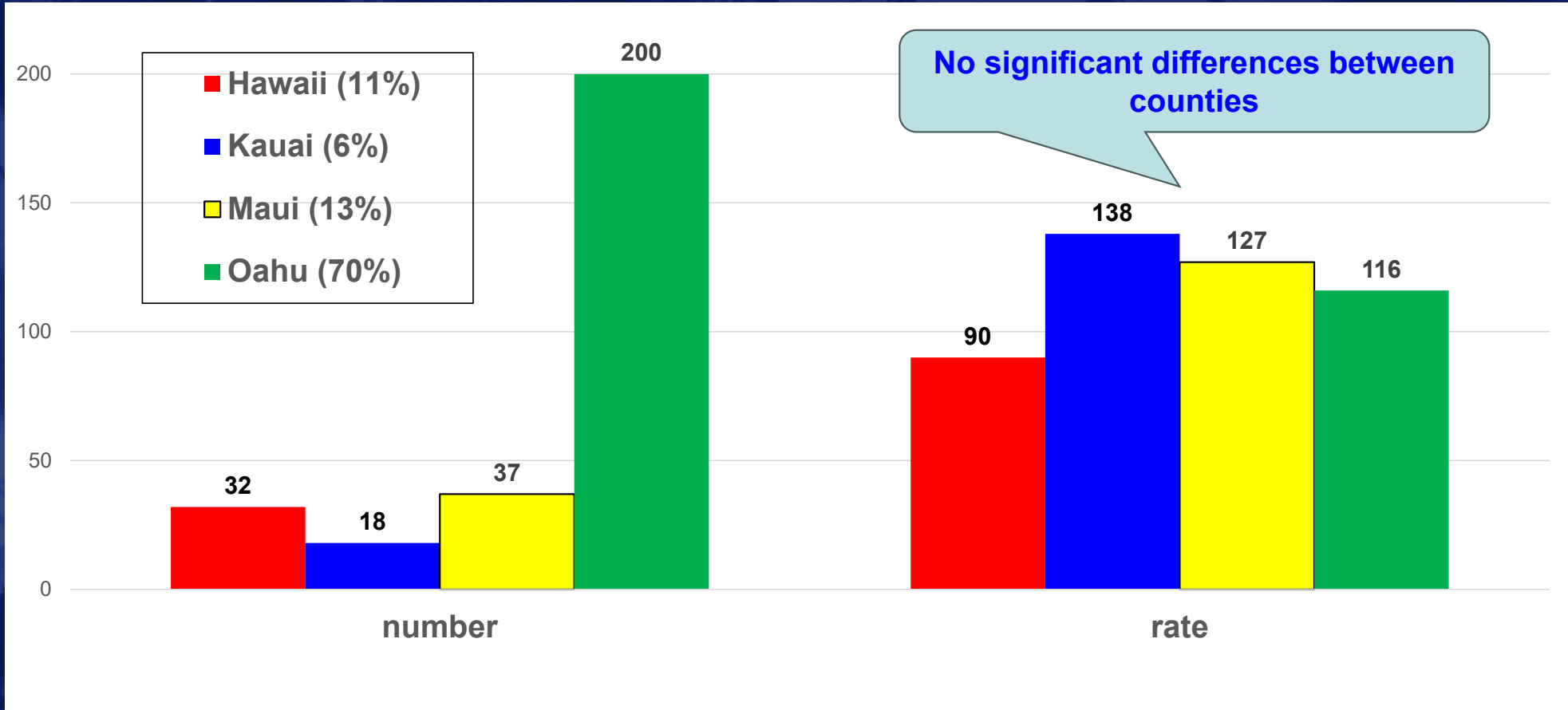
Comparison of distributions of estimated 2020 resident population and ethnicity of drug overdose victims, 2021-2023



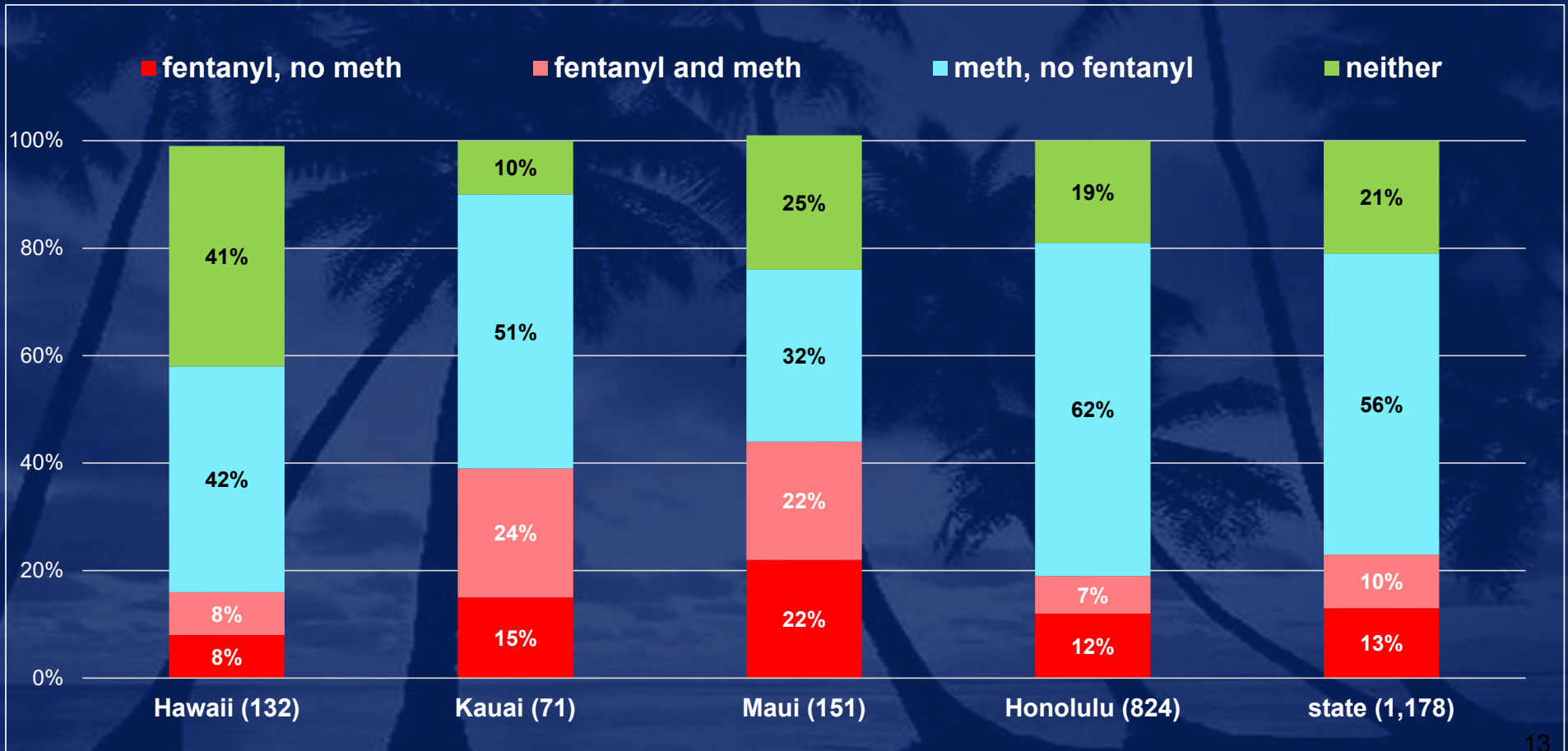
*Percent of the estimated resident population for these 6 ethnicities "alone or in combination"

Average annual number and 4-year age-adjusted rate of fatal drug overdoses in Hawaii, by county, 2020-2023

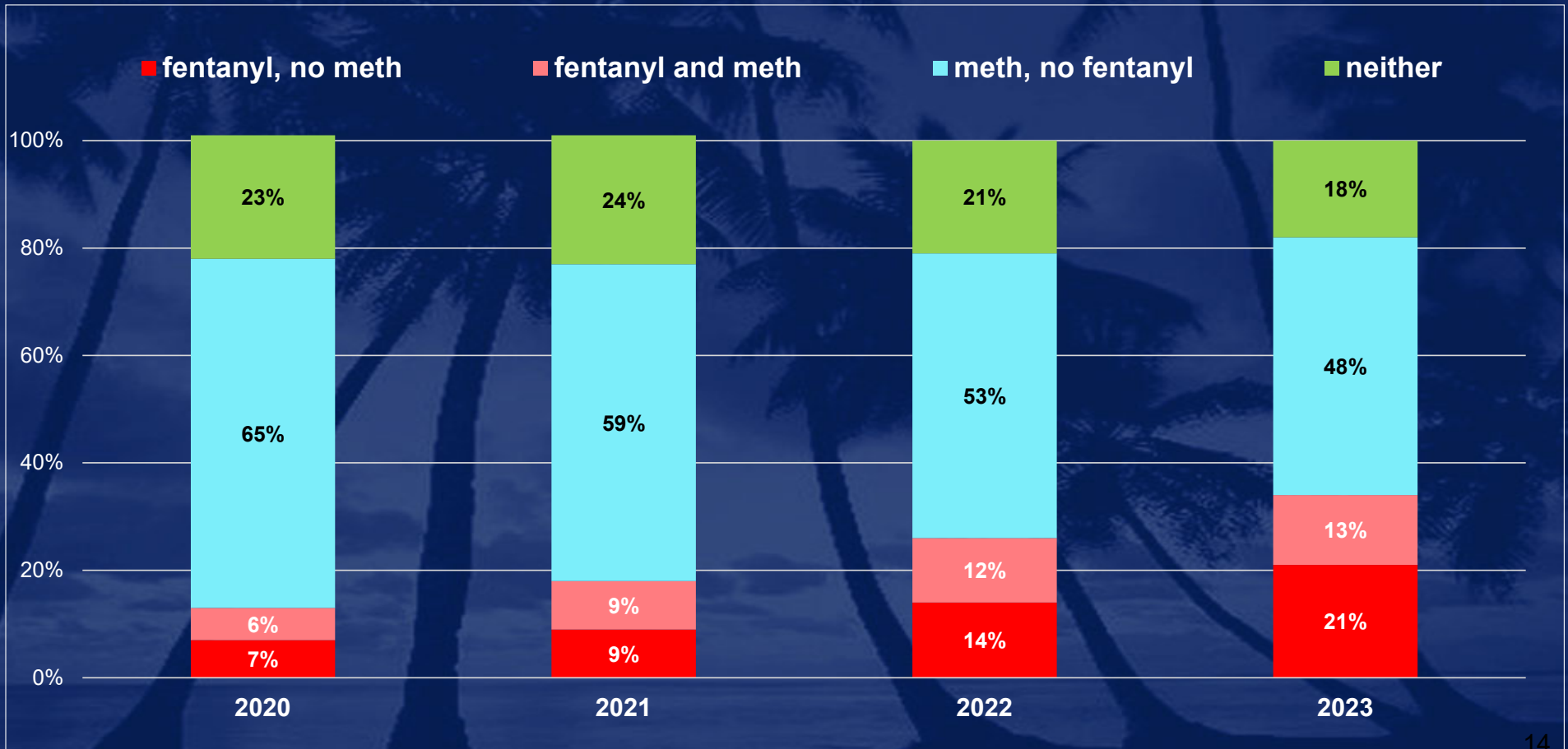
(For residents 20 to 74 years of age)



Distribution of fentanyl and/or methamphetamine among victims of fatal drug overdoses in Hawaii, by county 2020-2023



Distribution of fentanyl and/or methamphetamine among victims of fatal drug overdoses in Hawaii, 2020-2023



The background of the slide is a dark blue, monochromatic image of a tropical beach at sunset or sunrise. Several palm trees are silhouetted against a lighter, hazy sky. The ocean is visible in the lower portion of the image, meeting a dark horizon line.

**Enhanced surveillance of fatal drug
overdoses in Hawaii:
SUDORS and NVDRS**

Summary of data sources on fatal drug overdoses in Hawaii

- **DOH death certificate database**
 - *David Fouse and Brian Pang*
- **SUDORS (State Unintentional Drug Overdose Reporting System)**
 - *Abstractors: Gursimran (Simi) Sidhu, Caroline Delsaux, Shaira Padron, Kendra Bean, Katherine Yang, Mattalin Vojacek, Tyran Terada, Andie Kida*
 - *Supervisors: Michael Phillips, Treena Becker, Tammie Smith, Jeanelle Sugimoto-Matsuda*
- **NVDRS (National Violent Death Reporting System)**
 - *P.I. and do-everything: Meiko Arai*
- **Both SUDORS and NVDRS rely on critical assistance from**
 - *The Police Departments of Kauai, Honolulu, Maui and Hawaii counties, and the Department of the Medical Examiner of Honolulu*
- **Hawaii HIDTA (High Intensity Drug Trafficking Area)**

Summary of data sources on fatal drug overdoses in Hawaii

DOH death certificate database

From 2021-2024*: **1,071** overdoses, as defined by ICD10 codes

(*Data for 2024 incomplete and provisional)

Unintentional or accidental overdoses
(90%, n=964)

Suicides
(7%, n=71)

36% of nonfatal drug overdoses are suicidal (Laulima data 2021-2023)

NVDRS

Linked data for 87% (934)
(93% from 2021-2023)

SUDORS

SUDORS/NVDRS capture of overdose decedents' histories

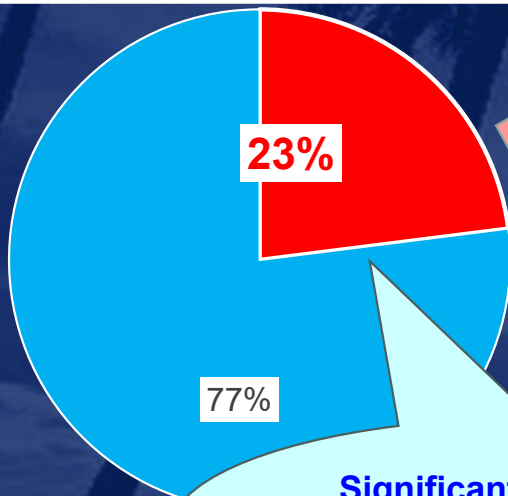
- **Mental health**

- *Current diagnosed mental health problem (“MentalHealthProblem”)*
 - Coding: does not need to have directly contributed to death...includes qualifying MH problems as well as intellectual disabilities, dementias...can include past treatments unless specifically noted problem has been resolved
- *Type of mental illness diagnosis (“MentalHealthDiagnosis”)*
- *Current depressed mood (“DepressedMood”)*
 - Coding: victim perceived by self or other to be depressed at time of injury...does not need to be clinical diagnosis, or depression directly contributed to death
- *Current treatment (“MentalIllnessTreatmentCurrnt”)*
 - Coding: includes current rx for psychiatric meds, saw a MH professional with the past 2 months...includes tx for substance abuse...not coded on solely positive tox for rx meds
- *Non-adherence to MH treatment (“TreatmentNonAdherence”)*
 - Coding: victim did not participate in prescribed regimen/did not follow tx plan of MH professional...includes non-adherence due to barriers beyond victims control
- *Ever being treated for mental health problem (“HistoryMentalIllnessT...”)*

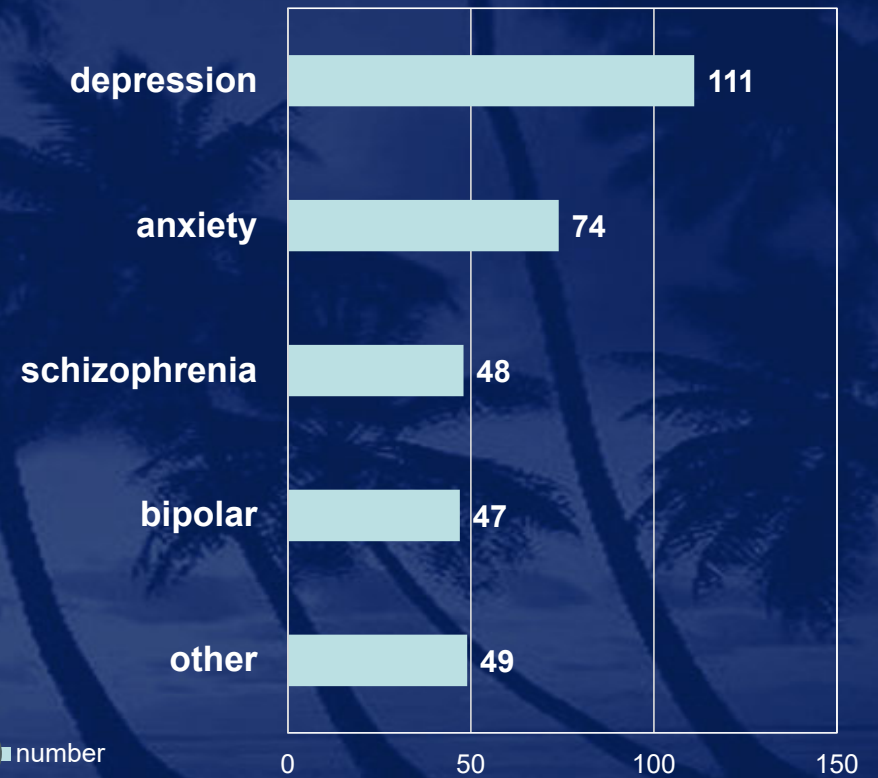
Current diagnosed mental health problem among victims of fatal drug overdoses in Hawaii (n=934)

Current dx MH problem

■ yes ■ no (or blank)



Significantly higher for Oahu victims vs. Neighbor Islands (26% vs. 17%)



SUDORS/NVDRS capture of overdose decedents' histories (cont.)

• Toxicology

- *Alcohol test status and results*
- *Drug test status and results*
 - Summary categories: amphetamines, antidepressants, antipsychotics, benzos, barbiturates, anticonvulsants, muscle relaxants, opiates, cocaine, and marijuana

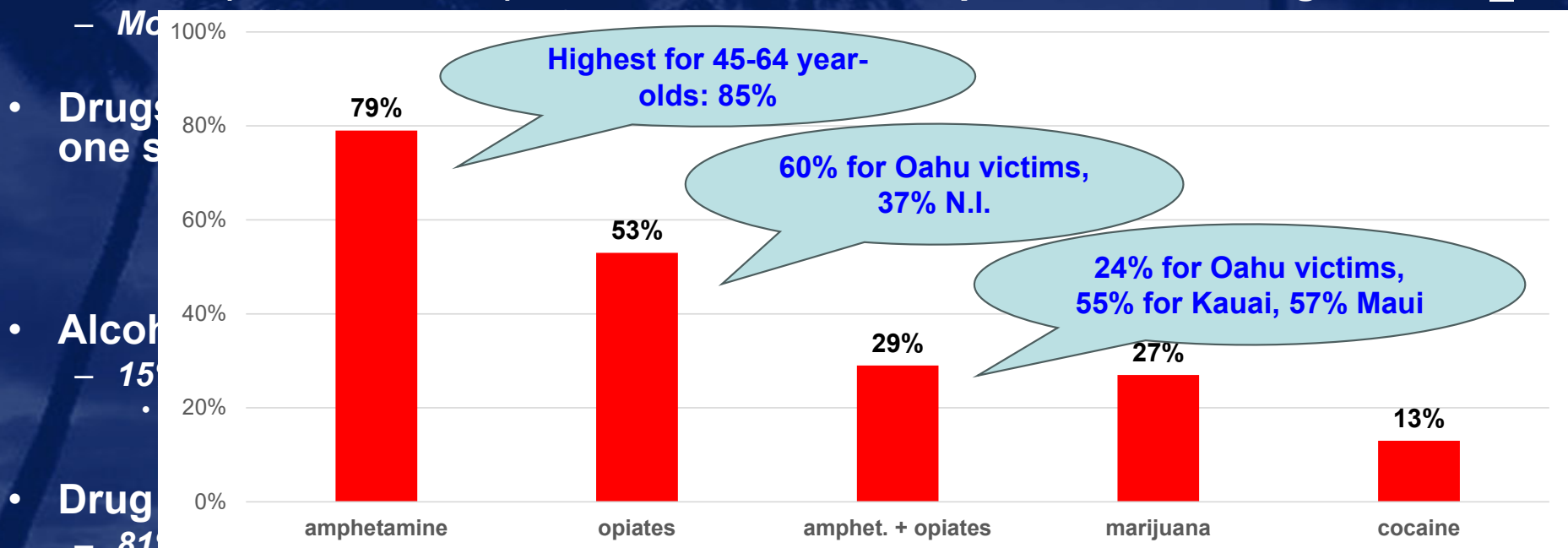
• Substance use

- *Alcohol dependence or problem (“AlcoholProblem”)*
 - Coding: if victim perceived by self or other to have a problem with or addicted to...does not have to be directly related to the death...can be a sober person participating in rehab or treatment
- *Alcohol was a crisis (“CrisisAlcoholProblem”)*
 - Coding: includes relapsed alcoholic, or alcohol causes a conflict at work just before death
- *Drug (non-alcohol) dependence or problem (“SubstanceAbuseOther”)*
 - Coding: if victim perceived by self or other to have a problem with or addicted to...does not have to be directly related to the death...can be a sober person participating in rehab or treatment...if victim used illicit drugs (excepting marijuana, w/o evidence of addiction)
- *Drug problem was a crisis (“CrisisAlcoholProblem”)*
 - Coding: includes relapses near death, or use causes a conflict at work just before death

SUDORS/NVDRS capture of overdose decedents' histories (cont.)

• Toxicology

- Alcohol (85% with data): 14% not tested, 13% positive, including 8% BAC_≥.08



- Drug
- 81% for males vs. 68% for female victims
- 82% for Oahu victims vs. 68% for Neighbor Islands
- No clear associations age group

SUDORS/NVDRS capture of overdose decedents' histories (cont.)

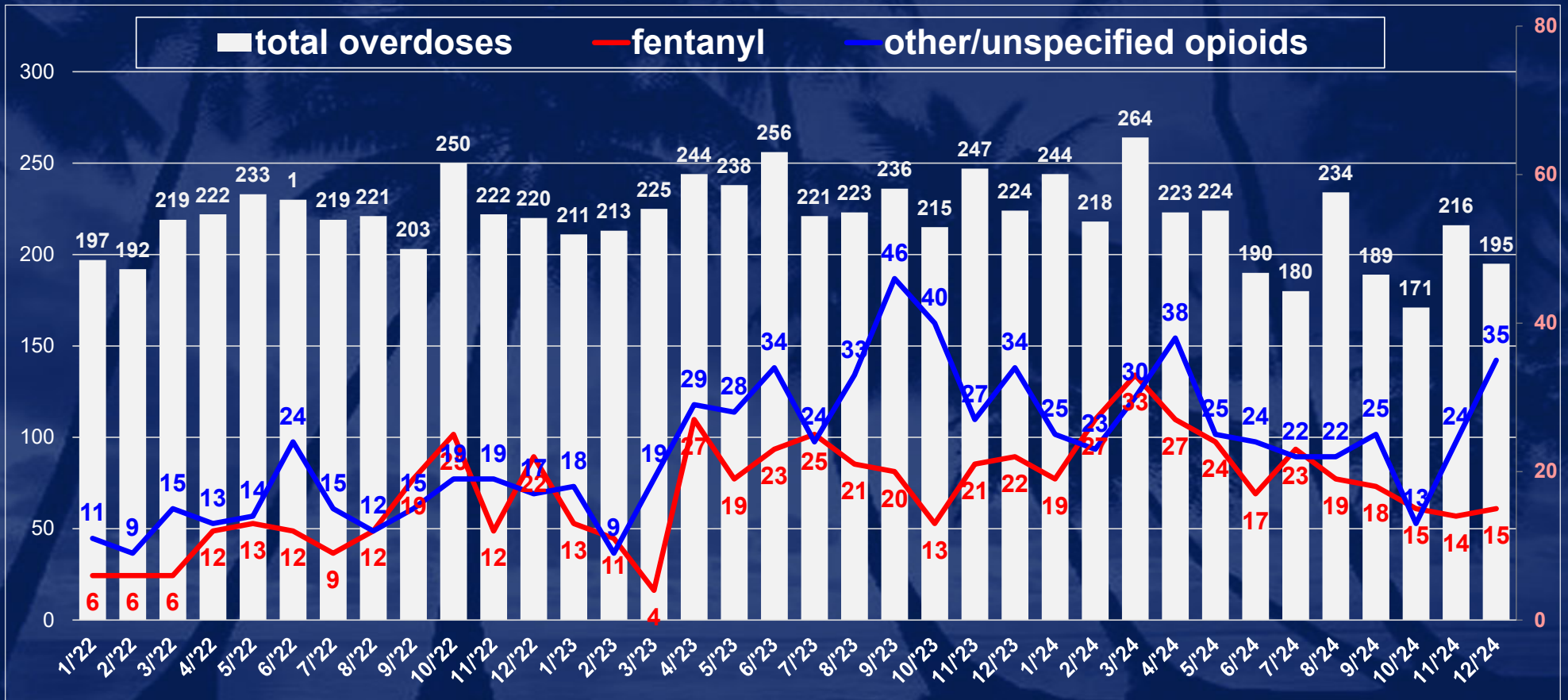
- **Suicidality**

- **Background and context**: Overdoses account for only about 9% of deaths by suicides, and Suicide Prevention generally considers intent more than mechanism
 - →
- **Suicide Prevention is best informed using NVDRS records for all mechanisms (principally hanging and firearms) vs. drug overdoses in isolation**
 - *History of suicide attempts (“SuicideAttemptHistory”)*
 - *History of suicidal thoughts/plans (“SuicideThoughtHistory”)*
 - *Disclosed suicidal thoughts/plans (“SuicideIntentDisclosed”)*
 - *Disclosed to whom (“DisclosedIntentToWhom”)*
 - *Left a suicide note (“SuicideNote”)*

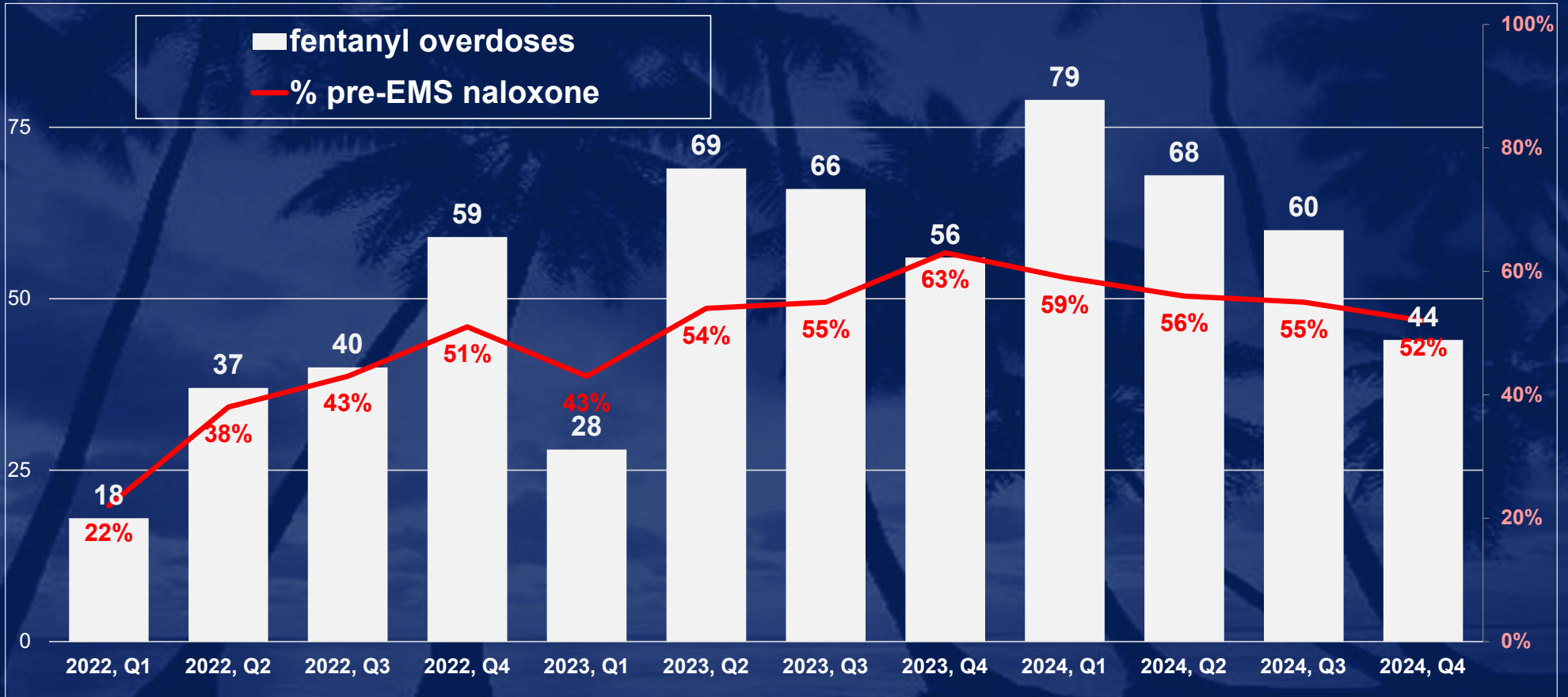
The background of the slide features a dark blue, monochromatic image of several palm trees leaning towards the right. The trees are silhouetted against a lighter blue sky and a faint horizon line representing the ocean. The overall aesthetic is clean and professional, with a tropical theme.

EMS-attended fentanyl drug overdoses in Hawaii

Monthly number of EMS-attended overdoses, total and by opioid type, 2022-2024

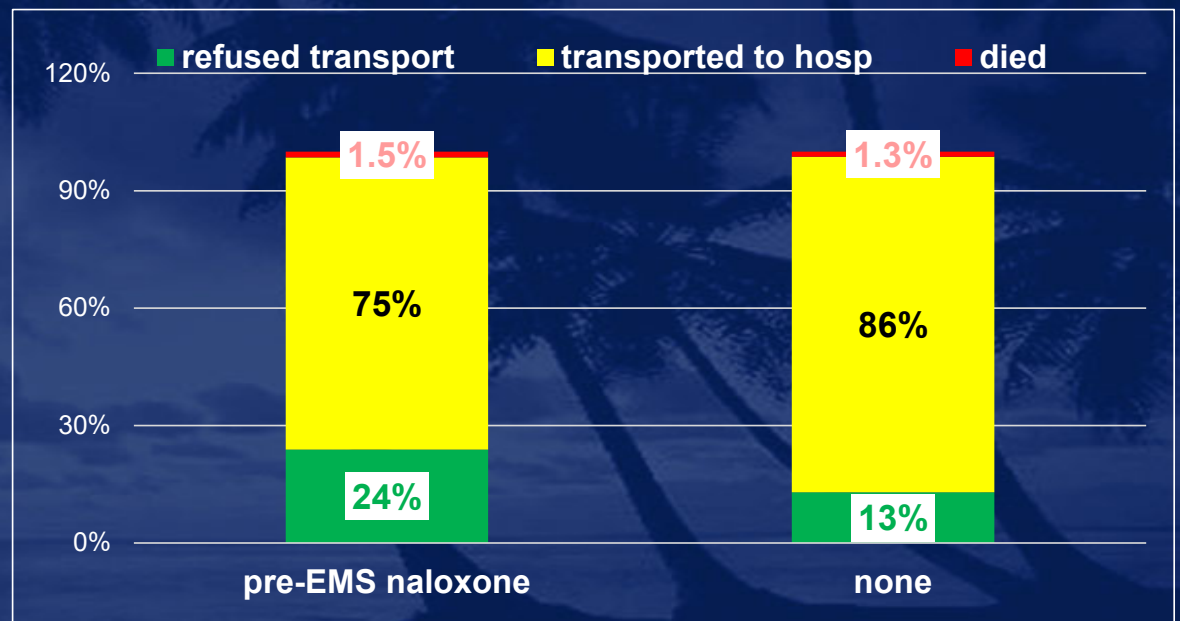
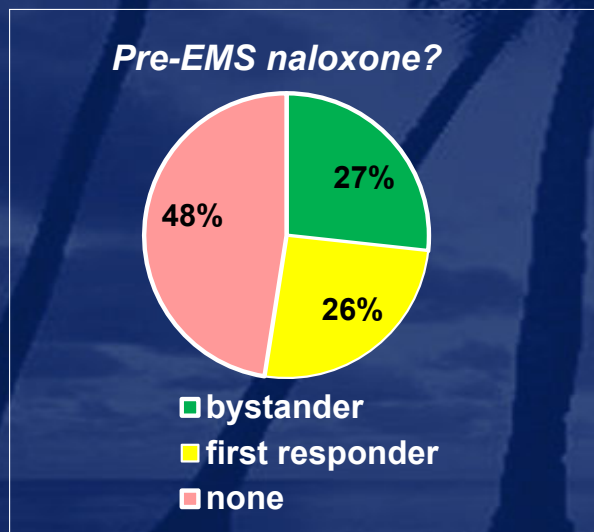


Quarterly number of EMS-attended fentanyl overdoses, by provision of naloxone prior to EMS arrival, 2022-2024



Discharge disposition for EMS patients with fentanyl overdoses, by pre-EMS naloxone status, 2022 – 2024 (n=624)

- Pre-EMS naloxone generally increased to peak near end of 2023 (~60%), slight decrease since
- 52% overall: Highest for patients on Maui (68%) and Kauai (53%) counties, lowest for Big Island (43%)
- Patients with pre-EMS naloxone 111% more likely ($p=0.0007$) to refuse transport, after statistical adjustment for age, sex and EMS response times to the scene



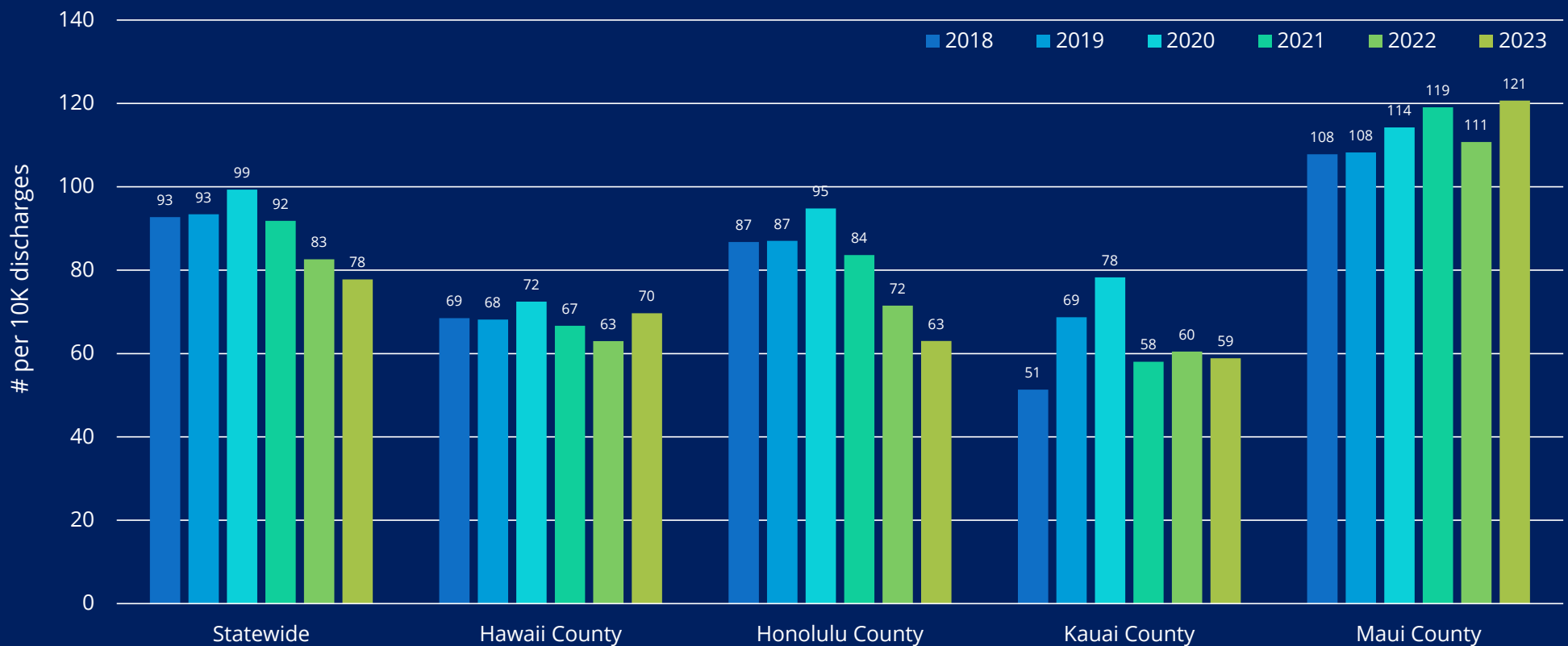
Emergency Dept Discharges Related to Substance Use Disorders and Co-occurring Mental Illness

Tiana Fontanilla, MPH
Epidemiologist

Adult Mental Health Division, Behavioral Health Administration
Hawaii State Department of Health

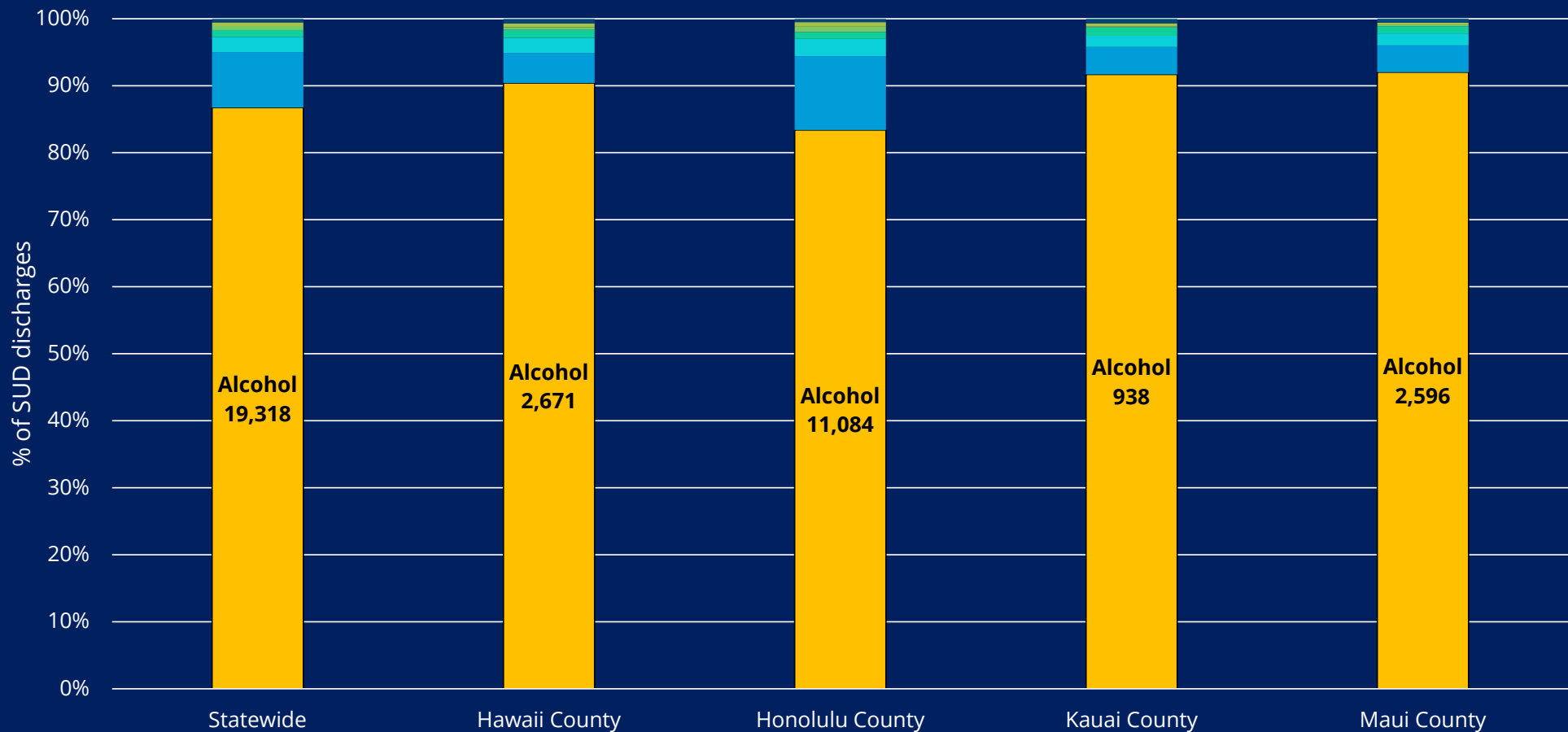
Hawaii Overdose Initiative
January 8, 2025

Emergency Dept Discharges with Primary Diagnosis of Substance Use Disorder, CY 2018 - 2023

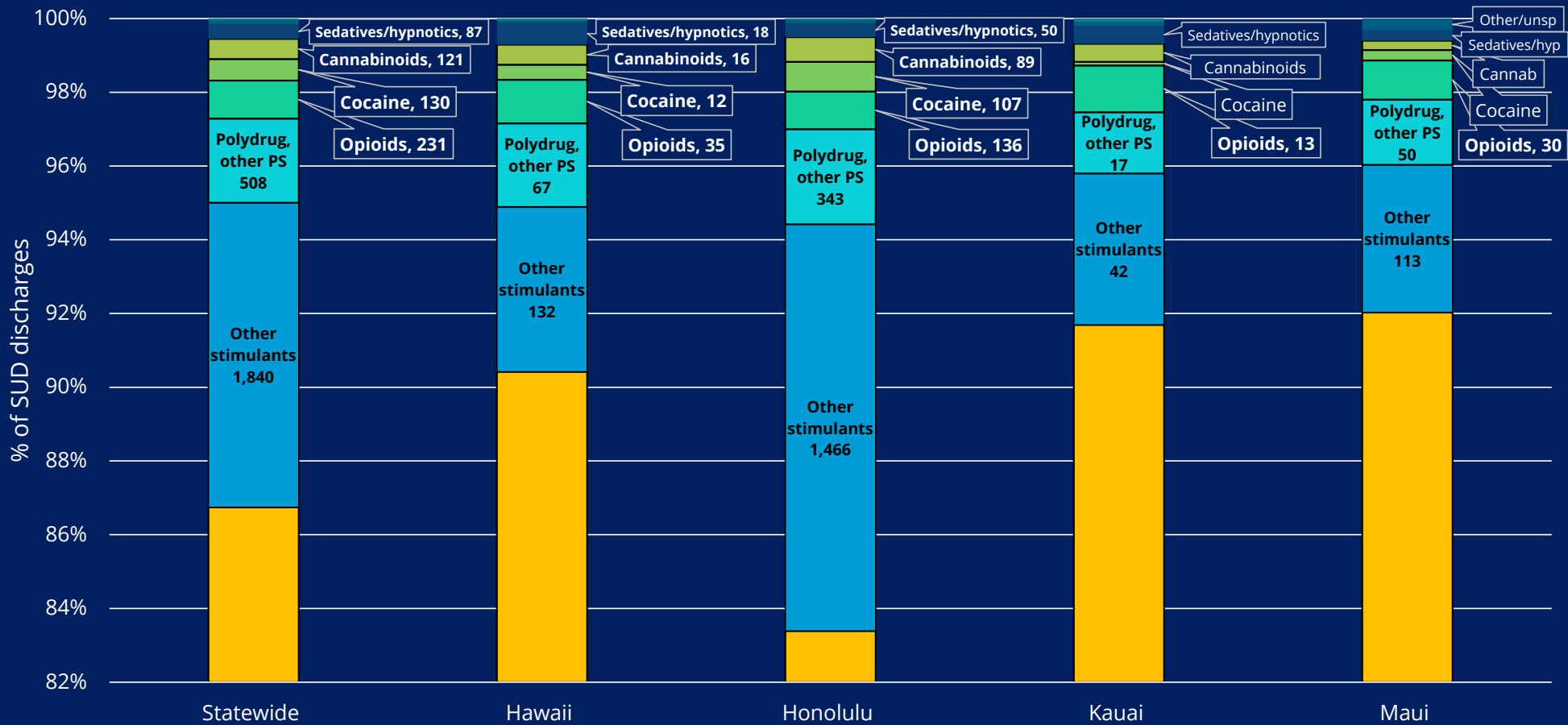


Note: Substance Use Disorders include diagnosis codes from the F10 through F19 ICD-10 code groups, which code for mental and behavioral disorders due to psychoactive substance use.

Emergency Dept Discharges with Primary Diagnosis of Substance Use Disorder, CY 2018 - 2023



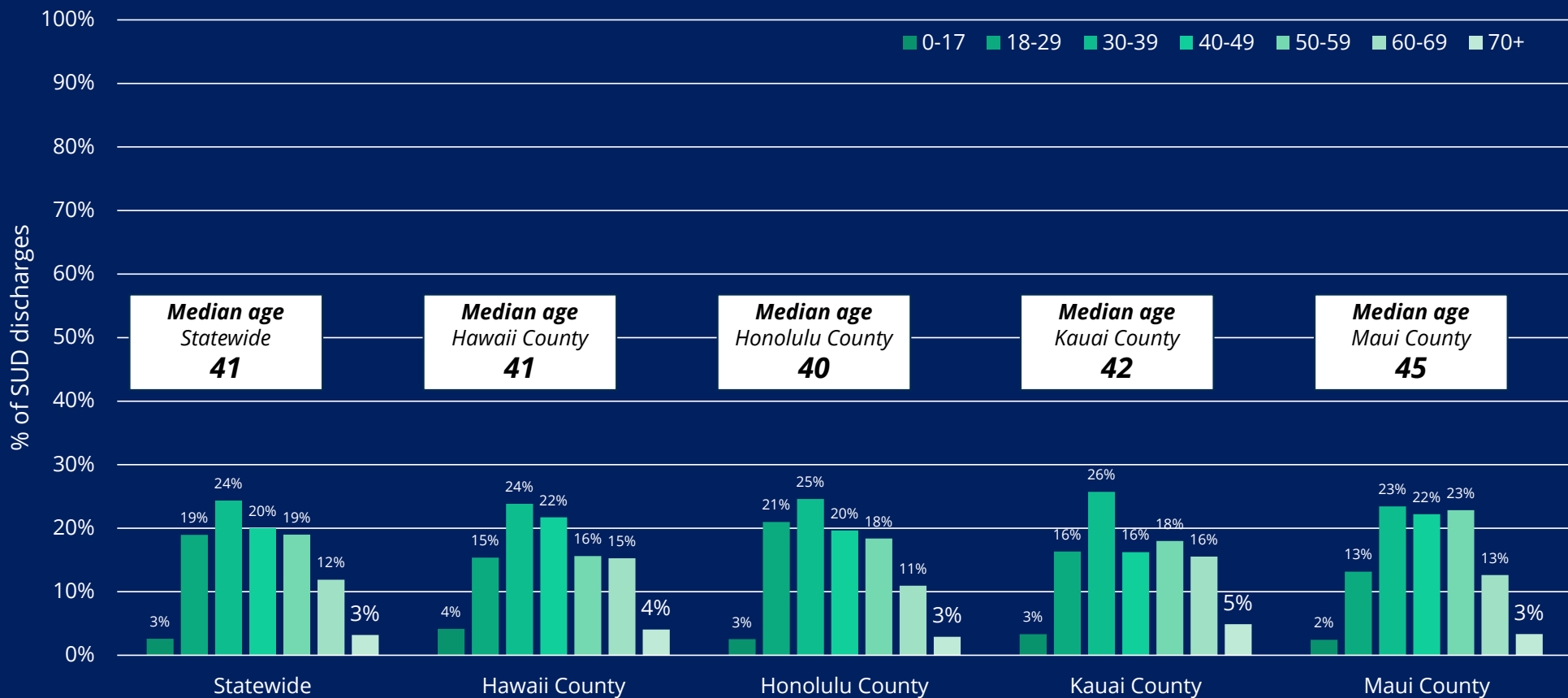
Emergency Dept Discharges with Primary Diagnosis of Substance Use Disorder, CY 2018 - 2023



PS = psychoactive substance

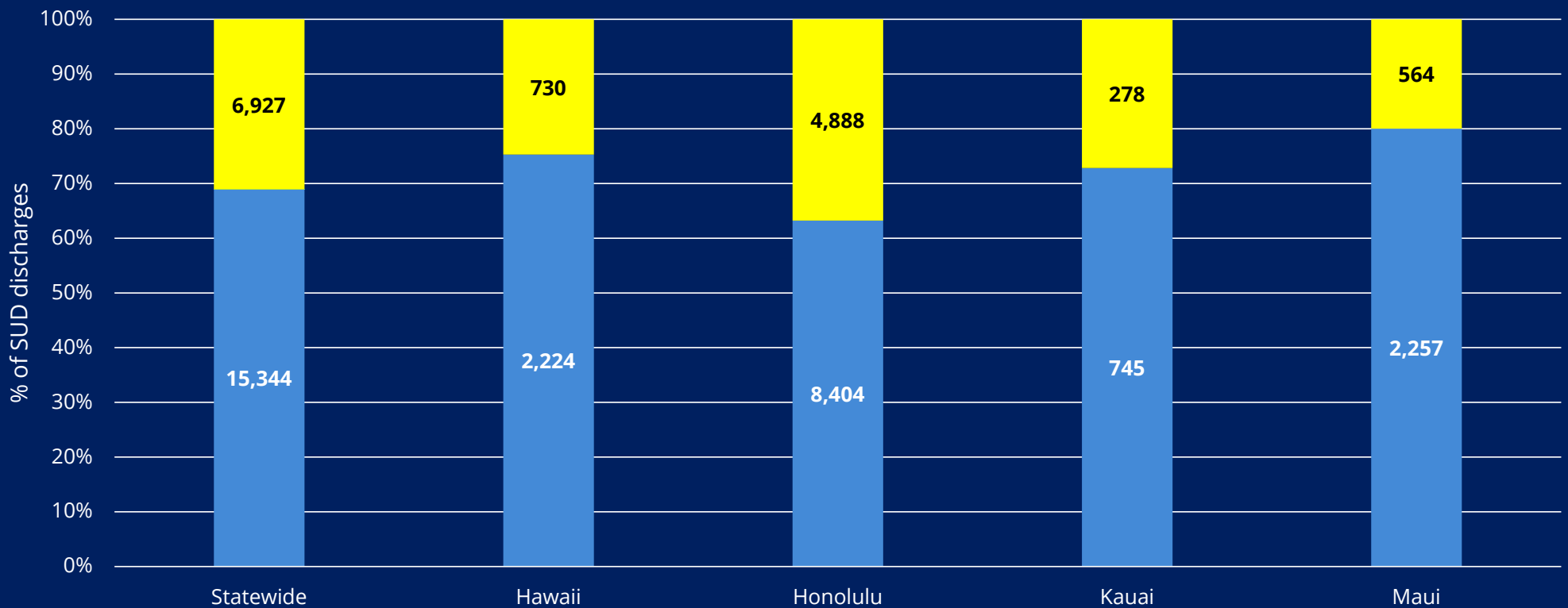
Notes: "Other stimulants" category includes meth. Values not provided are suppressed (<10), including "other/unspecified" and "hallucinogens".

Emergency Dept Discharges with Primary Diagnosis of Substance Use Disorder, CY 2018 - 2023



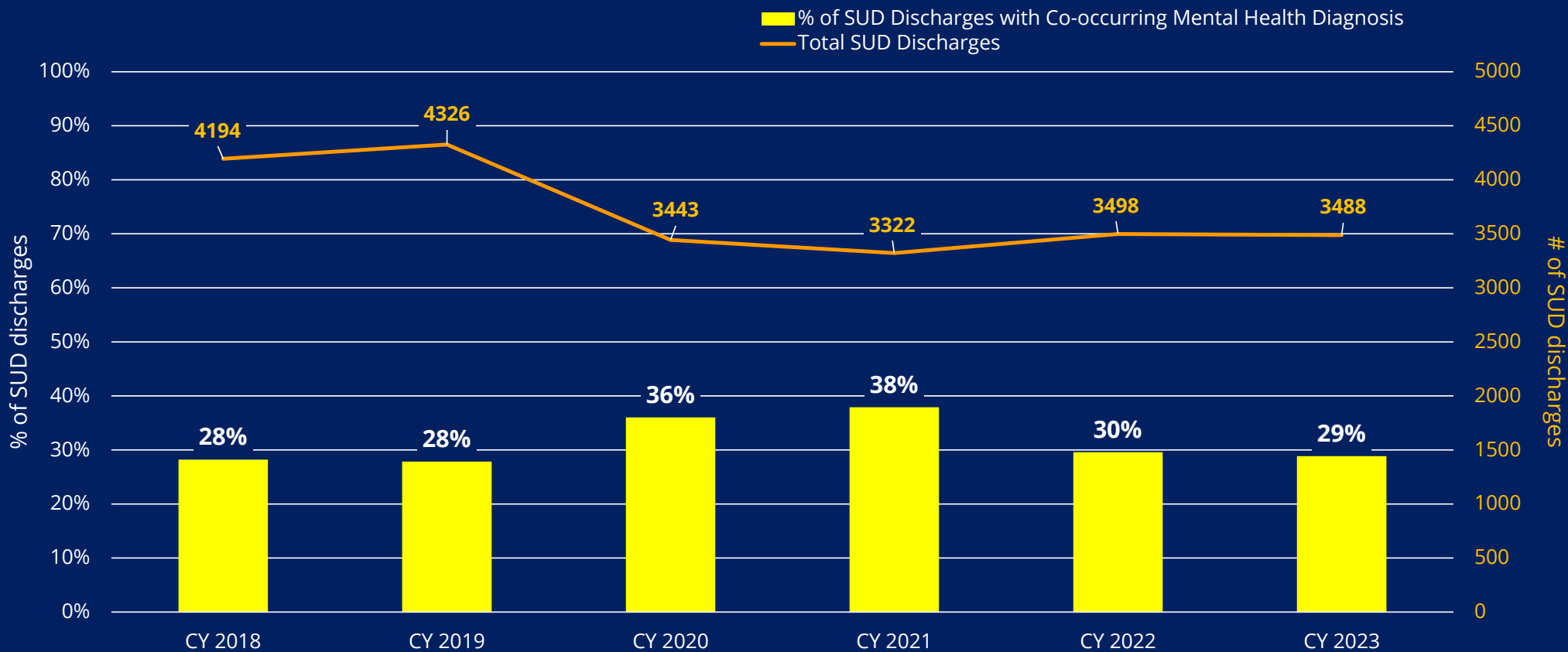
Emergency Dept Discharges with Primary Diagnosis of Substance Use Disorder, CY 2018 - 2023

■ SUD Discharges without Co-occurring Mental Health Diagnosis

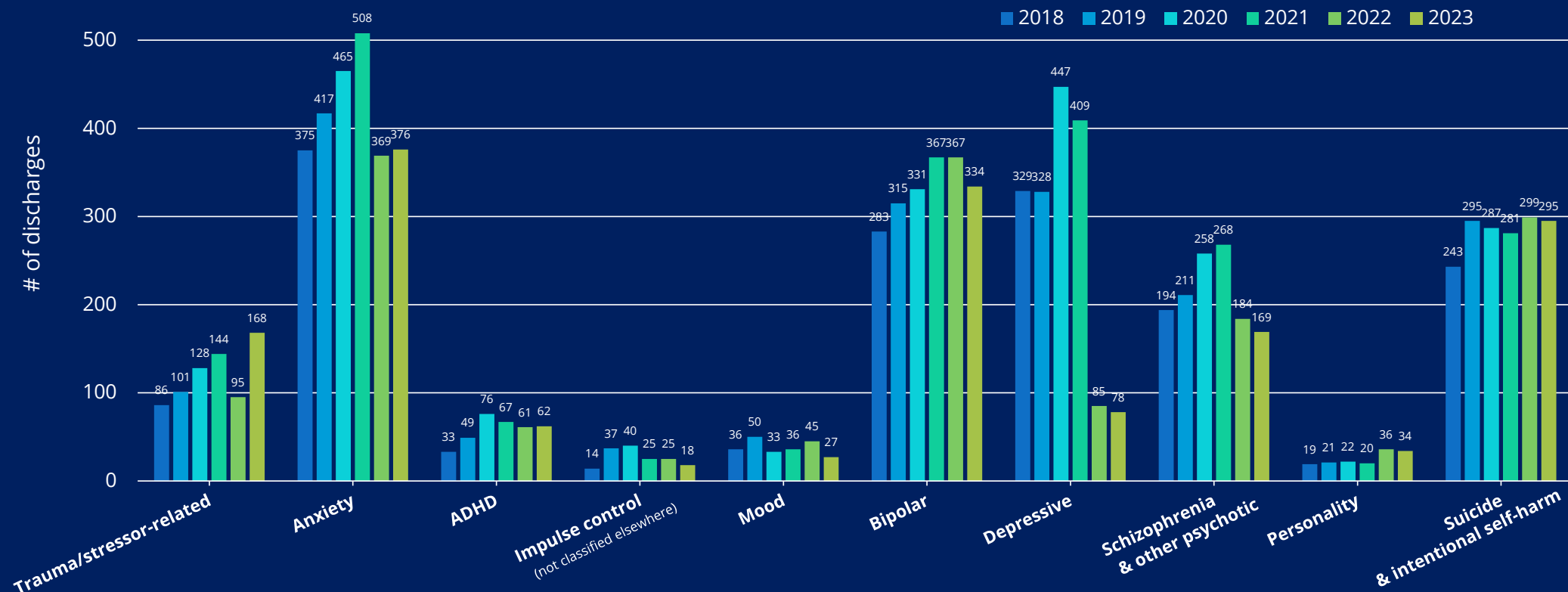


Note: Discharges have co-occurring mental health diagnosis if secondary diagnoses include at least one ICD-10 code for mental disorders *not* due to psychoactive substance use, or for suicide/intentional self-harm.

Emergency Dept Discharges with Primary Diagnosis of Substance Use Disorder, CY 2018 - 2023

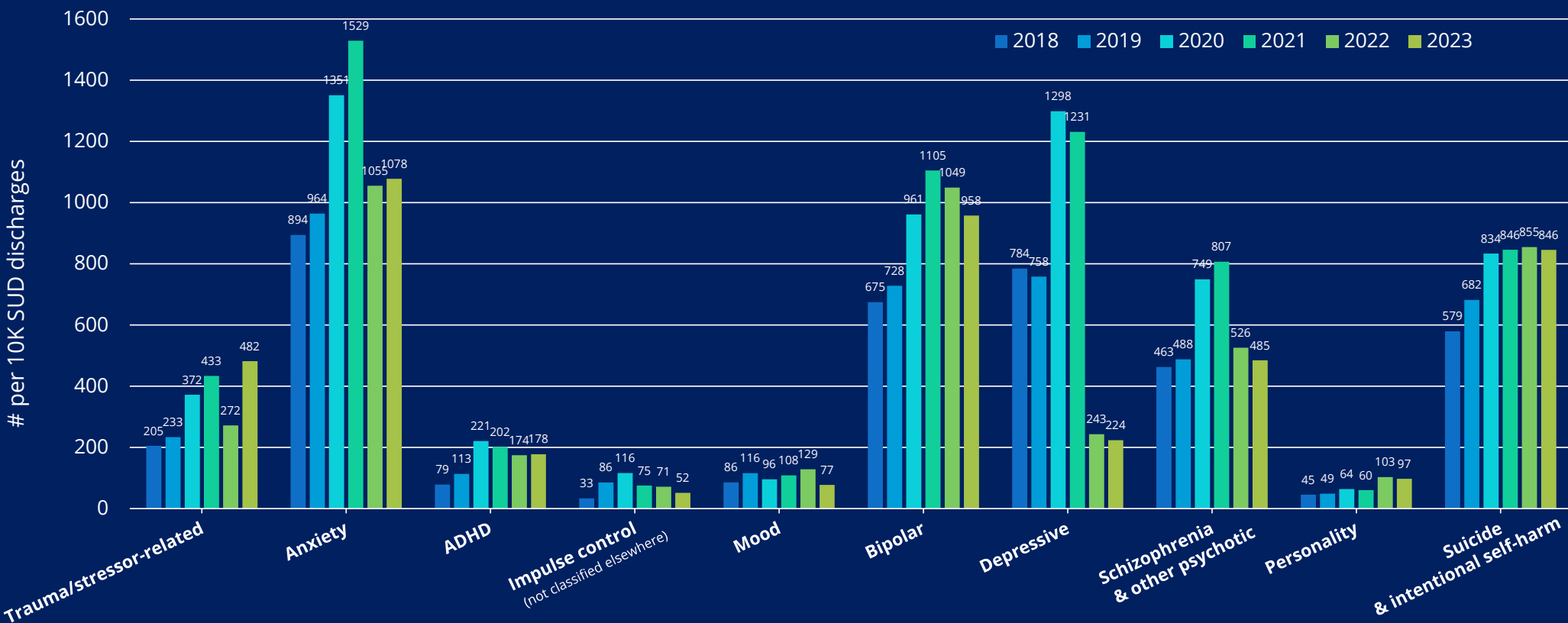


Types of Mental Health-Related Diagnoses among Emergency Dept Discharges with Primary Diagnosis of Substance Use Disorder, CY 2018 - 2023



Notes: Discharges have co-occurring mental health diagnosis if secondary diagnoses include at least one ICD-10 code for mental disorders not due to psychoactive substance use, or for suicide/intentional self-harm. Categories are not mutually exclusive/exhaustive (i.e., a single discharge may have more than one type of mental illness diagnosis).

Types of Mental Health-Related Diagnoses among Emergency Dept Discharges with Primary Diagnosis of Substance Use Disorder, CY 2018 - 2023



Notes: Discharges have co-occurring mental health diagnosis if secondary diagnoses include at least one ICD-10 code for mental disorders not due to psychoactive substance use, or for suicide/intentional self-harm. Categories are not mutually exclusive/exhaustive (i.e., a single discharge may have more than one type of mental illness diagnosis).

Summary

- **Fatal drug overdoses are steadily increasing in Hawaii**
 - *Meth-related >> fentanyl-related*
 - Fentanyl-related deaths are increasing (meth-related plateaued?)
 - *Polysubstance: roughly equal amounts of fentanyl with and without meth*
 - *Mostly male victims, with a wide age range*
- **EMS-attended overdoses decreasing?**
 - *Opioid- and particularly fentanyl-related overdoses generally decreasing since 1st quarter, 2024*
 - *About half the patients receive naloxone before EMS is at scene*
 - Significant associations with better pre-hospital outcomes
- **Substance use disorder and co-occurring mental illness**
 - *Total number of emergency department visits statewide for substance use disorder (SUD) are decreasing annually*
 - Top 3 SUD categories, following alcohol: stimulants (incl. meth), polysubstance (or unspecified substances), cocaine
 - *About 1 in 3 emergency department visits for SUD have a co-occurring mental health-related diagnosis*
 - Increase in visits with co-occurring trauma/stressor-related, anxiety, ADHD, bipolar, and personality disorders, or suicide/intentional self-harm
 - Decrease in visits with co-occurring depressive disorders

Summary – main data sources on overdoses in Hawaii

	Pro's	Con's	Data lag
Death certificates	Comprehensive, standardized	Limited in details	6 months?
SUDORS/ NVDRS	Detailed info: toxicology, decedent histories, stressors	Limited by information ME/	1 year (?) (Less for SUDORS)
Laulima Data Alliance (hospital billing)	Comprehensive, standardized, descriptive morbidity	Limited in details, to hospital patients	~1 quarter
EMS patient care reports	Standardized st	Limited to 911 incidents, data often acquired through manual review	Real time
Hawaii Poison Center	Granular demographics, granular description of substances	Limited to patients/providers who call in	Real time
PMP (Rx database)	Granular description of prescribed substances	Mostly aggregate output	Real time

<https://bh808.hawaii.gov/>