

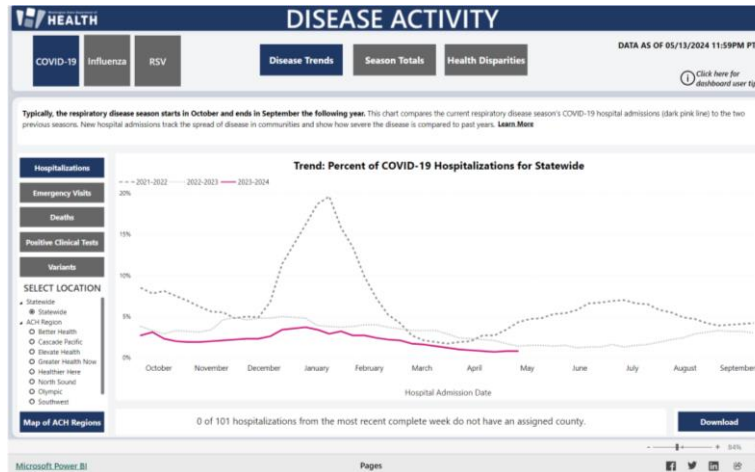
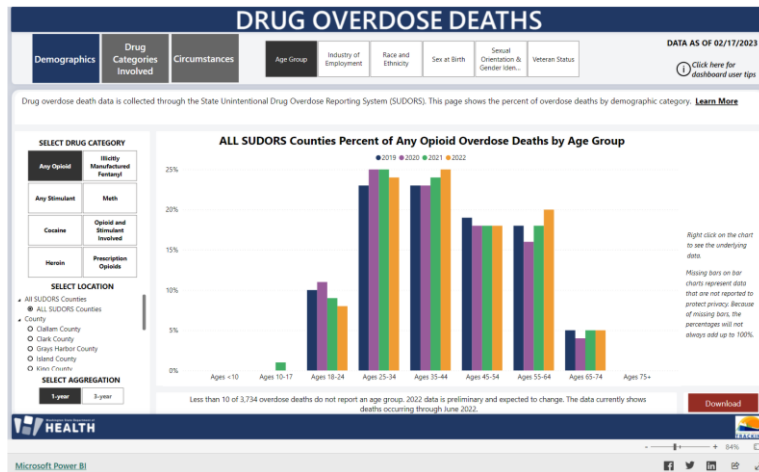


Building R Packages to Promote Reproducible and Shareable Code: An Example from Small Number Suppression for Epidemiological Dashboarding

Cameron Ashton, MSPH
Office of Innovation and Technology,
Center for Analytics, Informatics, and Modernization

Public Data Dashboards

- Opioid and Drug Overdose Data
- Respiratory Illness Data Dashboard
- Seasonal Hazards Dashboard
- Unintentional Drug Overdose Data



Data Suppression

Process of obscuring small numbers and other values in a dataset to:

1. Limit the disclosure of sensitive information
2. Remove instability

- Standard protocol when sharing health data publicly
- WA DOH has agency-specific suppression guidelines

Suppression Logic

Primary

- Small values – 1 through 9

Secondary

- When totals are present
 - All suppressed subtotals == 1
 - Single subtotal was primary suppressed

Tertiary

- Metrics related to primary and secondary suppressed values
 - Percents, rates, etc.

Motivation

● Reproducibility

- Single set of generalized user-defined functions eliminates redundant code
- Streamlines maintenance
- Simplifies future development

● Shareability

- Package code is accessible to everyone in our agency GitHub enterprise

```
devtools::install_github("DOH-EPI-Coders/Dashboard_Small_Number_Suppression")
```

Suggestions

- A functional R Package does not need to be complicated
 - Start simple
 - Quality code
- Recommended tools
 - `devtools`
 - `roxygen2`
 - RStudio CMD check
- Useful for commonly-repeated or shared custom processes
 - Personal or team scope



Acknowledgments

Data Transformation and Delivery Team

- Roxanne Beauclair, PhD, MPH, MA
- Maya McKenzie, MPH, CPH
- Russell Shean, MS
- Ashley Thomson, MPH

Data Visualization Section Supervisor

- Zeyno Nixon, PhD, MPH, MA

Contact Us

Cameron Ashton

cameron.ashton@doh.wa.gov

Data Visualization Section

CDS-Dashboards@doh.wa.gov



@WADeptHealth



To request this document in another format, call 1-800-525-0127. Deaf or hard of hearing customers, please call 711 (Washington Relay) or email civil.rights@doh.wa.gov.