

## Research Question

How does Hawai'i's gun violence compare to national trends, and what can long-term data (2014–2024) tell us about Hawai'i's future risk?

## Motivation:

Although often viewed as a mainland issue, Hawai'i still experiences firearm deaths each year. Comparing Hawai'i to the broader U.S. landscape provides important context for prevention, resource allocation, and community preparedness.

## Data Description

### Source & Size:

- Gun Violence Archive (2014–2024) - records of gun violence across the U.S.
- U.S. Census - provides state population counts needed for accurate per-capita comparisons.
- 449,386 Incidents & 803,861 Participants

### Cleaning & Processing:

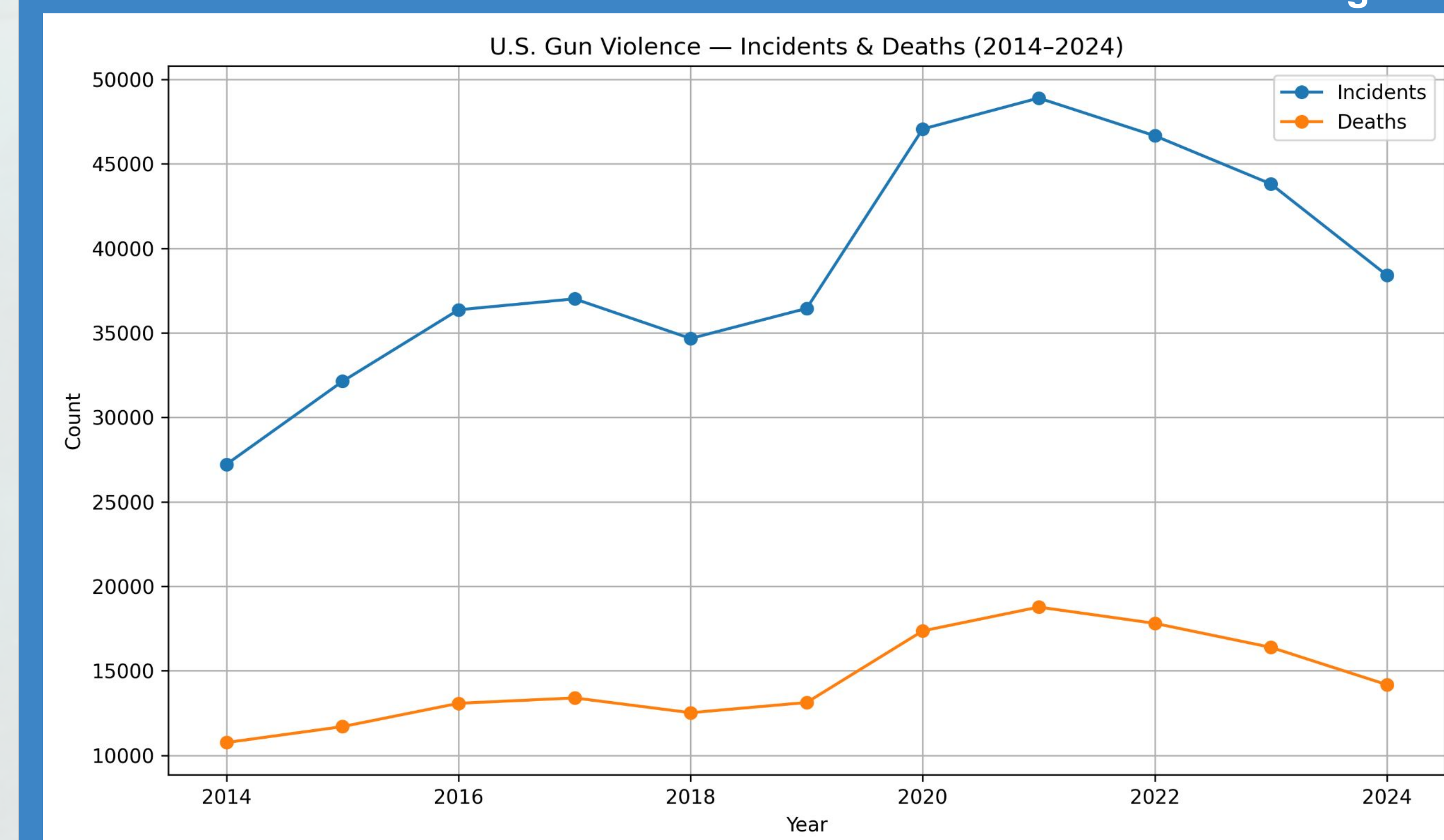
- Cleaned fields + standardized date formats
- Merged incidents with participants by incident ID
- Aggregated deaths by year, state, and per 100k

## National Overview

Gun violence in the U.S. shows a persistent, high baseline of deaths and injuries over the past decade.

- Total firearm deaths remain high each year
- National trends show stability with year to year variation rather than dramatic spikes

Fig. 1

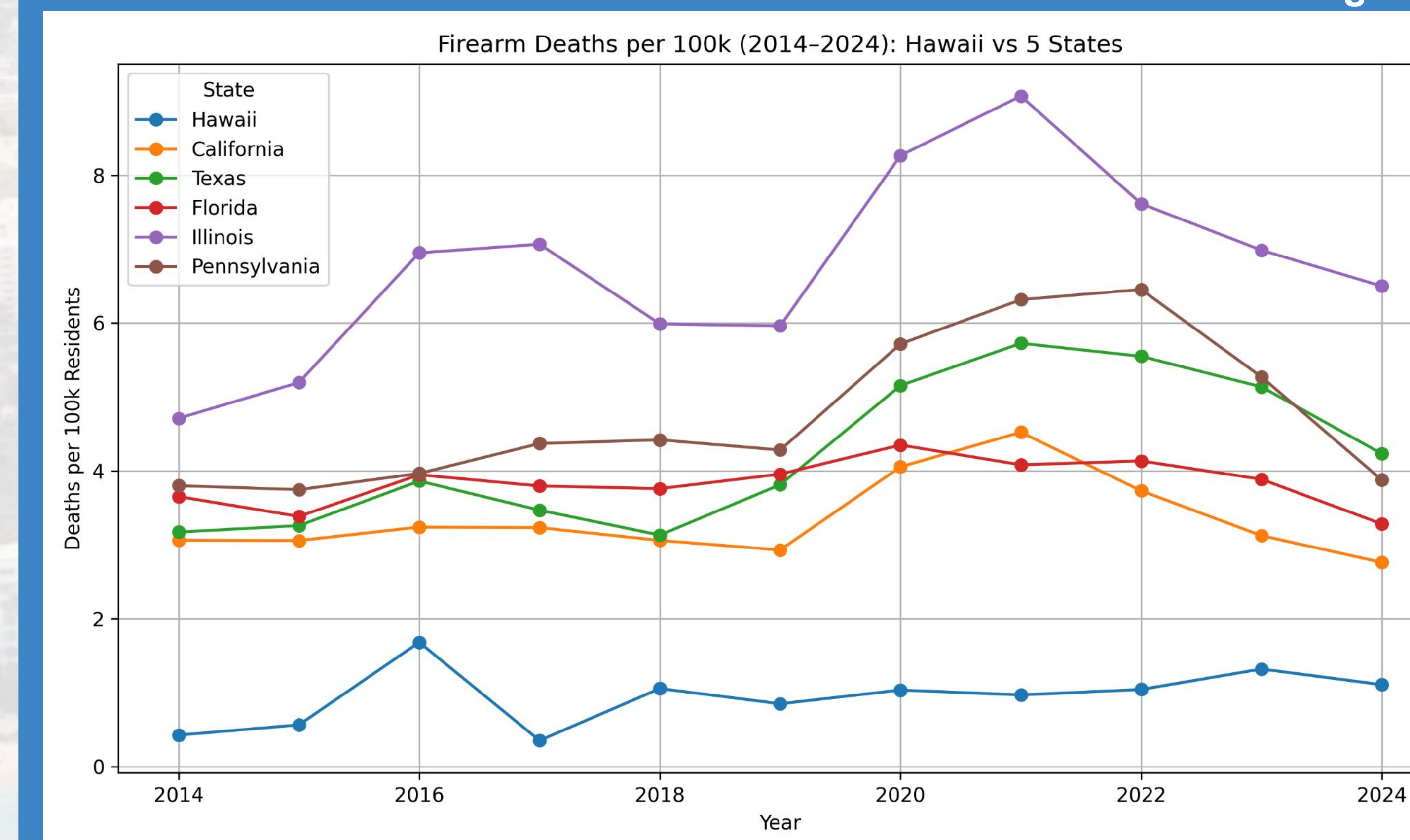


## Hawai'i Compared to U.S.

### Findings:

- From 2014 - 2024, Hawai'i had 149 firearm deaths, ranking 48th out of 50 states in total deaths
- 16 of those deaths occurred in 2024 alone
- Per-capita fatality rate is lower than high-violence states (IL, PA, TX, FL, CA)
- Hawai'i aligns with low-violence coastal states

Fig. 2



While Hawai'i's total numbers are very low due to its population size, the per-capita trend gives the more accurate comparison - and Hawai'i remains in the lower tier of U.S. states.

## Trend & Prediction

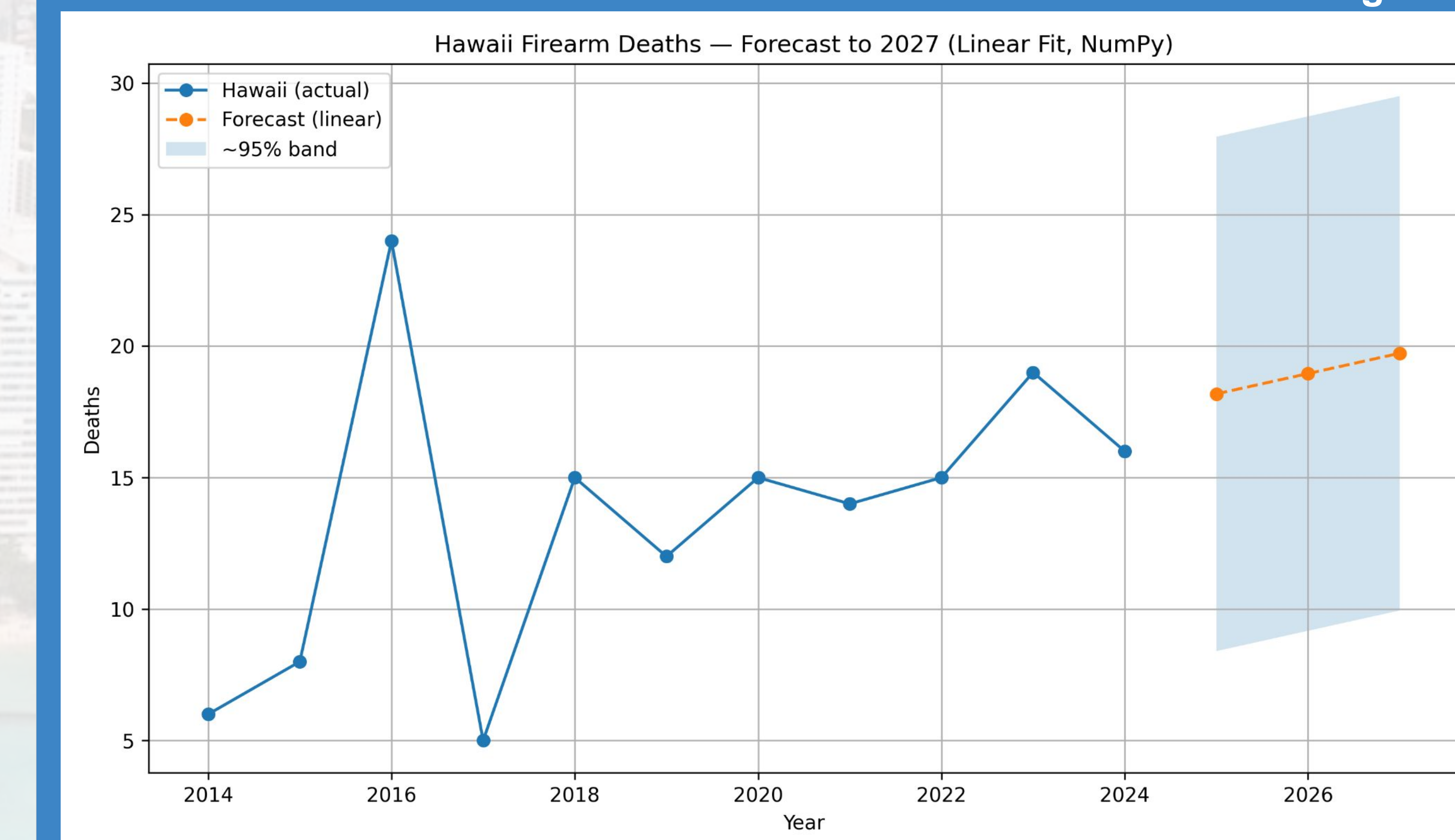
### Methodology:

Linear regression was used to model yearly firearm deaths in Hawai'i (2014–2024).

Equation:  $\hat{y} = \beta_0 + \beta_1 \cdot \text{Year}$

- $\beta_0$  (intercept) = -1546.5909
- $\beta_1$  (slope) = 0.7727 - deaths increase by 0.77/ year
- 95% confidence intervals estimated using model residuals

Fig. 3



Hawai'i's trend is stable but not flat. The positive slope indicates a slow upward drift, suggesting that even with low statewide totals, firearm deaths remain a persistent, ongoing risk.

## Keeping Hawai'i Safe: Prevention & Preparedness

Data alone cannot prevent violence but informed policy, community engagement, and individual preparedness can keep Hawai'i safe.

### Community & State Priorities:

- Strong data reporting and public transparency
- Early intervention programs for at-risk individuals
- Safe storage education and outreach campaigns

### Medical Readiness:

- Encourage Stop-the-Bleed training statewide
- Trauma kits: tourniquet, chest seal, packing gauze
- Bystander response for survivable injuries

### Responsible Individual Preparedness:

- Know and follow Hawai'i firearm laws
- Pursue CCW:
  - Regular training and qualifications
  - Judgment and de-escalation skills
  - Strict safe storage practices

## SDG 16: Peace, Justice & Strong Institutions

This project connects to global goals for reducing violence and promoting safety.

## Reference & Sources

Gun Violence Archive & U.S. Census Bureau