Respiratory infections, encompassing a wide range of illnesses affecting the respiratory system, present significant challenges to public health.

These infections can range from **mild colds** to potentially more severe respiratory diseases, such as **influenza, tuberculosis, legionnaires' disease, COVID-19 and emerging threats**.

Rapid transmission, potential for outbreaks, and significant morbidity and mortality rates underscore the critical importance of robust surveillance systems in promptly detecting and responding to these infections.

Surveillance of respiratory infections is a critical public health tool that facilitates early detection, informed decision-making, and effective responses to protect the population's health. By continually monitoring and analysing data, the Public Health Agency can strengthen their preparedness and ability to mitigate the impact of respiratory infections on communities in Northern Ireland. **Further information on respiratory infections, including COVID-19 can be found on NI Direct.**

Weekly reporting:

- COVID-19 Spring 2025 vaccination weekly report
- Covid-19 genomics bulletin
- Respiratory surveillance report

Annual reporting:

- Annual surveillance reports - seasonal influenza
- Legionellosis: Northern Ireland surveillance report 2014 to 2024

Information on the respiratory surveillance report

Information on the respiratory surveillance report

PHA has integrated influenza, respiratory syncytial virus (RSV) and COVID-19 reporting into a new report to provide a single overview of the epidemiology of these infections.

The new Respiratory Surveillance Report includes:

- Episodes of influenza, RSV and COVID-19 by epidemiological week, and by age and local government district (LGD).
- Overall testing and positivity for influenza, RSV and COVID-19 by epidemiological week.
- Episodes of influenza subtypes by epidemiological week.
- Sentinel and non-sentinel surveillance of influenza and RSV. Presentation of COVID-19 will be included at a later date.
- SARS-CoV-2 genomic variants.
- Consultation rates for influenza/influenza-like-illness ('flu/FLI') and acute respiratory infection (ARI) by epidemiological week, and by age and Health and Social Care Trust (HSCT).
- Influenza, RSV and COVID-19 care homes outbreaks.
- Influenza, RSV and COVID-19 community-acquired emergency hospital admissions and occupancy.
- Medical certificate of cause of death for respiratory-associated deaths and COVID-19 related deaths.

Click here for respiratory surveillance report

Information on the COVID-19 Genomics Bulletin

Information on the COVID-19 Genomics Bulletin:

As part of the COVID-19 pandemic response, the Public Health Agency Health Protection Surveillance team established a new surveillance system to monitor SARS-CoV-2 genomic variants. The Surveillance team used reflex assay (genotyping) to screen for variants of concern, and used whole genome sequencing results to monitor the prevalence of genomic lineages, which provided a more detailed view of the genome. The team also used transmission chain analysis to provide predictions on potential transmission events, in order to identify the source of infection and help reduce the chance of more transmission.

During the COVID-19 pandemic, variants in Northern Ireland were identified using genomic surveillance. This information was used to advise public health action in

controlling the spread of COVID-19. Screening for variants continues to be important for making informed public health decisions, particularly if we identify a variant shown to cause more severe illness, or if vaccines might not offer as much protection against a new variant.

Further information about SARS-CoV-2 variants can be found in UKHSA's reports here:

- Investigation of SARS-CoV-2 variants: technical briefings - GOV.UK (www.gov.uk)
- SARS-CoV-2: genome sequence prevalence and growth rate - GOV.UK (www.gov.uk)

Click here for Covid-19 genomics bulletin

Information on Legionnaires' disease

Legionnaires' disease is a severe and potentially fatal form of pneumonia caused by the bacterium *Legionella pneumophila*. The bacteria thrive in warm water environments such as hot tubs, cooling towers, and large plumbing systems. When people inhale contaminated water droplets or vapour, they can become infected with Legionella.

Symptoms of Legionnaires' disease often mimic those of pneumonia and can include high fever, chills, cough, muscle aches, and shortness of breath. It primarily affects individuals with weakened immune systems, the elderly, and those with underlying health conditions. Prompt diagnosis and treatment with antibiotics are crucial to prevent complications and serious outcomes.

Legionnaires' disease can sometimes occur in outbreaks, often linked to shared water systems in buildings or public spaces. Preventive measures include maintaining proper water hygiene in cooling systems, ensuring clean and well-maintained water sources, and following public health guidelines to minimise the risk of infection.

Public health surveillance and monitoring play an essential role in minimising the impact of this potentially dangerous bacterial infection.

Further information on Legionnaires' disease can be found on NHS website

Legionellosis: Northern Ireland surveillance report 2014 to 2024

Information on Respiratory Syncytial Virus (RSV)

Respiratory Syncytial Virus (RSV), is a prevalent and contagious virus that affects the respiratory system, particularly in young children and older adults. RSV infections often lead to mild cold-like symptoms, but in some cases, especially in infants and individuals with compromised immune systems, it can cause severe respiratory issues.

RSV is a leading cause of bronchiolitis (inflammation of the small airways in the lungs) and pneumonia in children under the age of one. Symptoms include coughing, wheezing, runny nose, fever, and difficulty breathing. The virus spreads through respiratory droplets, making it easily transmissible, especially in crowded settings.

While most RSV infections result in mild illnesses, severe cases can lead to hospitalisation, especially in vulnerable populations.

Public health measures such as hand hygiene, avoiding close contact with sick individuals, and maintaining a clean environment are essential to reduce the spread of RSV. As a common cause of respiratory illness, RSV continues to be an important area of public health focus, aiming to improve prevention, diagnosis, and treatment strategies for individuals of all ages.

Further information on Bronchiolitis can be found on NI Direct

Publications

Your guide to the RSV vaccine for older adults

How to protect your baby from RSV

Respiratory syncytial virus (RSV) immunisation programme for older adults: factsheet for healthcare practitioners

Respiratory syncytial virus (RSV) maternal immunisation programme for infant protection: factsheet for healthcare practitioners

Information on Seasonal influenza (flu)

Seasonal influenza, commonly known as the flu, is a contagious viral infection that re-emerges each year during the colder months. Caused by influenza viruses, the flu spreads through respiratory droplets when infected individuals cough, sneeze, or talk. Symptoms may include fever, cough, sore throat, body aches, and fatigue.

While most cases of seasonal influenza are mild and resolve on their own, the flu can lead to severe complications, especially in vulnerable populations such as young children, elderly individuals, pregnant women, and those with underlying health conditions. Each year, the flu causes millions of illnesses, hospitalisations, and, unfortunately, even deaths worldwide.

Vaccination remains the most effective method to prevent the flu and its potentially severe consequences. The Public Health Agency recommend annual flu vaccination, which helps protect individuals and contributes to community immunity, reducing the overall burden of the disease.

Apart from vaccination, practicing good hygiene, such as handwashing and avoiding close contact with sick individuals, can help reduce the risk of contracting and spreading the flu. As the flu virus can change from year to year, ongoing surveillance plays a vital role in updating vaccines and informing public health strategies.

During the flu season, it is essential to stay vigilant, recognise symptoms, and seek medical advice when necessary. By taking proactive measures, we can collectively combat seasonal influenza and protect our communities' health and well-being.

Further information on flu can be found on **NI Direct.**

Click here for annual surveillance reports - seasonal influenza

Information on Tuberculosis (TB)

Tuberculosis (TB), is a highly contagious and potentially life-threatening infectious disease caused by the bacterium Mycobacterium tuberculosis. It primarily affects the lungs but can also target other parts of the body such as the kidneys, spine, and brain. TB spreads through the air when an infected person coughs, sneezes, or talks, making it a significant global health concern.

Symptoms of TB include persistent cough, chest pain, fatigue, weight loss, and night sweats. Left untreated, TB can lead to severe health complications and even death. Diagnosis typically involves a combination of medical history assessment, physical examination, and various tests such as chest X-rays, sputum tests, and blood tests.

There are marked inequalities in the geographical and socioeconomic distribution of cases. TB is concentrated in large urban areas and the majority of cases occur amongst those born abroad. In addition, there is a strong association between TB and social deprivation (e.g. alcohol and drug misuse, homelessness or imprisonment) and the major health and social impacts for those affected contributes to further increasing health inequalities in already deprived populations. Although the majority of TB cases are curable, drug-resistant strains of TB have emerged, posing additional challenges to effective treatment. Global efforts to combat TB focus on raising awareness, and ensuring access to accurate diagnosis and appropriate treatment for all individuals, especially in vulnerable and underserved communities.

Further information on TB can be found on NI Direct

Enhanced TB surveillance

All forms of active TB are statutorily notifiable so that timely public health action can be taken to prevent the spread, monitor outbreaks, assess the risk and manage incidents of exposure, and recognise trends in the incidence of TB in the population so as to contribute to and improve the control of TB. Statutory notification of TB

cases is made through the Health Protection Duty Room. Enhanced data collection is input to the National Tuberculosis Surveillance system (NTBS) which allows for epidemiology in real time.

With TB having been identified as a public health priority, detailed surveillance on case notification, risk factors, co-morbidities and laboratory results is vital to provide meaningful information on the epidemiology of the disease and to be able to implement evidence-based TB control strategies.

NTBS exists to provide detailed information on each person with TB and the epidemiology of their disease in England, Wales and Northern Ireland.

The information provided through notification and enhanced through linkage to other sources of data is used for epidemiological surveillance to control TB. This aligns with Public Health Agency commitment to reduce the suffering and harm caused by the disease, to reduce inequalities and to meet the World health Organization (WHO) End TB Strategy milestone of reducing TB incidence by 50% by 2025 and contribute eventually to the elimination of TB as a public health problem.

Publications

Epidemiology of Tuberculosis in Northern Ireland

The official statistics by UKHSA **Tuberculosis (TB) notifications reported to enhanced TB surveillance systems: UK, 2000 to 2023 - GOV.UK (www.gov.uk)** incorporates tuberculosis (TB) data for Northern Ireland (2000-2023). Date of publication: 27 September 2024.

Northern Ireland Annual Surveillance Reports

N Ireland TB Surveillance Report 2023 (data up to end of 2022)

N Ireland TB Surveillance Report 2018

N Ireland TB Surveillance Report 2017

N Ireland TB Surveillance Report 2016

The archive

The archive of epidemiology of tuberculosis in Northern Ireland: annual surveillance reports dating **1992-2015 can be found here.**

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