



Letter to the editor

Unraveling misinterpretations in pediatric COVID-19 admission trends: The Impact of CDC Reporting Changes



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The interpretation of results is crucial for understanding phenomena within datasets. At times, the beliefs held by experts may be at odds with the evidence presented in these datasets. The author has effectively challenged the interpretations of COVID-19 results in Sweden, as published in NEJM, as well as the models of herd immunity discussed in Health and Technology.

Evaluating key metrics, such as confusion matrices, is essential for assessing whether the effectiveness of breast cancer screening is improving or declining, as noted in Ethics, Medicine and Public Health. Evidence-based research can illuminate the most effective global policies for managing COVID-19, as detailed in IEEE Transactions on Computational Social Systems. Furthermore, it can quantify the impact of COVID-19 on mortality rates among children under five, providing valuable insights published in Pediatric Research.

However, there are cases where the author's interpretations were misguided due to a lack of awareness of certain facts. This paper presents an example of such misinterpretation. It is also important to recognize that while visualizations are powerful communication tools, they can inadvertently convey misleading messages if not utilized correctly.

The author utilized generative AI [1,2] to analyze pediatric COVID-19 admissions from August 8, 2020, to June 15, 2024, based on the official dataset released by the CDC on June 15, 2024 [3,4]. Upon visualizing the data, the author identified a significant and sudden decrease in pediatric COVID-19 admissions beginning May 11, 2024, interpreting this trend as a potential transition from pandemic to endemic status.

However, this interpretation carries the risk of misrepresentation; the decline in pediatric COVID-19 admissions may be due to a change in the CDC's reporting policy rather than a genuine decrease in cases. Such a misinterpretation could foster incorrect assumptions about the pandemic's status, potentially resulting in the premature relaxation of public health measures and increased vulnerability to the virus.

Relying on incomplete or misinterpreted data in public health decision-making can have serious implications. Decisions regarding resource allocation, vaccination campaigns, and social distancing measures may be adversely affected. Therefore, ensuring the accuracy and

completeness of the data used in these analyses is essential for effective public health responses.

The dataset released on June 15, 2024, provides a comprehensive overview of pediatric COVID-19 admissions reported by hospitals during the specified time frame. Interestingly, it indicates a notable decrease in these numbers, starting May 11, 2024. This trend, visualized using Python code, `pediatric.py` [5], generated with the assistance of generative AI, shows that prior to May 11, approximately 4800 pediatric patients had been admitted. The observed decrease is indeed a positive development for society.

Fig. 1 displays the graph produced by this Python code, which is contingent upon the accuracy of the query given to the generative AI. The query was executed using Microsoft's Copilot, which incorporates ChatGPT-4.0. To replicate the results, researchers are advised to manually download the CSV file and rename it as 'data.csv' [4], ensuring that significant variables—such as 'Week Ending Date', 'Geographic Aggregation', and 'Number of Hospitals Reporting Pediatric COVID-19 Admissions'—are included. Variables are denoted by strings enclosed in single quotes, while specific values, like "USA", are indicated by strings in double quotes.

The reliability of data is a critical factor in any analysis. In this instance, the CDC's transition to voluntary reporting may have compromised the integrity of the findings. Thus, the reported decline in pediatric COVID-19 cases might not reflect an actual decrease but rather this change in reporting policy—potentially obscuring a continued threat. It is important to note that the CDC announced on May 1, 2024, that hospitals are no longer required to report COVID-19 hospitalization data.

The author's oversight regarding this crucial information underscores the need for a thorough evaluation of potential explanations for observed trends in public health data. Analyzing the data is essential, but understanding the context of its collection is equally vital.

Clear communication from public health officials is paramount. They must convey the limitations of the data stemming from the revised reporting policy in order to avoid misleading the public. This transparency is essential for maintaining public trust and promoting

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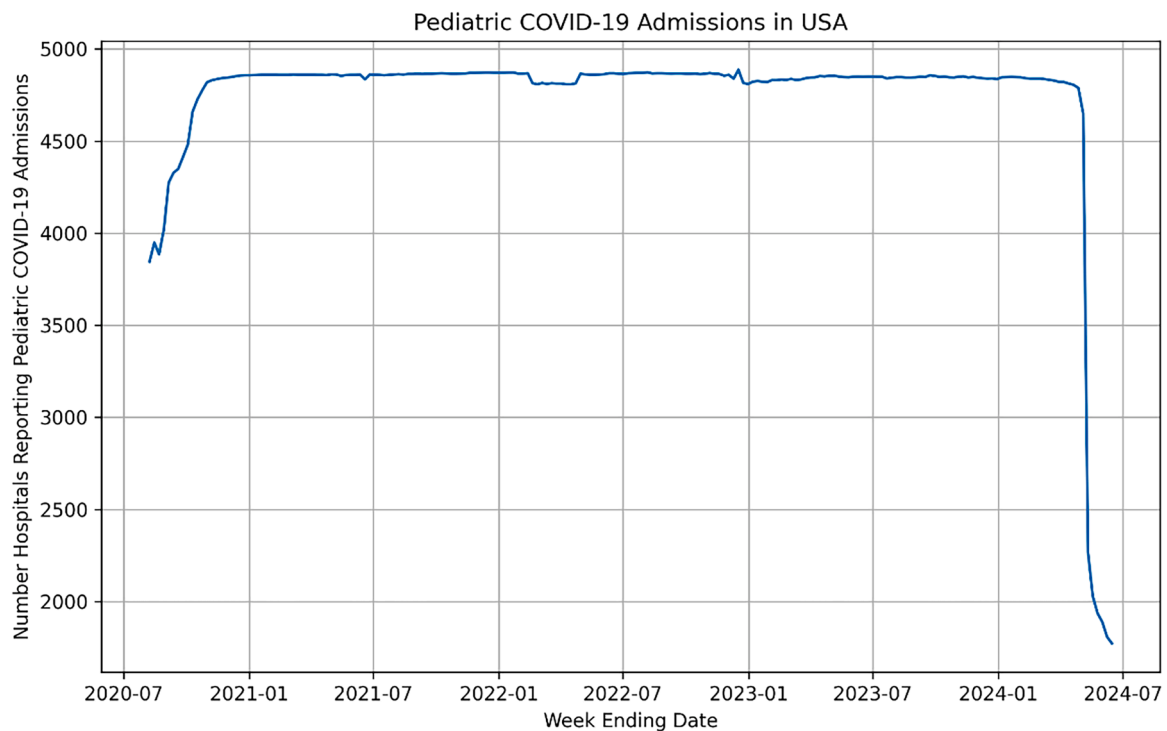


Fig. 1. Number hospitals reporting pediatric COVID-19 admissions from Aug. 8, 2020 to June 15, 2024.

continued vigilance during the pandemic.

Lastly, exploring alternative data sources, such as wastewater surveillance or syndromic surveillance, could provide a more comprehensive view of COVID-19 activity and enhance our understanding of the pandemic's progression.

Impact overview statement

This study highlights a noticeable decline in pediatric COVID-19 hospital admissions data, coinciding with a shift in CDC reporting requirements. While it may be tempting to view this trend as a positive development, the change to voluntary reporting complicates the confirmation of an actual decrease in cases. This situation underscores the importance of considering potential biases and data limitations when analyzing public health trends.

The risk of misinterpretation further emphasizes the need for clear communication from public health authorities to prevent misconceptions about the pandemic's status and to ensure that the public remains vigilant.

In addition to hospital admission data, examining alternative data sources can provide a more comprehensive picture of COVID-19 activity, thereby augmenting our understanding of the pandemic.

Moreover, the author's failure to acknowledge the critical change in CDC reporting policy highlights the necessity for researchers to be transparent about potential biases and limitations in their studies. It is crucial for researchers to consider all relevant factors that could affect their analysis, ensuring that their conclusions are as accurate and reliable as possible.

Ethics statements

Not applicable.

Funding

This research has no fund.

Data availability

The author has no permission to share data.

The data is publicly available at the following site. https://data.cdc.gov/Public-Health-Surveillance/Weekly-United-States-Hospitalization-Metrics-by-Ju/aemt-mg7g/about_data

CRediT authorship contribution statement


Yoshiyasu Takefuji: Writing – review & editing, Writing – original draft, Visualization, Validation, Software, Investigation, Formal analysis, Data curation, Conceptualization.

Declaration of competing interest

The author has no conflict of interest.

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