

Visualizing Measles Incidence in the USA (1928–2001)

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Introduction

Measles is a highly infectious viral disease with significant impact on public health. However, observational studies confirm that vaccination is highly effective.

Data

- [Project Tycho](#) (Van Panhuis et al., 2018): Weekly counts of measles cases
- [STATS Indiana](#) (2021): Decennial U.S. census data for each state

Tools Used

- [Tidyverse](#) (Wickham et al., 2019): R packages for data analysis and visualization
- [ColorBrewer](#) (Brewer, 2014): “Reds” palette

Pitch to the Editorial Board

Why Should You Adopt Our Visualization?

Boost Reader Engagement

- Clearer titles to the plot and the color legend deliver immediate insight.
- Including grid lines and all state abbreviations eliminates the need for guesswork.
- A colorblind-friendly palette broadens accessibility.
- Colors from a discretized sequential palette highlight the overall trend.

Enhanced Credibility and Trust

- Mistakes in handling missing data have been corrected.
- The clearer visual distinction between zero and missing data ensures accuracy.
- A perceptually balanced color scale avoids overstating medium-level incidence.

These improvements **strengthen the impact of and trust in journalistic reporting on public health data**. This aspect provides a crucial advantage amid heightened vaccine skepticism fueled by misinformation.

References:



Original Visualization

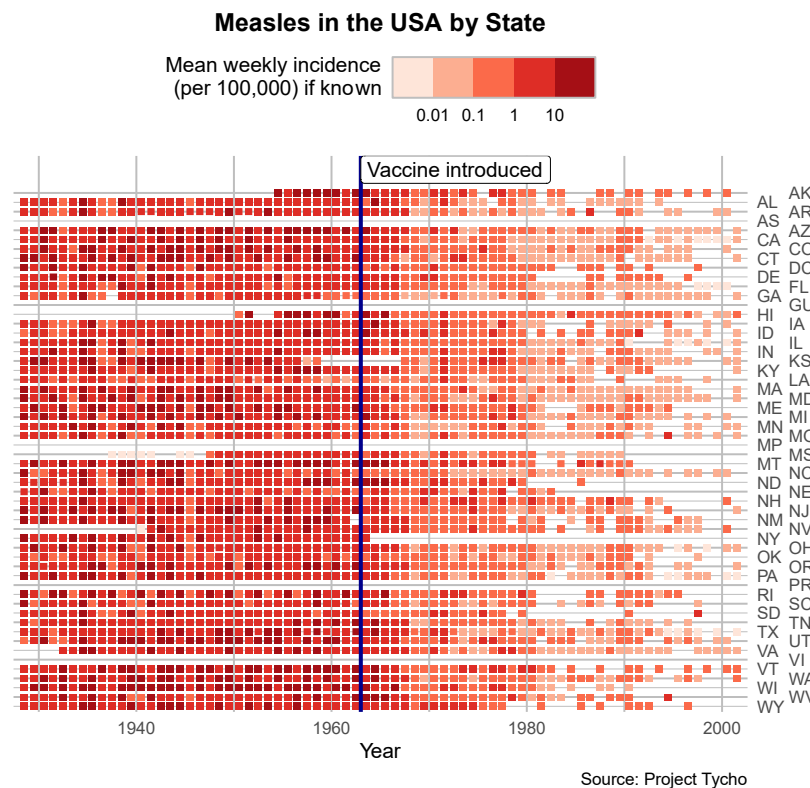
The figure below was published by the [Wall Street Journal](#) (DeBold and Friedman, 2015):



Although the heatmap layout garnered praise in the blogosphere (e.g., [Lee, 2017](#)) it exhibits several weaknesses:

- Nearly half of the state labels are omitted.
- The rainbow palette lacks a meaningful progression through color space and is not colorblind-friendly.
- Missing data are erroneously treated as zero.

Improved Visualization



- The **logarithmic color scale** addresses the skewed incidence (mostly near zero) by emphasizing subtle differences at low values.
- Horizontal and vertical **grid lines** in the background facilitate retrieving the state and year for individual data points.