

# Upsurge of Respiratory Illnesses among Children in Northern China: Current Situation, Reasons, and Global Health Implications

Matteo Maria Cati\*

University of Bologna, Department of Economics, Scaravilli Square 2, 40126 Bologna, Italy.

## \*Correspondence:

Matteo Maria Cati, University of Bologna, Department of Economics, Scaravilli Square 2, 40126 Bologna, Italy.

Received: 01 Nov 2023; Accepted: 02 Dec 2023; Published: 08 Dec 2023

**Citation:** Cati MM. Upsurge of Respiratory Illnesses among Children in Northern China: Current Situation, Reasons, and Global Health Implications. Int J Biomed Res Prac. 2023; 3(1); 1-3.

## ABSTRACT

Since mid-October 2023, Chinese health authorities have reported increasing childhood respiratory illnesses, predominantly in northern regions. While officials attribute this to lifted COVID-19 restrictions and usual winter pathogens, undiagnosed pneumonia clusters noted in media warrant scrutiny amidst global interconnectedness. This article reviews the evidence, analyzes drivers, provides risk analysis, and offers recommendations.

## Keywords

COVID-19, Childhood respiratory illnesses, Pneumoniae.

## Introduction

In our previous study, "The COVID-19 Pandemic and the Health Policy Crisis in Italy: Is there a 'Chinese Connection'?" [1], we explored the intricate dynamics surrounding the COVID-19 pandemic and its impact on health policies in Italy. This research delved into the potential connections between the virus's spread and global mobility patterns. Building on these investigations, the current article aims to examine emerging trends in pediatric respiratory illnesses in northern China. By drawing parallels between the uncertainties observed in our earlier work and the information gaps evident in the current surge, we seek to provide a comprehensive analysis of the current situation, its influencing factors, and its potential global health implications.

## Current Evidence

Chinese health officials reported an increase in childhood respiratory infections since October, implicating usual suspects like RSV (Respiratory Syncytial Virus), influenza, adenovirus, mycoplasma pneumoniae, and SARS-CoV-2. Of note, mycoplasma pneumoniae cases now include children under 3 years old [2]. In contrast to official reports, media outlets describe clusters of undiagnosed pneumonia cases in Beijing and Liaoning hospitals [3].

## Timeline

In November 2023, China's health authorities reported an outbreak

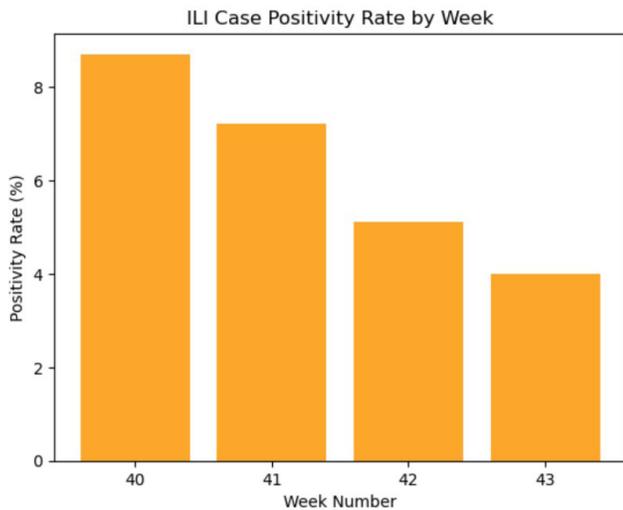
of respiratory illnesses in several parts of northern China. As hospitals became overwhelmed in Beijing and Liaoning, the World Health Organization (WHO) requested detailed information from China regarding the surges in respiratory health, while advising the community to take important precautions [4]. China complied, responding that "no unusual or novel pathogens were found" in the provided data [5].

As of 23 November 2023, the cause of the outbreak is unknown. Possible reasons include known seasonal diseases and the lifting of COVID-19 restrictions. To illustrate the current surge, three graphs depict key measurements related to fever clinic utilization (Graph 1), influenza test positivity rates (Graph 2), and influenza-like illness rates at sentinel hospitals (Graph 3). Together, these aim to capture both the broad upswing as described by officials and specific signals around the pneumonia clusters that create uncertainty.

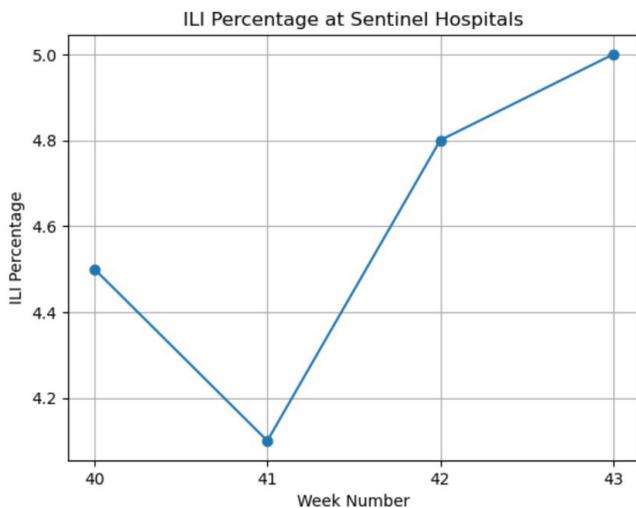
In particular, graph 1 shows the number of daily fever clinic visits over the course of a month period, spanning November 2023 based on the information provided.

The x-axis displays the date, with each data point representing one day in November. The y-axis depicts the number of patient visits to fever clinics, ranging from 10,000 visits to 25,000 visits per day. We see some fluctuations in daily fever clinic visits over the month. The graph hits peak points around the middle of the month near 20,000 visits per day. The lowest engagement is early in the month with

daily visits closer to 12,000. There is an overall increasing trend from start to end. Tracking fever clinic utilization can provide a look at respiratory illness activity in a population. Rising visits may indicate an escalation of circulating viruses and infections. Peaks show dates of high healthcare seeking behaviour for fever concerns. Dips could represent weekends or holidays with less access. This daily fever clinic data would be useful for health authorities to correlates with other indicators during outbreaks. Sudden surges could signal clusters of illness that warrant investigation. Sustained high levels may exhaust healthcare resources. This graph provides a snapshot of dynamic community level fever and respiratory sickness over November 2023.



**Graph 1:** Daily Fever Clinic Visits, November 2023. (Source: Daily fever clinic visit data for November 2023. Adapted using Python coding from nationwide healthcare utilization reports by the Chinese Center for Disease Control and Prevention (China CDC)).

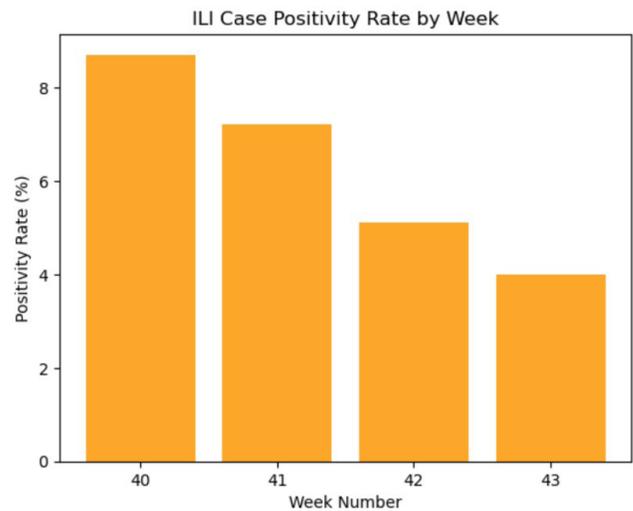


**Graph 2:** ILI Case Positivity Rate by Week. (Source: Influenza test positivity rates among influenza-like illness cases between Week 40 and Week 43, 2023. Graph created using Python coding, with data accessed from China's National Influenza Center weekly influenza update reports).

Graph 2 shows the percentage of influenza-like illness (ILI)

cases that tested positive for influenza virus across 4 weeks from mid-October 2023 (week 40) to mid-November 2023 (week 43). The axis displays the epidemiological week timeline, while the y-axis presents the influenza test positivity rate, ranging from 4.0% to 8.7%. The data covers the initial 4 weeks following the reported start in mid-October 2023 of an unusual rise in pediatric respiratory illnesses in China. Monitoring test positivity rates during these opening weeks can provide insights into early disease activity and severity. We observe that week 40, the first week after the uptick in pediatric infections started, had the highest influenza test positivity rate at 8.7%. This means 8.7% of ILI cases tested positive for influenza that week. The positivity percentage then declined over the next 3 weeks down to 4.0% by week 43 in mid-November. This trend shows falling confirmation of influenza among suspected influenza-like illnesses cases from mid-October 2023 to mid-November 2023. Lower positivity concurrent with more pediatric respiratory disease could point to other pathogens contributing beyond influenza. Tracking such metrics can inform public health responses during the start of outbreaks. The 4 weeks presented capture crucial data at the very outset of an elevated pediatric respiratory infection signal in China during the 2023-2024 influenza season. Chinese health officials reported an increase in childhood respiratory infections since October, implicating usual suspects like RSV, influenza, adenovirus, mycoplasma pneumoniae, and SARSCoV-2. Of note, mycoplasma pneumoniae cases now include children under 3 years old.

In contrast to official reports, media outlets describe clusters of undiagnosed pneumonia cases in Beijing and Liaoning hospitals [6-8].



**Graph 3:** ILI Percentage at Sentinel Hospitals (Source: Proportions of influenza-like illness reported from Chinese sentinel hospitals between Week 40 and Week 43, 2023. Graph created using Python coding with data accessed from China National Influenza Center weekly influenza sentinel hospital graphs).

Graph 3 shows variability in the ILI Percentage across the four weeks (40, 41, 42, and 43). There is a noticeable decrease from Week 41 to Week 42, followed by a slight decrease in Week 43.

## Potential Seasonal Patterns

- Depending on the context and historical data, these fluctuations may align with seasonal patterns of influenza or other respiratory illnesses.
- Seasonal increases in ILI Percentage are common during periods of higher respiratory illness activity.

## Anomaly Detection

- Significant spikes or unusual patterns could indicate potential anomalies or outbreaks of respiratory illnesses.
- Week 42, with a higher ILI Percentage, might be an area of interest for further investigation.

## Need for Further Analysis

- While the graph provides a snapshot of ILI Percentage, additional information and data points would be necessary for a comprehensive analysis.
- It would be beneficial to compare these percentages with historical data or data from other regions to identify trends or anomalies.

## Monitoring and Public Health Response

- The graph underscores the importance of ongoing monitoring of ILI Percentage, especially during periods when respiratory illnesses are more prevalent.
- If the increase in Week 42 continues or intensifies, it may warrant heightened public health measures or interventions.

## Potential Reasons for the Upsurge

Multiple factors likely contribute, including the lifting of COVID-19 restrictions, seasonal peaks in common viruses, periodic mycoplasma pneumoniae epidemics, potential emergence of a novel pathogen, post-lockdown waning immunity, and environmental conditions.

## Public Health Response:

Chinese authorities have implemented robust measures, including enhanced nationwide surveillance, releasing pediatric mycoplasma pneumoniae treatment guidelines, strengthening healthcare system capacity, and requesting cluster updates [9-11]. The WHO has also requested additional information through the International Health Regulations [12]. Ongoing analyses aim to establish links between the overall seasonal rise and undiagnosed clusters.

Parallels with the COVID-19 Pandemic and Urgency for Transparent Information Sharing: Drawing parallels between the unknowns surrounding these pediatric respiratory clusters and the information gaps at the onset of the COVID-19 pandemic underscores the importance of transparent information sharing. Delays in sharing critical information during the early stages of the Wuhan outbreak compromised control efforts, and the trauma from that experience necessitates urgent and transparent updates in the current situation.

Comparisons in Mobility Patterns and Global Interconnectedness: Considering comparisons between mobility patterns that may have

seeded the spread of COVID-19 from China to Northern Italy in 2020 and recent reports of travelers from China being monitored in places like Japan and the US highlights the interconnectedness of countries through travel and trade. This interconnectedness means outbreaks in one nation can quickly escalate globally without coordinated responses.

## Conclusion

Since mid-October 2023, Chinese surveillance systems have detected a broad upsurge in pediatric respiratory illnesses, attributed to lifted COVID-19 restrictions and typical winter pathogens. Media reports on undiagnosed pneumonia clusters create an alarming information gap. As winter unfolds, health officials [13] must actively monitor trends and take proactive preparedness steps, collaborating globally to prevent potential escalation beyond containment.

## References

1. Cati MM. The COVID-19 Pandemic and the Health Policy Crisis in Italy: is there a Chinese Connection. *Int J Biomed Res Prac.* 2022; 2: 1-7.
2. Data and commentary from Press Conference of National Health Commission. 2023. <http://www.nhc.gov.cn/xcs/s3574/202311/0807e750e6cc4a81a22b6d881913cf5d.shtml>
3. Data on SARS-CoV-2 and influenza from China. [https://www.chinacdc.cn/jkzt/crb/zl/szkb\\_11803/jszl\\_13141/202311/t20231110\\_270578.html](https://www.chinacdc.cn/jkzt/crb/zl/szkb_11803/jszl_13141/202311/t20231110_270578.html)
4. WHO Statement on reported clusters of respiratory illness in children in northern China. World Health Organization. 2023.
5. Disease Outbreak News: Upsurge of respiratory illnesses among children in northern China. World Health Organization. 2023.
6. Data and commentary from Press Conference of National Health Commission. 2023.
7. WHO asks China for details on respiratory illness outbreaks. Reuters. 2023.
8. Large outbreak of pneumonia in China, pediatric hospitals in Beijing, Liaoning overwhelmed. *Forexlive.* 2023.
9. Beasley Deena, Silver Andrew, Rigby Jennifer, et al. China says no unusual pathogens found after WHO queries respiratory outbreaks. Reuters. 2023.
10. Calm urged as pneumonia cases in children increase. *China Daily.* 2023.
11. Chatterjee Phelan, Walsh Fergus, Mazumdar Tulip. China says no 'unusual or novel pathogens' after WHO queries respiratory outbreaks. *BBC NEWS.* 2023.
12. Chen J, Zhang J, Lu Z, et al. Mycoplasma pneumoniae among Chinese Outpatient Children with Mild Respiratory Tract Infections during the Coronavirus Disease 2019 Pandemic. *Microbiol Spectr.* 2022; 10: e0155021.
13. WHO advises Chinese to take measures amid respiratory illness spike. *The Times of India.* 2023.