

Feedback from operational stakeholders who manage or respond to outbreaks is that they are often too busy to review literature or obtain relevant background information to assist them with acute response. Unlike a traditional analytical outbreak investigation report, **Watching Briefs** are intended as a rapid resource for public health or other first responders in the field on topical, serious or current outbreaks, and provide a digest of relevant information including key features of an outbreak, comparison with past outbreaks and a literature review. They can be completed by responders to an outbreak, or by anyone interested in or following an outbreak using public or open source data, including news reports.

Watching brief	
Title	Increase in respiratory disease among children in mainland China, winter 2023 - 2024
Authors	Joel Keep and David Heslop
Date of first report of the outbreak	<p>Reports of “undiagnosed pneumonia” among children in Beijing, Liaoning and elsewhere emerged in late November of 2023, attracting significant international media attention. ProMED mail, a publication of the International Society for Infectious Diseases, cited a report by Taiwan’s FTV News from November 21 that described children’s hospitals being “overwhelmed with sick children”, and “schools and classes on the verge of suspension” (1).</p> <p>In an official statement the same day, the World Health Organization (WHO) referred to a press conference on November 13 at which officials from China’s National Health Commission “reported an increase in the incidence of respiratory diseases” (2). The officials attributed this to “the lifting of COVID-19 restrictions and the circulation of known pathogens such as influenza, <i>Mycoplasma pneumoniae</i> (a common bacterial infection which typically affects younger children), respiratory syncytial virus (RSV), and SARS-CoV-2”. The WHO said additional epidemiological and clinical information was being requested from Beijing, including laboratory results, via the International Health Regulations (IHR) mechanism (2).</p>
Disease or outbreak	Various infections common among children and adults: COVID-19, <i>Mycoplasma pneumoniae</i> infection, RSV, influenza, and other pathogens. At the time of writing, no novel infectious agents have been identified.
Origin (country, city, region)	Initial reports centred on the capital, Beijing, a city of over 21 million people, and Dalian, a port city in Liaoning province, home to more than 6 million. There is nearly 800km of distance between the two locations (1). Paediatric

	presentations have also increased in the city of Xi'an (3), and in southern cities such as Guangzhou (4).
Suspected Source (specify food source, zoonotic or human origin or other)	Respiratory illnesses circulating widely in humans have been suggested by Chinese officials to be the cause of rising presentations.
Date of outbreak beginning	The media reports referred to in this Watching Brief were first published on November 21, 2023. Subsequent data provided to the WHO by Chinese officials indicated a rise in paediatric respiratory illness was first detected in mid-October (5).
Date outbreak declared over	Ongoing.
Affected countries & regions	Northern and central China, including the capital Beijing, and other urban areas in the south.
Number of cases (specify at what date if ongoing)	International media reportage and eyewitness accounts suggested the recent surge of disease was stretching available hospital capacity, a detail later denied by the Chinese Centre for Disease Control (CCDC) (3). Sentinel hospitals in northern and southern provinces detected a higher incidence of influenza-like illness in late November of 2023, compared to the same period in 2022, according to the CCDC (6). Data from the EPIWATCH system also show an increase in respiratory illness in late 2023 compared with late 2022, with an upward trend first detected in September of 2023 (7). Exact case numbers from 2023 are not obtainable at present, nor are estimations of hospital occupancy rates feasible.
Clinical features	The initial reportage by FTV news cited "a Beijing citizen" describing febrile illness devoid of any obvious coryzal symptoms: "They don't cough and have no symptoms. They just have a high temperature (fever) and many develop pulmonary nodules". The same person was quoted as saying "many, many are hospitalised" (1). Later reports suggested coryzal symptoms usually seen in common respiratory diseases, including cough, sore throat, and fever (3, 4).
Mode of transmission (dominant mode and other documented modes)	Airborne (suspected), droplet and contact.

<p>Demographics of cases</p>	<p>Initial reports describe a heightened burden of respiratory disease among school-aged children. The FTV report stated that “teachers are also infected with pneumonia” (1). A fuller picture of case numbers and demographic characteristics is yet to emerge.</p>
<p>Case fatality rate</p>	<p>Not obtainable at present.</p>
<p>Complications</p>	<p>Pneumonia is a complication seen in more severe cases of influenza, RSV, COVID-19 and <i>Mycoplasma pneumoniae</i> infection, with the latter being a common cause of community acquired pneumonia (8). <i>M. pneumoniae</i> infection can also trigger latent or new-onset asthma, encephalitis, haemolytic anaemia, renal dysfunction and skin disorders, such as Stevens-Johnson syndrome (9). In more serious cases, pulmonary nodules can develop in both children and adults as a result of bacterial infections, such as <i>Streptococcus pneumoniae</i>, or viral infections, such as influenza (5, 10).</p> <p>RSV can be severe for very young infants, and the elderly. Bronchiolitis, the inflammation of the small airways of the lung, can result from RSV (11). Severe influenza presentations can involve myocarditis, encephalitis, multi-organ failure or acute respiratory distress syndrome (ARDS) (10). COVID-19 has a range of potential complications in some children, including multi-system inflammatory syndrome, sometimes referred to as “Kawasaki’s disease” (12). The most severe cases of COVID-19 progress to ARDS, and both mild and severe infections can result in post-acute sequelae, or “Long Covid” affecting multiple bodily domains (13).</p>
<p>Available prevention</p>	<p>Infection control measures, personal hygiene and vaccination can be useful in the control of respiratory diseases. Vaccination against circulating influenza strains and COVID-19 is available each year in China, as elsewhere. In May of 2023, the first RSV vaccine was approved for use in the United States for adults 60 years and older, but is yet to receive approval in China (14, 15). In July, the US Food and Drug Administration (FDA) approved Nirsevimab (Beyfortus), a prophylactic monoclonal antibody treatment for children up to 24 months of age at risk of severe RSV disease (16). The following month, the FDA gave approval for use of Pfizer’s RSVpreF vaccine in pregnant women to prevent severe RSV disease in infants under 6 months of age (17). In general, cross-ventilation of indoor spaces and access to fresh air can lower the chances of infection with airborne pathogens, including in school settings (18). Healthcare workers are best provided with high quality airborne protection when caring for patients, including N-95 masks, gowns, and appropriate eyewear (19).</p>

<p>Available treatment</p>	<p>Those quoted in initial reports described children being treated with intravenous (IV) fluids (20). Supportive measures, such as oral and IV rehydration, is the main intervention for RSV, for which there is no specific treatment (11). Antibiotic drug therapy is usually indicated for those who develop pneumonia secondary to <i>M. pneumoniae</i> infection (8). Antimicrobial stewardship is an important part of clinical care of acute respiratory infections, especially where clinicians may be uncertain as to the causative agent (21). Macrolide-resistant strains of <i>M. pneumoniae</i> have been detected in mainland China, with a 2019 study finding a 100% resistance rate in the city of Jilin, and resistance rates of 54% and above in four other urban areas (22). A 2019 multi-centre study in Beijing found over 87% of <i>M. pneumoniae</i> strains isolated from school-aged children were resistant to macrolides (23). Antiviral agents are available for the treatment of influenza and COVID-19 cases where necessary (24).</p>
<p>Comparison with past outbreaks</p>	<p>Like other regions, central and northern China sees a rise of respiratory illnesses among children and adults in winter periods. This recent increase is occurring in the first winter since national authorities lifted strict “zero-Covid” measures aimed at suppressing community transmission of SARS-CoV-2 (25). The abrupt end of these restrictions resulted in widespread infections of COVID-19, with all-cause excess deaths over the winter of 2022-2023 amounting to an estimated 1.87 million, well above the 60,000 deaths officially reported (26).</p> <p>In many other jurisdictions, such as Australia, the end of emergency pandemic controls saw the return of other respiratory diseases, including influenza and RSV (27). A lack of exposure to these pathogens during lockdown is thought by some researchers to have resulted in greater susceptibility to disease among much of the population, which may explain the higher rates of morbidity seen from respiratory pathogens that previously circulated with more regularity (28). Others emphasise the role of widespread SARS-CoV-2 infection (29), which has been associated with persistent immunological dysfunction, leaving survivors susceptible to other viral and bacterial pathogens (30). In 2022, for example, COVID-19 was found to be associated with increased risk of RSV infection among children aged 0 – 5 years in the United States (31).</p> <p>The response of political authorities in China to past outbreaks of infectious disease is of direct relevance to this recent surge of illness, and the media interest it has provoked. Numerous instances in which public health information has been suppressed for political reasons in the PRC has resulted in decreased warning time for the international community, and has contributed to ongoing distrust between Beijing and other national capitals (32). Particular concerns relate to the suppression of information during the</p>

	<p>emergence of SARS-CoV-2 in Hubei province in late 2019 (discussed further below). Earlier patterns of official obfuscation occurred during the Severe Acute Respiratory Syndrome (SARS) epidemic of 2002-2004, during which authorities went to extraordinary lengths to conceal the extent of disease from outside observers (33). Human infections of H5N1 avian influenza in Hong Kong in 1997, which originated among poultry farmed in Guangdong, also led to political censorship, with Hong Kong officials reportedly anxious not to provoke Beijing by publicly discussing the source (34). The accidental release of <i>Brucella</i> in late 2019 from a biopharmaceutical plant in the city of Lanzhou, during which approximately 10,000 people were infected by the bacteria, was also met with censorship (35, 36). More recently, residents in Tibet were threatened with prosecution for publicly discussing cases of pneumonic plague, after infections and deaths were recorded there in late 2022 (37).</p>
<p>Unusual features</p>	<p>Various media outlets cited infectious disease specialists who suggested that the causative agent in many of these cases may be <i>Mycoplasma pneumoniae</i>, a bacterial infection that usually affects younger children (38). However, ProMED analysts noted that the news sources specifically reported “no cough” among those infected (1), a symptom that would be expected of <i>M. pneumoniae</i> infection, in which cough can take weeks to resolve (39). Younger children infected with <i>M. pneumoniae</i> usually present with various coryzal symptoms, and around 25% of cases involve gastrointestinal symptoms (40). Furthermore, the radiographic presentation of <i>M. pneumoniae</i> infection usually features peribronchial and perivascular interstitial infiltrates, airspace consolidation and reticulonodular opacification (41). Mild clinical manifestations of <i>M. pneumoniae</i> infection can often present in stark contrast to chest imaging that reveals “walking pneumonia” (42). The reports emerging from China, however, refer to “pulmonary nodules”, which is only seen in around 5% of <i>M. pneumoniae</i> cases (41).</p>

Critical analysis

This reported rise in respiratory disease among children in mainland China is most notable for the contemporary political context in which it is occurring, in the aftermath of the COVID-19 pandemic. The initial FTV report cited by ProMED stated that “parents questioned whether the authorities were covering up the epidemic” (1). Some outlets in the international press raised similar concerns as to whether the full extent and nature of the circulating illness was being accurately reported (43). In subsequent days, an increase in *M. pneumoniae* infections among children was reported in Denmark, the Netherlands and other European jurisdictions (44). A key question being raised was whether the rise in hospitalisations could be attributed to known seasonal illnesses, or whether a novel pathogen was emerging in China (45).

Such anxieties point to a central, unresolved issue that has enduring implications for global health security: the repeated and ongoing suppression of data related to the emergence of SARS-CoV-2 in late 2019, and the impact this has had on international collaboration and institutional trust (46, 47). It is now well documented that both local and national authorities suppressed key information in the first months of the 2019 epidemic in Wuhan, and continued to do so as the outbreak escalated into a pandemic (48, 49). Rather than being promptly notified by officials in Beijing, as is expected under the International Health Regulations, WHO officials reportedly first learnt of the coronavirus outbreak in Wuhan via ProMED, in an alert the service issued on 31 December, 2019 (50), and via other non-official channels, including news sources (51). As the Wuhan epidemic developed in early 2020, WHO personnel were privately expressing frustration regarding how little data was being shared (52). Political interference also extended to the dissemination of genetic sequences of the virus, with a Shanghai-based researcher facing recrimination for sharing the first whole genome sequence with overseas colleagues (53). Furthermore, officials from Beijing did not concede SARS-CoV-2 was transmitting between humans until late January 2020, despite government records of cases reportedly extending as far back as 17 November, 2019 (54), and the first symptom onset date in peer-reviewed literature being dated to Dec 1, 2019 (55). It was later revealed that the extent of morbidity and mortality in Wuhan in the first months of 2020 far exceeded official accounts (56).

In addition to the suppression of information during the first weeks of the outbreak in Wuhan, political obstruction to data sharing extended to later investigations of how SARS-CoV-2 first entered the human population. Overseas investigators assigned to the joint WHO-China investigative mission that deployed to Wuhan in January 2021 told media that key information had been withheld, including biological data, and line lists of initial cases (57, 58). Stored samples of human serum were also not tested (59). In July of 2021, Beijing announced that no further investigative efforts would be allowed on its territory, and declined to allow the WHO to conduct the second phase of the joint mission (60).

	<p>It is notable that Taiwanese media is involved in the current reports of respiratory illness in mainland China. Independent media is almost non-existent in mainland China, and journalists not sanctioned by the ruling Communist Party are subjected to repeated persecution (61). Citizen journalists who reported on the outbreak of the coronavirus in Wuhan were subjected to lengthy periods of arbitrary detention, with at least one such individual still in prison as of November 2023 (62). Clinicians who sought clarity on the outbreak, or who discussed it privately among themselves, were also reprimanded (62). As they operate in a jurisdiction with greater freedom of inquiry, Taiwanese investigators played a key role in obtaining and disseminating information from China in early 2020 (63). Health officials in Taipei moved promptly to enact pandemic control measures that proved highly effective (64).</p> <p>Public uncertainty surrounding the recent surge of respiratory disease in China suggests the political suppression of information during the emergence of SARS-CoV-2, and previous outbreaks of infectious disease, has ongoing implications for global health security. Reports of unexplained illness in mainland China will likely be met with alarm for as long as transparency on the part of political officials is lacking. Regardless of where pathogens originate, restrictions on information and free communication severely constrains clinicians, public health officials and policymakers who seek to manage outbreaks that can affect local communities, whole nations, and the international community at large.</p>
<p>Key questions</p>	<ol style="list-style-type: none"> 1. Are reports of hospital capacity being overwhelmed by these presentations accurate? 2. Is any novel infectious agent implicated in this rise of febrile illness among children in mainland China? 3. What impact has widespread infection with SARS-CoV-2 had on population susceptibility to other infections? 4. How can antimicrobial stewardship be supported in periods where bacterial and viral agents are co-circulating, and what new measures are needed to manage macrolide-resistant strains of <i>M. pneumoniae</i>? 5. How can health intelligence practitioners obtain more complete epidemiological data in cases where information is subject to political control? 6. How can international collaboration and cross-jurisdictional trust be restored following the COVID-19 pandemic?

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