



Tobacco Use in Youth: CDC Online School Survey 2021

Presenter: Angela Lee, Data Analytics 201, LGCC
Date: January 19, 2023

90%
OF SMOKERS
STARTED
SMOKING BY
THE AGE OF
18.

TABLE 8 Leading causes of death in the United States in 2020 versus 2019

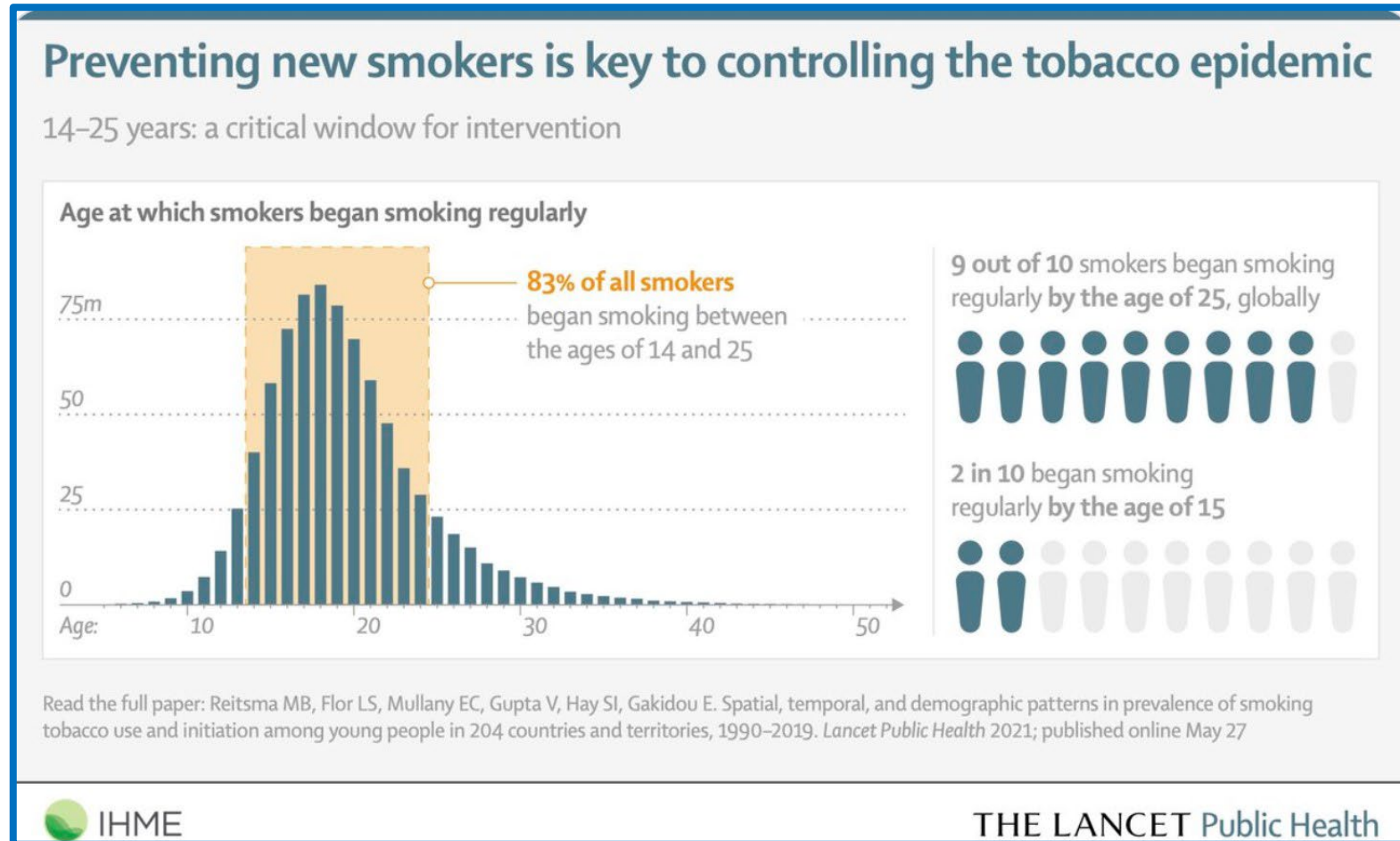
| Cause of death | 2020 | |
|---|------------------|-------------------|
| | No. ^a | Rate ^b |
| All causes | 3,383,729 | 835.2 |
| ✓ 1. Heart diseases | 696,962 | 168.2 |
| ✓ 2. Cancer | 602,350 | 143.8 |
| 3. COVID-19 | 350,831 | 85.0 |
| 4. Accidents (unintentional injuries) | 200,955 | 57.5 |
| 5. Cerebrovascular diseases | 160,264 | 38.9 |
| ✓ 6. Chronic lower respiratory diseases | 152,657 | 36.4 |

Importance of Prevention – Tobacco Usage in Youth

Started young,
as established pattern

Leading cause
of preventable disease,
disability, and death
among adults

International Tobacco Usage (1990-2019)

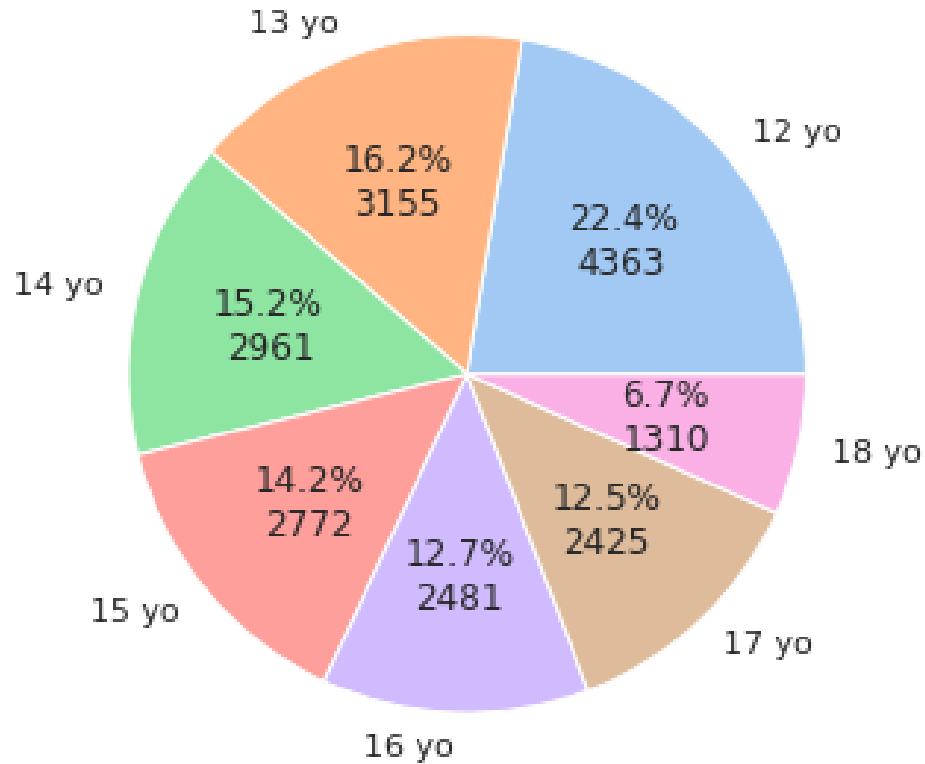


National Tobacco Usage in Youth

- Do youth use tobacco products?
 - Which main products?
 - Dataset: CDC Online School Survey for the 2021 Year
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- Analysis using python, pandas, numpy, matplotlib
 - CDC Assumptions for Analysis:
 - Tobacco usage: 1-time use or more often.
 - Use at least 1 day during the 30 days before the survey
 - Did not study frequency (how often)

Middle, Junior, Senior High Students Polled

2021, By Age and Sex



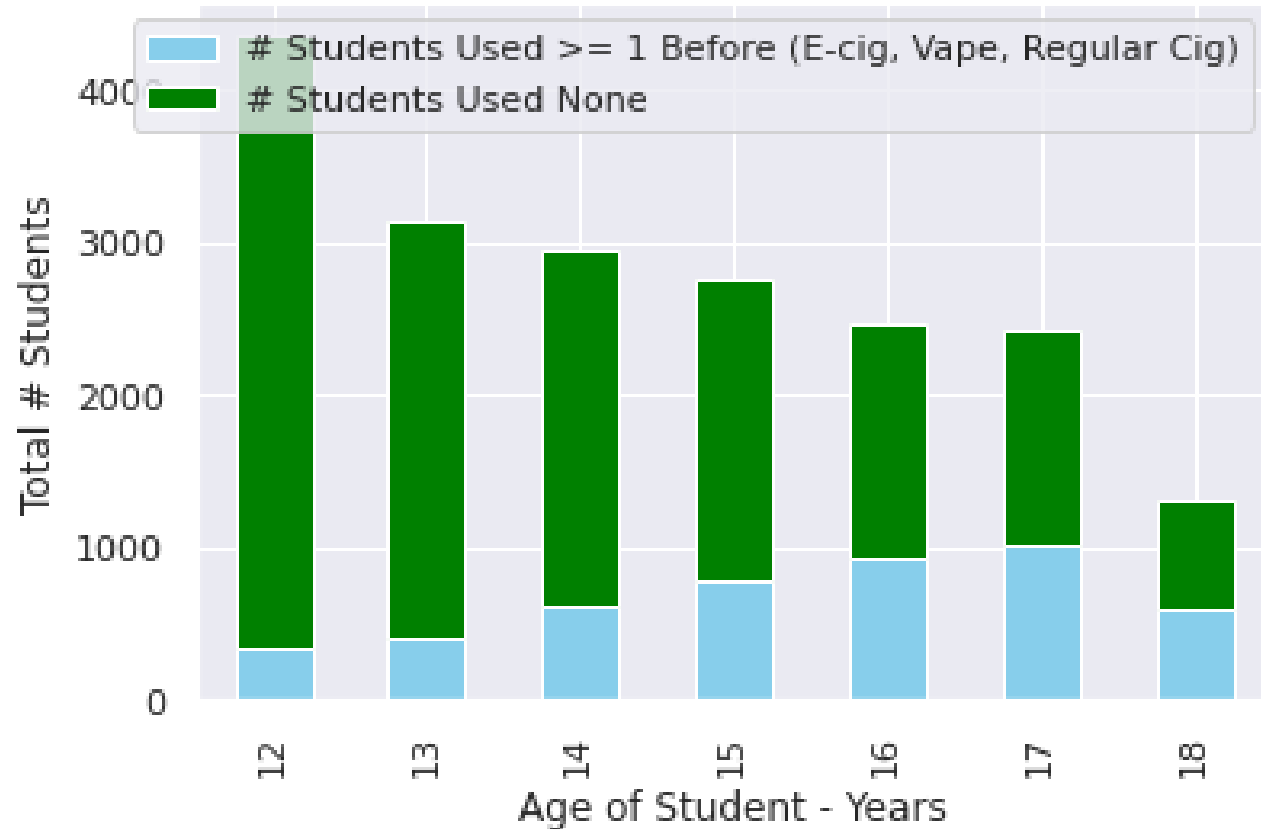
Students:

- 37 states, 450 schools
- Ages: 12-18 yrs old

- % Total Respondents by Age:
- Total # Respondents per Age:
 - N = 19,467
 - Males/Females 1:1
 - Most closer 12yo, Least 18yo.

*Schools approached (20,413 possible students).
19,406 actually completed this portion of analysis reviewed.*

Tobacco Usage Among Youth (12-18 yo)



Summary of Data Table:

- N = 19,467:
- No usage for majority (**green**) from **92.1% in 12 yo**, to **54.2% in 18 yo**
- Steady increase in tobacco use with age (**blue**) from **7.9% in 12 yo**, to **45.8% in 18 yo**
- Influences: At least 1 influence nearby (friend, family). Or took self-initiative (relieve anxiety, stress)

Tobacco Usage Within the Last 30 Days

N = 19,467 students

Yes Usage: Total # Students (%)


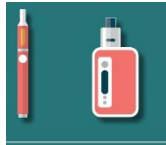

- At least 1 of 3 Types Used:
 - Assumptions: no lozenge, gum
 - Dip/chewing tobacco very few

No Usage: Total # Students (%)

- All 3 Not Used.

Total # (%)—high degree overlap:

- No Usage greatest:
 - Highest Total #s: All 3 Not Used.
- Among those who do use by Age:
 - % All 3 Types Used by 1 Student increases with age

| Tobacco Product | | Yes Usage (%) | No Usage (%) |
|-------------------|--|---------------|----------------|
| E-cigarette |  | 3,553 (18.4%) | 15,795 (81.6%) |
| Vape |  | 2,318 (7.9%) | 16,036 (92.1%) |
| Regular cigarette |  | 1,508 (12.6%) | 17,596 (87.4%) |

Source: CDC online school survey, 2021

| Age | 0 | 1 | 2 | 3 |
|-----|------|-----|-----|-----|
| 12 | 4020 | 243 | 69 | 31 |
| 13 | 2749 | 270 | 75 | 0 |
| 14 | 2344 | 372 | 171 | 74 |
| 15 | 1988 | 439 | 237 | 108 |
| 16 | 1540 | 457 | 335 | 149 |
| 17 | 1412 | 470 | 359 | 184 |
| 18 | 710 | 274 | 216 | 110 |

Tobacco Usage Within the Last 30 Days

N = 19,467 students

Age = 12, 13, 14, 15, 16, 17, 18 years old

No Usage: Total # Students

- 0 used.

Yes Usage: Total # Students

- At least 1 of 3 Types Used by a Student:
 - 1 type of product used
 - 2 types used
 - 3 types used

| Age | 0 | 1 | 2 | 3 |
|-----|------|-----|-----|-----|
| 12 | 4020 | 243 | 69 | 31 |
| 13 | 2749 | 261 | 104 | 41 |
| 14 | 2344 | 372 | 171 | 74 |
| 15 | 1988 | 439 | 237 | 108 |
| 16 | 1540 | 457 | 335 | 149 |
| 17 | 1412 | 470 | 359 | 184 |
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Source: CDC online school survey, 2021



Summary and Future Directions

2021 Summary:

- No Tobacco Usage for Majority of Youth
- Steady ↑ in usage with ↑ age a concerning health risk.
 - Note: Underestimates (30%↓ responses than years prior), 2022 data more

Next Steps: Study factors affect/increase risk of *established patterns*

- Can the dataset be used to estimate # youth and tobacco usage in entire US?
- Pandemic—Covid, Isolation, Location, Frequency use, Economy/Inflation
- Dec 2022—Litigations & US Congress more Hispanic Asian health data
- 2023—New state and national laws on tobacco products

All public private groups continue monitoring tobacco usage in youth.



Acknowledgments

2021 CDC Dataset:

- https://www.cdc.gov/tobacco/data_statistics/surveys/nyts/index.htm

Thank You!:

- Professor Imran Khan
- All 201 Data Analytics Students