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Module Code: LCHS4008_BIRM

Module: Introduction to Public Health

Component 2 Assignment

Title: Whooping Cough

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Introduction

What is whooping cough?

Whooping cough, or pertussis, is a highly contagious bacterial infection caused by *Bordetella pertussis*, which attacks the respiratory system and produces toxins that inflame and damage the airways. It starts with mild cold-like symptoms but soon progresses into violent, uncontrollable coughing fits that can last for months, earning it the nickname 100-day cough. (Azhar, 2025)

- Early symptoms: A runny nose and sore throat are typical of a common cold.
- Later symptoms: Severe coughing fits, which are usually worst at night, may appear after a week or so.
- It can be challenging to identify the characteristic "whoop" sound that young babies make as they gulp for breath after coughing, but not all babies do. (Azhar, 2025)

Worldwide, an estimated 24.1 million cases and 160,700 infant deaths from whooping cough occur annually, though resurgences have been noted in some regions like China and the US in recent years. The latest data for England shows cases of whooping cough peaked in May but continue at high levels, with 2,427 cases reported in June. This follows 555 cases in January 2024, increasing to an updated figure (1) of 3,052 in May – bringing the total number of laboratory confirmed cases from January to June 2024 to 10,493. (UK, 2024)

Pertussis outbreaks place significant strain on the community through increased illness among infants, school aged children, and adults, often leading to disrupted education and work absences. (UKHSA, 2024). The NHS faces additional pressure due to rising hospital admissions, especially among unvaccinated infants who are at highest risk of severe complications and death (NHS, 2024).

Increased whooping cough cases put more strain on hospital paediatric units, diagnostic labs, and primary care services for the NHS. Severe instances may necessitate expensive and resource-consuming intensive care assistance, such as oxygen therapy and mechanical ventilation. (NHS, 2024). In addition, public health teams must carry out contact tracing, vaccination campaigns, and awareness drives, diverting resources from other healthcare priorities. Overall, whooping cough outbreaks represent a preventable

burden on the healthcare system, highlighting the importance of maintaining high vaccination coverage to protect vulnerable populations (DHSC, 2024).

In the UK, whooping cough is prevented by a regular immunisation program for children and expectant mothers as well as public health precautions like isolating infected people. The main tactic is the pertussis vaccination, which is administered to newborns, preschoolers, and expectant mothers to safeguard their unborn children. In order to stop the infection from spreading, infected individuals are also urged to take antibiotics if given early and to isolate themselves for three weeks if they are close to someone who is susceptible.

Vaccination

- **Children:** The whooping cough vaccine is part of the routine childhood immunisation schedule, given to babies at 8, 12, and 16 weeks, followed by a preschool booster at around 3 years and 4 months of age.
- **Pregnant women:** A whooping cough vaccine is recommended for pregnant women between 16 and 32 weeks gestation to provide protection to their baby until they are old enough to be vaccinated themselves.

Public health measures

- **Antibiotics:** Early antibiotic treatment can reduce the period of contagiousness and may make the illness less severe.
- **Isolation:** Individuals diagnosed with whooping cough may be advised to stay home to avoid spreading the infection to those most at risk, especially if they are healthcare workers in close contact with pregnant women or babies.
- **Contact management:** Public health authorities may also recommend antibiotics for close contacts of an infected person to prevent them from becoming sick.

Other prevention methods

- Good hygiene practices like hand washing and covering the mouth when coughing or sneezing can help to reduce the spread of infection. (GOV.UK, n.d.)

Whooping cough can affect people of any age, including:

Babies and young children – young babies under 6 months of age are at a particularly increased risk of complications of whooping cough.

Older children and adults – it tends to be less serious in these cases, but can still be unpleasant and frustrating.

People who've had whooping cough before – you're not immune to whooping cough if you've had it before, although it tends to be less severe the second time around

people vaccinated against whooping cough as a child – protection from the whooping cough vaccine tends to wear off after a few years.

You can get whooping cough if you come into close contact with someone with the infection.

A person with whooping cough is infectious from about 6 days after they were infected – when they just have cold-like symptoms – until three weeks after the coughing bouts start.

Antibiotic treatment can reduce the length of time someone is infectious. (www.nhsinform.scot, 2024)

Factors Influencing the Affected Individuals

Health and Physical Well-being:

Age, vaccination status, the severity and duration of the illness, and the related social, psychological, and economic effects are the main factors affecting the health and well-being of whooping cough (pertussis) patients in the UK and those around them.

Age and Vulnerability: Because they are too young to receive all recommended vaccinations, infants under three to six months of age are most at risk of serious problems and death. Babies may experience pneumonia, apnoea, seizures, and, in rare cases, brain damage from oxygen deprivation. On the other hand, illnesses in older children and adults are usually lesser but nonetheless quite uncomfortable. (NHS, 2023)

Severity and Length of Symptoms: The "100-day cough" is a typical symptom that is characterized by intense, protracted coughing bouts that can linger for weeks or even months. Physical strain from these fights may result in issues like:

Sore broken ribs.

Urinary incontinence, especially in females.

Post-tussive emesis, or vomiting after coughing, can cause dehydration or weight loss.

Coughing at night disrupts sleep, which causes great exhaustion.

A secondary bacterial infection is pneumonia.

Social and Psychological Well-Being:

Anxiety & Distress: It is upsetting how persistent the cough is. It has a greater impact on quality of life in adults than influenza.

Isolation and Disruption: In order to stop the spread of the illness, affected people must stay at home from work or school for up to three weeks without antibiotics. This may cause social isolation and interfere with day-to-day activities.

Factors Influencing People Around Them (Contacts)

Health and Physical Well-being:

There are significant psychosocial effects on families and carers. In addition to causing parental worry, missed work, financial burden, and social isolation, prolonged coughing fits can interfere with infants' sleep, feeding, and bonding. There are long-term repercussions on mental health from bereavement following newborn loss. Additionally, stigma and false information can be amplified by community anxiety during epidemics, further undermining vaccination belief. Thus, prompt medical, social, and psychological care as well as clear, compassionate communication are crucial elements of the approach. (patient.info, 2023)

The most significant factor influencing both population and individual protection is vaccination. Maternal pertussis vaccination during pregnancy and the UK standard schedule (6-in-1 at 8, 12, and 16 weeks, plus a preschool booster) significantly lower newborn illness. Maternal vaccination is thought to be about 90% effective in preventing laboratory-confirmed pertussis in very young newborns and lessening the severity of infection if it does occur. Therefore, to protect infants and lower community transmission, high and consistent vaccination uptake during pregnancy and childhood is crucial. (patient.info, 2023)

Conclusion

Pertussis is still a major public health concern in the UK and around the world. Even though there are effective immunisations, recent case increases show how vulnerable communities remain, especially among infants who have not received vaccinations. Not only does the disease cause serious sickness and even death in young children, but it also causes extensive social disturbance, absenteeism from school, and loss of employment in adults. In the NHS, increasing incidence puts strain on public health teams, hospital services, and primary care, which raises the cost of hospitalisation, treatment, and preventative initiatives. In order to protect the most vulnerable neonates, the latest outbreaks highlight the significance of preserving high immunisation rates, particularly for mothers. Reducing transmission requires consistent public health education, thorough surveillance, and prompt booster programs help stop breakouts in the future. The best way to protect community health is still to keep funding immunisations and raising awareness.

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