

# FIREARM

# REINJURY

## IN THE NC TRAUMA SYSTEM

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**178,000 firearm injuries per year**  
**21,000 firearm homicides per year**

**Survivors are at high risk of reinjury, but is not well studied**

## METHODS

2013-2023



**NCDHHS**

Division of Public Health  
NC Office of Vital Records

Hospital submitted data:

**DOB, Name, Gender**

**Injury Details**

**(LOS, complications, dispo)**

DHHS collected data:

**DOB, Name, Gender**

**Intent of Injury**

**Death Outside of Hospital**

## METHODS

Single Injury Group  
(One Hospital Encounter)



Recidivist Group  
(Multiple Hospital Encounters)



Cause of Death: GSW  
AND  
(Discharged Home from Hospital  
OR  
Date of Death > 90 days from Discharge)

## RESULTS

# 20,566 patients

Table 5. Unadjusted and Adjusted Recidivism Rates

|    | Frequency | Unadjusted Recidivism Rate | Adjusted Recidivism Rate |
|----|-----------|----------------------------|--------------------------|
| R0 | 20566     |                            |                          |
| R1 | 546       | 2.65%                      | 3.02%                    |
| R2 | 29        | 0.14%                      | 5.93%                    |
| R3 | 1         | 0.00%                      | 3.85%                    |

Table 6. Unadjusted and Adjusted Recidivism Rates w/ Vital Records Data

|    | Frequency | Unadjusted Recidivism Rate | Adjusted Recidivism Rate |
|----|-----------|----------------------------|--------------------------|
| R0 | 20566     |                            |                          |
| R1 | 735       | 3.57%                      | 4.22%                    |
| R2 | 35        | 0.17%                      | 7.45%                    |
| R3 | 1         | 0.00%                      | 3.85%                    |

All GSW patients.

Or about 4,220  
per 100,000 people shot

## RESULTS

**Table 1. Comparison of Demographics Between Recidivists (R1,R2,R3) and non-Recidivists (R0)**

| <b>Variable</b>         | <b>Recidivist<br/>(n = 546)</b> | <b>non-Recidivist<br/>(n = 20020)</b> | <b><i>p</i></b> |
|-------------------------|---------------------------------|---------------------------------------|-----------------|
| Age, mean ± SD          | 27.7 ± 8.54                     | 31.97 ± 14.44                         | <0.001          |
| Male, n (%)             | 525 (96.2)                      | 17205 (85.9)                          | <0.001          |
| Race:                   |                                 |                                       | <0.001          |
| American Indian, n (%)  | 6 (1.1)                         | 249 (1.2)                             |                 |
| Asian, n (%)            | 1 (0.2)                         | 82 (0.4)                              |                 |
| Black, n (%)            | 459 (84.1)                      | 12551 (62.7)                          |                 |
| Pacific Islander, n (%) | 0 (0)                           | 28 (0.1)                              |                 |
| White, n (%)            | 52 (9.5)                        | 5478 (27.4)                           |                 |
| Other, n (%)            | 20 (3.7)                        | 1236 (6.2)                            |                 |

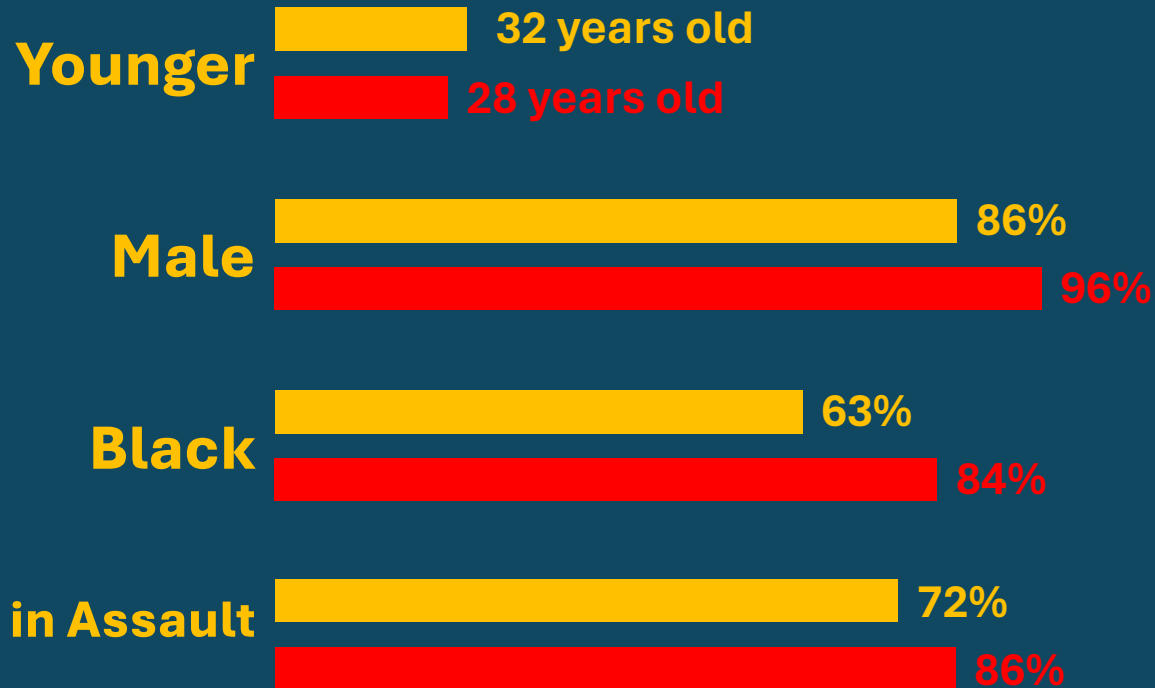
## RESULTS

**Table 3. Comparison of Outcomes Between Recidivist Admissions (R1,R2,R3) and non-Recidivist Admissions (R0)**

| Variable                  | Recidivist | non-Recidivist | <i>p</i> |
|---------------------------|------------|----------------|----------|
|                           | (n = 576)  | (n = 20566)    |          |
| Intent:                   |            |                | <0.001   |
| Assault, n (%)            | 497 (86.3) | 14746 (71.7)   |          |
| Self-Inflicted, n (%)     | 10 (1.7)   | 1728 (8.4)     |          |
| Unintentional, n (%)      | 37 (6.4)   | 2764 (13.4)    |          |
| Undetermined, n (%)       | 32 (5.6)   | 1153 (5.6)     |          |
| Legal Intervention, n (%) | 0 (0)      | 173 (0.8)      |          |
| Operations of War, n (%)  | 0 (0)      | 0 (0)          |          |
| Death, n (%)              | 60 (10.4)  | 2485 (12.1)    | 0.225    |

## RESULTS

Patients tended to be:



...and even  
more so for  
**recidivists**



## RESULTS

**Table 4. Comparison of Outcomes Between Recidivist (R1,R2,R3) and non-Recidivist (R0) w/ Vital Record Data**

| Variable                      | All<br>(n = 21142) | Recidivist<br>(n = 771) | non-Recidivist<br>(n = 20371) | <i>p</i> |
|-------------------------------|--------------------|-------------------------|-------------------------------|----------|
| Intent:                       |                    |                         |                               | <0.001   |
| Assault, n (%)                | 15241 (72.1)       | 663 (86.0)              | 14578 (71.6)                  |          |
| Self-Inflicted, n (%)         | 1755 (8.3)         | 37 (4.8)                | 1718 (8.4)                    |          |
| Unintentional, n (%)          | 2793 (13.2)        | 38 (4.9)                | 2755 (13.5)                   |          |
| Undetermined, n (%)           | 1178 (5.6)         | 33 (4.3)                | 1145 (5.6)                    |          |
| Legal Intervention, n (%)     | 173 (0.8)          | 0 (0)                   | 173 (0.8)                     |          |
| Operations of War, n (%)      | 2 (0)              | 0 (0)                   | 2 (0)                         |          |
| Death, n (%)                  | 3441 (16.3)        | 274 (35.5)              | 3167 (15.5)                   | <0.001   |
| Death in Hospital, n (%)      | 2545 (12.0)        | 60 (7.8)                | 2485 (12.2)                   | <0.001   |
| Death Outside Hospital, n (%) | 888 (4.2)          | 214 (27.8)              | 674 (3.3)                     | <0.001   |

Notably, recidivists were more likely to die, and in particular, before getting to the hospital.

## DISCUSSION

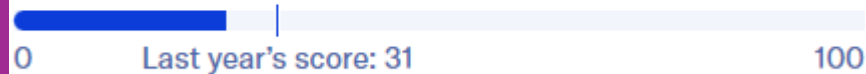
- Average victim of firearm reinjury in NC
  - Male, 28 years old, Black
  - Assault
- 4.2% of firearm injuries during this timeframe had a reinjury
- Recidivists are far more likely to die from their injuries and die outside of the hospital

## FURTHER STUDY

- Identify further socioeconomic risk factors that portend reinjury and protective factors that deter reinjury
- Examine risk factors within recidivist group for death from reinjury
- Include data from law enforcement
- Consider implications for public policy

Gun Law Strength  
Composite score

25



Gun Violence Rate  
Gun deaths per 100k residents

16.8



Source: Everytown for Gun Safety