

Epidemiological Alert: Increased activity of seasonal influenza virus and other respiratory viruses in the northern hemisphere

17 January 2025

In the current season of increased circulation of respiratory viruses in the northern hemisphere during the 2024 - 2025 season, several countries, mainly in the European region, are reporting an increase in care seeking and hospitalizations for respiratory infections. Given this situation and considering that similar situations may occur in the countries of the Americas Region that are in the season of increased circulation of respiratory viruses, the Pan American Health Organization / World Health Organization (PAHO/WHO) recommends adjusting preparedness plans and organization of health services for an eventual overload in the health system. It is recommended to reinforce the necessary measures for the prevention and control of respiratory virus infections, implement measures to ensure early diagnosis and adequate clinical management, especially among the population at high risk of severe disease, ensure vaccination against respiratory viruses, ensuring high vaccination coverage in high-risk groups, adequate forecasting and organization of health services, strict compliance with infection prevention control measures, adequate supply of antivirals and personal protective equipment, as well as adequate risk communication to the population and health professionals.

Summary of the situation

According to available respiratory virus surveillance data reported by countries to the World Health Organization (WHO) as of 11 January 2025, worldwide influenza positivity of 22.05% is observed in epidemiological week (EW) 1 of 2025, representing a 2.8% increase in positivity compared to EW 52 of 2024 (**Figure 1**) (1). In the Northern Hemisphere, since the end of 2024, high influenza virus activity is observed, with an increasing trend in several countries in Europe and North America¹ (mainly with detection of A(H1N1)pdm09, in addition to A(H3N2)), Central America² and the Caribbean³ (mainly A(H3N2)), West Africa (mainly A(H1N1)pdm09), Central Africa (mainly A(H1N1)pdm09), North Africa (mainly A(H3N2)), and in several countries in Asia (mainly with detection of A(H1N1)pdm09) (**Figure 2**) (2).

Acute respiratory infections (ARI) are expected to show an increasing trend in the winter, due to simultaneous circulation of multiple respiratory pathogens such as seasonal influenza, respiratory syncytial virus (RSV), human metapneumovirus (hMPV), and Mycoplasma pneumoniae. This

¹Canada, Mexico and the United States of America.

²Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama.

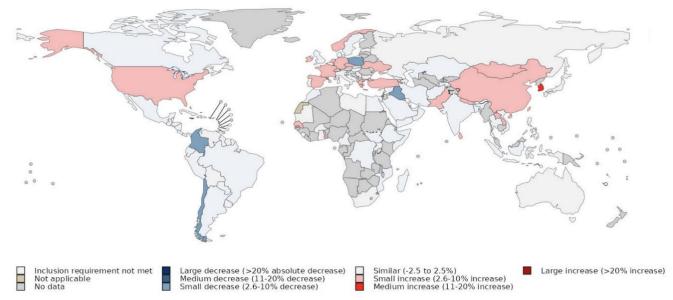
³ Aruba, Bahamas (the), Barbados, Belize, Bermuda, Cayman Islands, Cuba, Curaçao, Dominica, French Guiana, Guadeloupe, Martinique, Dominican Republic (the), Saint Martin, Saint Barthelemy, Guyana, Haiti, Jamaica, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, and Trinidad and Tobago.

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situation can place an increased burden and demand on health systems, making it essential to prepare health services for the possibility of an increase in cases or outbreaks (3).

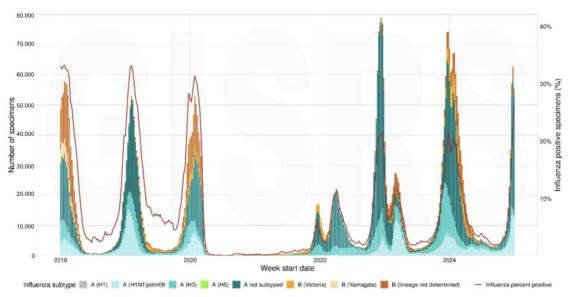
An increase in Influenza Type Illness (ILI) and/or Severe Acute Respiratory Infection (SARI) rates has been observed in recent weeks in northern hemisphere countries, placing them above threshold levels, in line with usual seasonal trends (3, 4).

Figure 1. Variation in the proportion of influenza-positive samples from EW 1 of 2025 compared to EW 52 of 2024.



Source: Adapted from World Health Organization. Global Respiratory Virus Activity Weekly Update No. 509. Geneva: WHO; 2025 [cited 17 January 2025]. Available from: <u>https://cdn.who.int/media/docs/default-source/influenza/influenza-updates/2025/202501 who-respiratory-virus-update 509.pdf</u> (2).

Figure 2. Influenza virus detections by subtype reported to FluNet, between 1 January 2018 and 30 December 2024 in Northern Hemisphere countries.

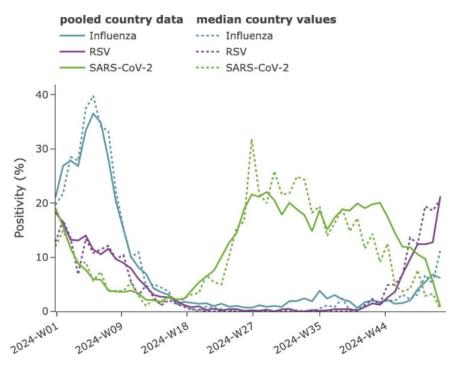


Source: Adapted from World Health Organization. Influenza Laboratory Surveillance Information. Geneva: WHO; 2025 [cited 10 January 2025]. Available from: <u>https://worldhealthorg.shinyapps.io/flunetchart/ (4)</u>.

Situation in the European Region

The cases of ILI and acute respiratory infections are above the baseline level in 16 of 30 countries in the WHO European Region. Influenza positivity remains elevated, with an increase in SARI hospitalizations, mainly affecting older adults. RSV activity remains moderate, while SARS-CoV-2 activity remains low at the regional level (**Figure 3**) (5).

Figure 3. Percentage of total positivity and median values for influenza, RSV and SARS-CoV-2 by epidemiological week in countries of the WHO European Region. Between EW 1 of 2024 and EW 1 of 2025.

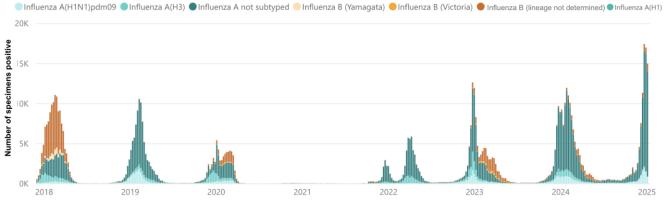


Source: Adapted from World Health Organization. European Respiratory Virus Surveillance Summary. Geneva: WHO; 2025 [cited 10 January 2025]. Available from: <u>https://erviss.org/</u>(5).

ILI cases are elevated in 14 countries. Thirty-six percent of samples tested were positive for influenza, with a median positivity of 30% in 15 countries, with a predominating A(H1)pdm09 subtype (86%). SARS-CoV-2 positivity remained at 2%, while RSV remained at 8%. Fourteen countries reported medium or higher influenza intensity, and 24 reported regional or widespread spread, mainly in northern European countries and territories (**Figure 4**). In **Italy** and **Switzerland**, ILI cases continue to increase, surpassing pre-pandemic years (5).

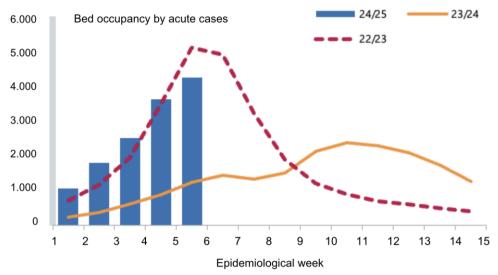
Regarding SARI cases, 20% of the samples tested positive for influenza, higher than the 16% of the previous week, with a median of 23% in 11 countries. The majority of detections were influenza type A (87%), with a predominating A(H1)pdm09 (85%). Positivity for SARS-CoV-2 decreased to 3%, and for RSV remained at 13%. In **Spain**, an increase in hospitalization rates for SARI has been reported, although it has not exceeded the previous two years (6), while in **France** there is still an increase in emergency consultations for SARI above pre-pandemic levels (7). In **England**, influenza hospitalizations for EW 1 of 2025 increased to 14.09 per 100,000 population (10.69 in EW 52 of 2024), and Intensive Care Unit (ICU) admissions increased to 0.50 per 100,000 population (0.42 in EW 52 of 2024) (**Figure 5**) (8).

Figure 4. Influenza virus detections by subtype in Northern European countries and territories⁴, reported to FluNet, between 1 January 2018 and 10 January 2025.



Source: Adapted from World Health Organization. Influenza Laboratory Surveillance Information. Geneva: WHO; 2025 [cited 10 January 2025]. Available from: https://worldhealthorg.shinyapps.io/flunetchart/ (4).

Figure 5. Bed occupancy by acute cases of influenza in England, reported to National Health Service in England, by epidemiological week and year, 2022 - 2024.



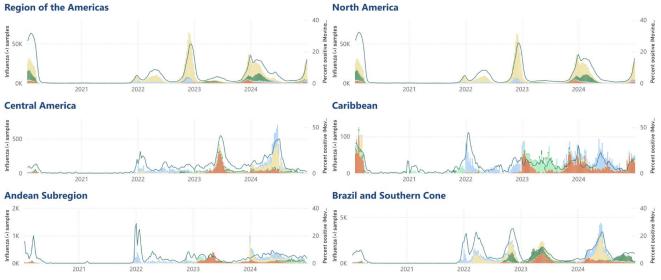
Source: Adapted from National Health Service England. NHS Activity Tracker 2024/25 - Urgent and Emergency Care Daily Situation Reports 2024-25. London: NHS; 2025 [cited 16 January 2025]. Available from: https://nhsproviders.org/nhs-activity-tracker-202425/december-2024/winter (9).

⁴ Denmark, Estonia, Faroe Islands, Finland, Guernsey, Iceland, Ireland, Isle of Man, Jersey, Latvia, Lithuania, Northern Ireland, Norway, Scotland, Svalbard and Jan Mayen, Sweden, United Kingdom, and Wales.

Respiratory Virus Situation Americas Region

According to the information reported for the countries of the Americas Region as of EW 1 of 2025, ILIs and SARI have shown a marked increase in North America, associated with the circulation of RSV and influenza virus; in contrast to SARS-CoV-2 activity, which continues to decrease. As for influenza, there has been an increase in North America and the Caribbean, as well as in some countries of the Andean subregion⁵ and the Southern Cone⁶ (Figure 6). RSV activity remains high in some Caribbean countries and territories, although with a decreasing trend and continues to rise and with high levels in North America (Figure 7) (10).

Figure 6. Influenza virus distribution and percentage of positivity in the Americas Region, between EW 1 of 2020 and EW 1 of 2025.



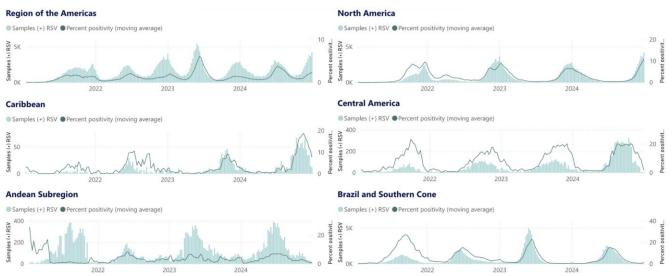
🗢 AH1 🔍 AH1N12009 🔍 A H3 🔍 B VICTORIA 🏶 BYAMAGATA 🗣 B NOT DETERMINED 🗣 A NOT SUBTYPABLE 🌍 A NOT SUBTYPED 🗣 Percent positive (Moving average)

Source: Pan American Health Organization / World Health Organization. Influenza, SARS CoV-2, RSV and other respiratory viruses - Americas Region - Epidemiological Week: 2025 - 1. Washington, D.C.: PAHO/WHO; 2025. [cited 16 January 2025]. Available from: <u>https://www.paho.org/en/topics/influenza-sars-cov-2-rsv-and-other-respiratory-viruses/influenza-situation-region-americas</u> (10).

⁵Bolivia (Plurinational State of), Colombia, Ecuador, Peru and Venezuela (Bolivarian Republic of).

⁶ Argentina, Brazil, Chile, Paraguay and Uruguay.

Figure 7. Distribution of RSV and percentage of positivity Americas Region, between EW 1 of 2021 and EW 1 of 2025.



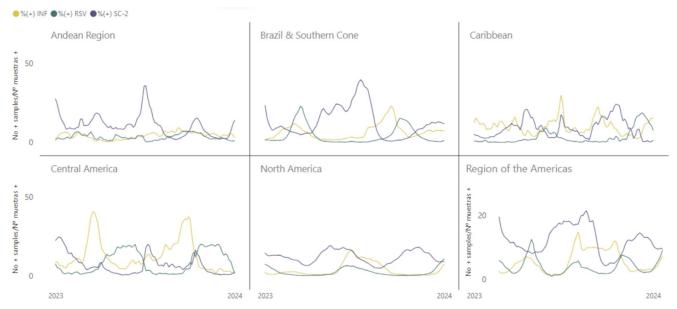
Source: Pan American Health Organization / World Health Organization. Influenza, SARS CoV-2, RSV and other respiratory viruses situation - Americas Region - Epidemiological Week: 2025 - 1. Washington, D.C.: PAHO/WHO; 2025. [cited 16 January 2025]. Available from: <u>https://www.paho.org/en/respiratory-syncytial-virus-rsv-situation-regionamericas</u> (10).

North America Subregion⁴

Cases of ILI, SARI and hospitalizations associated with respiratory viruses have maintained an upward trend in the last four EW. Most of the positive cases of ILI are associated with influenza, while of SARI/hospitalizations are associated with influenza and RSV. Influenza activity has increased and is at epidemic levels in all countries. During this period, the predominant influenza viruses have been A(H3N2) and A(H1N1)pdm09. RSV activity continues to increase, reaching levels similar to the peaks observed in previous seasons. In contrast, SARS-CoV-2 activity remains at low levels compared to previous waves (**Figure 8**) (10).

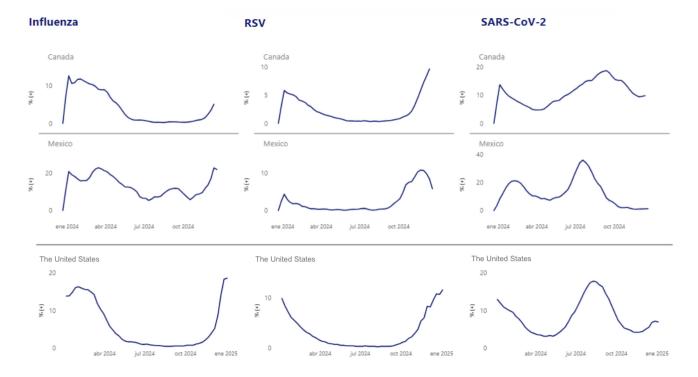
In **Canada**, influenza and RSV activity continues to rise and is at epidemic levels comparable to previous seasons (**Figure 8**). In **Mexico**, cases of ILI and SARI have increased slightly and are at epidemic levels. These cases are mainly attributed to influenza, which is increasing, and RSV, which after reaching its peak has begun to decline (**Figure 9**). In the **United States of America**, respiratory virus hospitalizations have reached levels similar to last season, most attributable to influenza, followed by RSV and SARS-CoV-2 (**Figure 9**). Preliminary assessments of the influenza season indicate a moderate level of intensity across all age groups with regard to indicators of ILIs, hospitalization rates, and influenza-associated deaths (10).

Figure 8. Percentage of influenza, RSV and SARS-CoV-2 positivity for the Americas Region and by subregion between EW 1 of 2023 and EW 1 of 2025.



Source: Adapted Pan American Health Organization / World Health Organization. Influenza, SARS CoV-2, RSV and other respiratory viruses situation - Americas Region - Epidemiological Week: 2025 - 1. Washington, D.C.: PAHO/WHO; 2025. [cited 16 January 2025]. Available from: Influenza, SARS-CoV-2, RSV and other Respiratory Viruses Regional Situation - PAHO/WHO | Pan American Health Organization (10).

Figure 9: Percentage of positivity for influenza, RSV and SARS-CoV-2 in Canada, Mexico and the United States between epidemiological week 1 of 2024 and epidemiological week 1 of 2025.



Source: Adapted Pan American Health Organization / World Health Organization. Influenza, SARS CoV-2, RSV and other respiratory viruses situation - Americas Region - Epidemiological Week: 2025 - 1. Washington, D.C.: PAHO/WHO; 2025. [cited 16 January 2025]. Available from: Influenza, SARS-CoV-2, RSV and other Respiratory Viruses Regional Situation - PAHO/WHO | Pan American Health Organization (10).

Caribbean Subregion⁵

ILI cases have increased slightly, while SARI cases remain low. Influenza activity has increased, and RSV, although previously elevated, has begun to decline (**Figure 7**) (10). In **Jamaica**, SARI cases remain at epidemic levels, while influenza and RSV infections are declining (9). In **Suriname** and **Guyana**, cases of ILI and SARI have shown slight increases, mainly associated with RSV. SARS-CoV-2 activity remains low throughout the subregion (10).

Recommendations

The following is a summary of the main recommendations for surveillance, clinical management and prophylaxis, risk communication, and vaccination.

Surveillance

PAHO/WHO recommends that Member States integrate surveillance for influenza, RSV, SARS-CoV-2, and other respiratory viruses into existing national platforms and report surveillance data on a weekly basis through the PAHO/WHO FluNET and FluID platforms.

It is recommended that Member States continue to strengthen sentinel surveillance of ILIs and prioritize sentinel surveillance of ARI by complementing it with other surveillance strategies to monitor epidemiological changes and trends in viral circulation to assess transmission patterns, clinical severity, and impact on the health system and society; and to identify groups at risk of developing associated respiratory complications (11).

As a complement to indicator-based surveillance, PAHO/WHO recommends that Member States implement event-based surveillance. Event-based surveillance is the organized and rapid capture of information on events that may represent a potential public health risk. The information may come from rumors and/or other ad-hoc reports transmitted through formal routine information systems (routine, pre-established information systems) or informal, non-pre-established information systems (i.e., mass media, direct communication from health workers or non-governmental organizations). Event-based surveillance is a functional component of the early warning and response mechanism (12).

Respiratory events that are unusual should be investigated immediately and reported to PAHO/WHO in accordance with the International Health Regulations (IHR) (13). Unusual events include cases of acute respiratory illness with atypical clinical progression; acute respiratory infection associated with exposure to sick animals, or observed in travelers from areas prone to novel influenza viruses; cases of SARI in health care professionals who are medically caring for severe respiratory cases of unknown etiology; or clusters of influenza virus outside the typical season of circulation.

As part of routine indicator-based surveillance, and for etiologic confirmation of unusual cases, nasopharyngeal and oropharyngeal specimens (or bronchial lavage in severe cases) should be obtained for detection of respiratory viruses. Laboratory testing should always be prioritized for the most severe cases, especially those admitted to the ICU and fatal cases (deaths) in which respiratory tract tissue sampling is also recommended (if possible). All biosafety measures for respiratory pathogens should be taken. The technical guidelines and diagnostic algorithms of the National Influenza Center or the national reference laboratory responsible for laboratory surveillance should be followed. Recommended testing algorithms for influenza, RSV, and SARS-CoV-2 are available on the PAHO/WHO website (14).

According to WHO guidelines, influenza-positive specimens from severe cases or cases with unusual clinical respiratory presentations should be sent to the WHO Collaborating Center (CC) at the U.S. Centers for Disease Control and Prevention (U.S. CDC) in Atlanta for further characterization (15). Influenza A specimens that cannot be subtyped (those positive for Influenza A but where PCR for subtyping is negative or inconclusive) should also be sent immediately to the PAHO/WHO CC at the U.S. CDC (15).

Influenza-positive samples from animals should be sent to the PAHO/WHO CC at St. Jude Hospital in Memphis, Tennessee, in the United States, for further characterization.

Clinical management and prophylaxis

The recommendations for the clinical management of patients with severe respiratory illness as outlined in the PAHO/WHO epidemiological alerts and updates on influenza remain in effect (16). Timely clinical management, prevention and control of infection, and prevention of complications are critical elements. PAHO/WHO recommends that Member States update their treatment guidelines based on the updated WHO guidelines (17 - 19).

Groups at increased risk for complications related to influenza infection include children younger than two years of age; adults \leq 65 years; pregnant or postpartum women; persons with underlying clinical morbidity (e.g., chronic lung disease, asthma, cardiovascular disease, chronic kidney disease, chronic liver disease, diabetes mellitus, neurologic conditions such as central nervous system lesions, and delayed cognitive development); persons with immunosuppression (e.g., HIV/AIDS or due to medications); and persons with morbid obesity (body mass index greater than 40) (17). In the management of anyone with severe or progressive clinical presentation of respiratory disease, it is recommended:

	Recommendations
	Rapidly identify patients with signs of SARI at the first contact with the health system.
	Prioritize immediate attention to serious cases and avoid delays in emergency treatment.
Infection prevention and control	Implement standard precautions in all patients.
	Apply contact and droplet precautions in suspected cases of severe influenza.
	In procedures that generate aerosols, add airborne precautions in addition to contact and droplet precautions.
Classification according to severity	Place patients in designated areas according to the severity of their illness and acute care needs.
	Hospitalize patients with severe complications (severe pneumonia, sepsis, organ dysfunction, co-infections) in intensive care areas.
Hospital care and management	Hospitalize critically ill patients with SARI to manage complications such as pneumonia, sepsis, or exacerbations of chronic diseases.
	Immediately admit patients with acute organ failure to the ICU for close monitoring and advanced care.

 Table 1. Recommendations for persons with severe or progressive clinical presentation of respiratory disease.

Continuous monitoring and follow-up	Perform constant follow-up in the ICU to assess the patient's evolution and adjust treatment as needed.
Antiviral and other treatments	Initiate antiviral treatment as soon as possible in patients with suspected or confirmed influenza, even before laboratory confirmation.
	Administer oseltamivir in cases with risk of severe disease (seasonal, pandemic, or zoonotic influenza).
	Do not use inhaled zanamivir, inhaled laninamivir, intravenous peramivir, corticosteroids, macrolide antibiotics, or passive immunotherapy, unless indicated.
	Treatment with antivirals according to recent guidelines in case of suspected COVID-19.

Source: Adapted from World Health Organization. Clinical care of severe acute respiratory infections - Tool kit. Geneva: WHO; 2022. Available from: <u>https://www.who.int/publications/i/item/clinical-care-of-severe-acute-respiratory-infections-tool-kit</u> and from World Health Organization. Clinical practice guidelines for influenza. Geneva: WHO; 2024. Available from: <u>https://www.who.int/publications/i/item/9789240097759</u> (18, 19).

In settings where RT-PCR or other rapid molecular assays for influenza (with equally high sensitivity and specificity) are available and where results are expected within 24 hours, we suggest a strategy of testing for influenza, administering oseltamivir treatment as soon as possible, and re-evaluating treatment when the test result is available.

In settings where RT-PCR or other rapid molecular assays for influenza (with equally high sensitivity and specificity) are not available to have a result within 24 hours, we suggest administering oseltamivir as soon as possible.

For more details, refer to the WHO guidelines, Guidelines for the clinical management of severe illness caused by influenza virus infections (17) and Clinical care of severe acute respiratory infections - Toolkit (18).

Guidelines for the clinical management of COVID-19, including the use of antivirals, monoclonal antibodies, and other interventions for the management of patients with COVID-19 (20) are available through PAHO technical documents (21) and WHO Clinical Management of COVID-19 (22).

Regarding clinical management and prophylaxis of RSV, young infants are at increased risk for severe complications and hospitalization for RSV infection and represent the greatest burden of disease. Many of the risk factors for RSV infections are similar to those identified for all causes of lower respiratory tract infections. There is no effective treatment, and supportive care remains the cornerstone of clinical management. Currently, treatment for RSV infections is symptomatic and there are no effective antiviral drugs. Passive immunization with monoclonal antibodies - palivizumab - is an appropriate intervention to reduce severe acute respiratory RSV infection in at-risk infants (23).

Prophylaxis with palivizumab is available for children <24 months at increased risk for severe RSV illness, as it was associated with a 43% reduction in the rate of RSV-related hospitalizations in children with congenital heart disease with hemodynamically important implications and a reduction in recurrent wheezing. The cost and method of drug administration remain a challenge, although its cost-effectiveness is well documented (23).

Key recommendations for RSV management include (24, 25):

- Diagnosis of bronchiolitis and assessment of the severity of the disease should be based on clinical history and physical examination. Laboratory and radiological studies should not be routinely requested for diagnosis.
- Risk factors for severe disease, such as age less than 12 weeks, history of preterm birth (particularly less than 32 weeks), underlying cardiopulmonary disease (including bronchopulmonary dysplasia and congenital heart disease with hemodynamically significant implications), neuromuscular disorders, or immunodeficiencies, should be assessed when making decisions about the evaluation and treatment of infants with bronchiolitis.
- Bronchodilators (albuterol, salbutamol), epinephrine and corticosteroids should not be administered to infants and children diagnosed with bronchiolitis. Likewise, nebulized hypertonic saline should not be administered to children diagnosed with bronchiolitis in the emergency department. Nebulized hypertonic saline can be administered to infants and children hospitalized for bronchiolitis.
- Antibiotics should not be used in children with bronchiolitis unless there is a concomitant bacterial infection.
- Palivizumab prophylaxis should be administered during the first year of life to infants with hemodynamically significant heart disease or chronic lung disease of prematurity (<32 weeks gestation requiring >21% O₂ during the first 28 days of life).
- To prevent the spread of RSV, hands should be decontaminated before and after direct contact with patients, after contact with inanimate objects in the vicinity of the patient, and after removing gloves. Alcohol is the preferred method for hand decontamination. Physicians should educate staff and family on hand sanitation.
- Infants should not be exposed to tobacco smoke.
- Exclusive breastfeeding is recommended for at least 6 months to reduce the morbidity of respiratory infections.

Risk communication

Seasonal influenza is an acute viral infection that spreads easily from person to person. Seasonal influenza viruses circulate worldwide and can affect anyone in any age group. Influenza vaccination before the onset of seasonal virus circulation remains the best preventive measure against severe influenza.

The public should be informed that the primary mode of transmission of influenza is interpersonal contact. Hand washing is the most efficient way to decrease transmission. Knowledge of "respiratory etiquette" also helps prevent transmission.

People with fever should avoid going to work or public places until the fever subsides. Similarly, school-aged children with respiratory symptoms, fever, or both, should stay home from school.

To take advantage of the knowledge that most of the public has acquired about respiratory disease prevention -in the wake of the COVID-19 pandemic-, and to avoid confusion and exercise effective communication, Member States should consider developing risk communication strategies and campaigns that integrate prevention messages for respiratory viruses. The integration of communication for the promotion of vaccination against COVID-19 and influenza is also recommended.

Vaccination

Immunization is an important strategy to prevent severe illness associated with seasonal influenza, COVID-19, and RSV, including associated hospitalizations and deaths.

PAHO/WHO recommends vaccination of groups at particular risk for severe influenza, including older adults, persons with underlying medical conditions, children aged 6-59 months, and pregnant women. Health care workers are at increased risk of exposure and transmission of influenza virus and SARS-CoV-2 and therefore should also be prioritized (26, 27). It is recommended that the same high-risk priority groups (with the exception of children younger than 59 months) receive booster doses of COVID-19 vaccine 6 to 12 months after the last dose. Finally, the Strategic Advisory Group of Experts (SAGE) on immunization recommends that all persons aged 6 months and older receive at least one dose of COVID-19 vaccine if they have never received one (28).

Two products, Nirsevimab and a vaccine against RSV prefusion-F protein (RSVPreF), have recently been licensed to prevent severe RSV disease in young infants. Nirsevimab is a long-acting, recombinant monoclonal antibody targeting the RSV prefusion-F protein, which shown to be safe and efficacious in infants in clinical trials. The product has demonstrated high effectiveness in initial post-marketing studies in several high-income countries. RSVPreF is a bivalent prefusion-F protein vaccine given to pregnant women to protect their infants through transplacental transfer of antibodies. In a phase 3 clinical trial, which enrolled pregnant women between 24-36 weeks' gestation, efficacy was high against severe RSV-positive severe medically attended lower respiratory tract infections (LRTI) (VE=70%; 95% CI 51-83) and RSV-positive medically-attended LRTI (VE=49%; 95% CI 31-63) in infants up to 180 days after birth. The efficacy was similar across countries of different income levels. This vaccine has been licensed and used in pregnant women in several countries in the Region, including Argentina, Canada, the United States, and Uruguay (28-30). The WHO SAGE on immunization recommended in September 2024 that all countries introduce products for the prevention of severe RSV disease in infants. For countries deciding to use maternal vaccine to prevent severe RSV disease in infants, SAGE recommended a single dose of vaccine in the third trimester of pregnancy, as defined in the local context (>28 weeks' gestation in most settings). For countries deciding to use Nirsevimab, SAGE recommended a single dose administered to all infants at birth, or at the earliest opportunity after birth, if a year round approach is adopted. With a seasonal approach, Nirsevimab is recommended for administration to all infants born during the RSV season or those aged ≤ 12 months entering the season (29).

Additionally, three vaccines for the prevention of RSV disease in older adults (\geq 60 years) were approved by the United States Food and Drug Administration (U.S. FDA) (30 - 32). In randomized clinical trials, the vaccines demonstrated efficacy in reducing the risk of developing severe RSV-associated disease (33).

Several vaccines and long-lasting monoclonal antibodies for the prevention of RSV disease are currently under clinical investigation, addition to significant progress in the understanding of the immune response to RSV.

Non-pharmacological public health measures in the population

Along with RSV immunization, personal measures such as hand hygiene, physical distancing, respiratory etiquette, use of masks, and staying home when sick are effective in limiting transmission of respiratory viruses (34).

As recently evidenced during the COVID-19 pandemic, nonpharmacological public health measures complement the respiratory event response. For more details, see the WHO guidelines: Nonpharmacological public health measures to mitigate the risk and impact of epidemic and pandemic influenza (34) and the manual Guidance for the application of nonpharmacological public health measures in vulnerable population groups in the context of COVID-19 (35).

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