


Applying an Epidemiologic Approach to a New Challenge: Suicide in Mesa County


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True/False:

In 2016, the incidence rate of deaths due to suicide in Mesa County was more than double that of the United States.



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How many people died by suicide in Mesa County in 2017?



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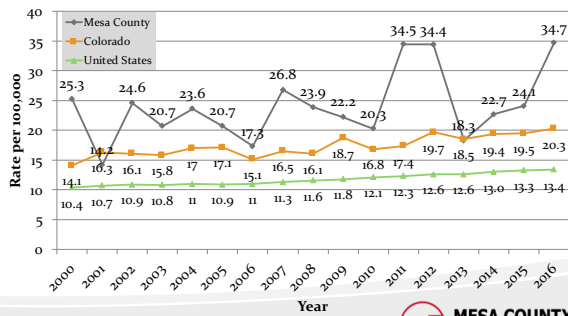
Background: Mesa County

- Higher incidence rate of deaths due to suicide (compared to Colorado and the United States).
- Deaths occurring among:
 - Men
 - Middle-aged (median age: 49 years)
 - Lethal means: gun shot wound (51%); hanging (27%)
 - Drug/alcohol involvement



Rate of Suicide Deaths, 2000-2016

Mesa County, Colorado, and the United States



Existing Suicide Surveillance

- **Surveillance:** collection, analysis, and interpretation of health-related data to drive public health practice.
- **Deaths**
 - Shared, real-time system with Mesa County Coroner's Office.
 - Data includes: date of death, age, sex, zip code of residence, method, substance use involved.
- **Attempts**
 - Pulled from emergency department visit and hospital discharge data.
 - Subject to delay of at least 12 months.





Opportunity to Improve

- An upstream approach to understanding suicide before it became a death by suicide.
- Focus on attempts to understand who is attempting and utilize that information to inform prevention work.
- Real-time, local data.





The Project

- Received grant funding to pilot an active surveillance system in local emergency departments to track suicide attempts for six months.
 - Real-time data on suicide attempts to improve timeliness and relevance of prevention efforts.





Literature Review:

Risk factors for suicide attempts

Health care utilization
 Stressful past experiences Access to lethal means

Female Lower level of education

Income Mental health diagnoses

Ethnicity Prior suicidal behavior

Younger age Religion Unemployment
Race

Sexual orientation



Methods

- Recruited hospitals.
- Convened stakeholder group.
 - Defined scope, what data variables would be collected, and at what frequency data would be shared.
- Signed data sharing agreements.
- Project period: April 2, 2017 – September 16, 2017.



What variables were collected?

- Sex
- Age
- Zip code
- Method of attempt
 - Drug intoxication, sharp-force trauma, hanging, gun shot wound, blunt-force trauma, carbon monoxide poisoning, other (option to write in specifics).
- Insurance coverage
 - Public, private, uninsured*
- Hispanic/Latino
- Date of injury
- Behavioral health services in past 90 days



Results

- 218 suicide attempts resulting in an emergency department visit.
 - For each death due to suicide, there were 10 attempts.
- Nearly two out of three attempts occurred among women (62%).
- More than half of attempts occurred among young people, less than 30 years old.

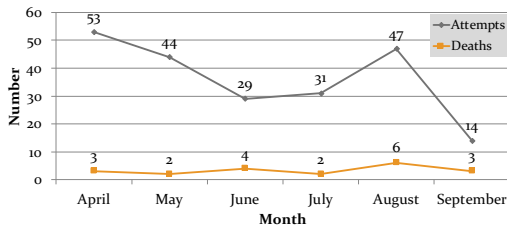


Results (continued)

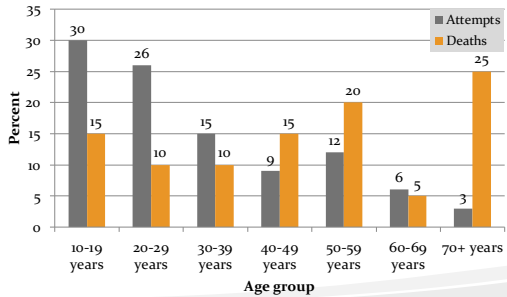
- Method of attempt:
 - Drug intoxication (70%),
 - Sharp-force trauma (15%).
- Proportion of attempts among Hispanic/Latino reflected what would be expected based on population numbers.
- Nearly 2 in 5 (38%) people who attempted suicide received behavioral health services in the past 90 days.
- 3 in 4 attempts (78%) occurred among people on public insurance.

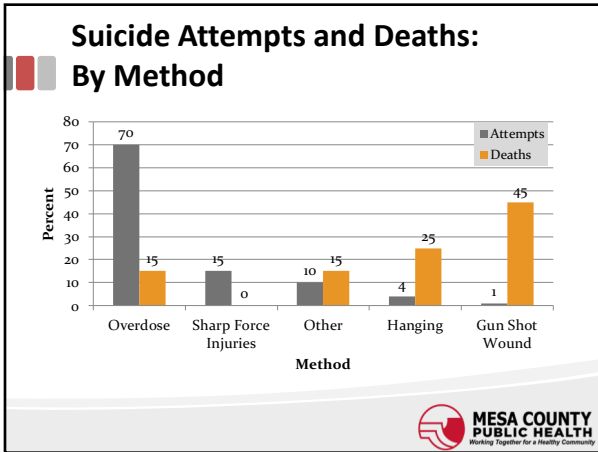


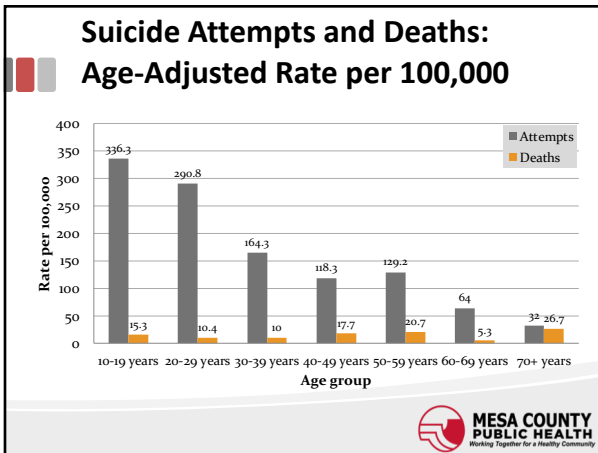
Suicide Attempts and Deaths: By Month



Suicide Attempts and Deaths: By Age









Limitations


- Only suicide attempts that resulted in an emergency department visit (or direct admission to the local behavioral health hospital) were recorded.
- Cases were recorded based on self-report by the patient.
- Varying data collection methods.
- De-identified data.

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 **Recommendations**

- Continue the data collection over a longer period of time.
 - Larger sample size to strengthen analysis.
 - Understand if attempts have a seasonality.
- Improve data collection methods.
- Expand the factors collected by the surveillance system:
 - Drug type
 - Treatment provided
 - First attempt vs. previous attempt
 - Ever served in the military

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 **What is this data driving?**

- Community-wide suicide prevention plan
 - Data
 - Awareness
 - Education
 - Support

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 **Questions?**

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