



Module: Introduction to Public Health

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Introduction

Pertussis (also known as Whooping cough) is a very contagious respiratory disease that is caused by a bacterium by the name *Bordetella pertussis*. It is mainly found in babies and young children, causing a severe bout of coughing, a distinctive sound known as whoop, vomiting coupled with coughing, and, in some instances, apnea and cyanosis (Hartzell and Blaylock, 2014). Pertussis continues to be a significant issue in health services, with about 151,000 cases and 89,000 deaths every year, as documented by the World Health Organisation (WHO, 2023). The United Kingdom also reports cyclical outbreaks despite the effective vaccination programmes, and 4,791 cases were confirmed in 2023 (UKHSA, 2024). Its revival, particularly in young infants and adolescents who are not vaccinated, illustrates the persistent lack of success in immunisation coverage and control of the disease. This report discusses the societal outcomes, management, and health implications of whooping cough in the UK setting.

Main Body

1. Consequences of Whooping Cough in the Community and for the NHS

Having been a significant challenge to social healthcare, despite the extensive immunisation campaign, whooping cough or pertussis remains a significant challenge. Infants who are below the age of six months are especially susceptible to the disease because their immune system is still immature and has not yet completed the vaccination schedule. The World Health Organisation (2023) estimates that the number of cases and nearly 90,000 deaths occur every year on the planet, with a majority of those affected being young children. In the United Kingdom, UK Health Security Agency (UKHSA, 2024) recorded 4,791 confirmed cases in 2023, and an extreme high of over 14000 in early 2024 (the highest number of outbreaks in 10 years). These values can be used to explain why pertussis is a chronic and recurring danger that puts health services and communities under strain.

At the community level, pertussis leads to the long-term disease called the hundred-day cough, which has fatigue, vomiting, and inaccurate sleep. Parents who are absent because of their sick children experience emotional stress and financial loss on the part of the family. Infected pupils are not allowed to be in the school and nursery, which interferes with education. During outbreaks, fear and misinformation also occurs, leading to a lack of confidence in vaccination programmes and giving birth parents the feeling of anxiety (Smout et al., 2024).

In the case of the NHS, illness is a significant burden. Outbreaks add to the number of infants requiring hospitalisation due to respiratory issues, necessitate expensive diagnostic measures, and put a burden on the capacity of pediatric intensive-care units. The number of primary-care consultations and antibiotic prescriptions increased dramatically, and the public-health teams spend personnel and resources on contact tracing, prophylaxis and surveillance. Such activities redirect resources to other critical services, which proves that avoidable infections heighten the pressure on the system when people do not get vaccinations (NHS, 2024).

2. Control of Whooping Cough

The primary means of control is vaccination. The UK immunisation action plan provides pertussis-containing vaccination at 8, 12, and 16 weeks and boosters during preschool and adolescence. Maternal vaccination during pregnancy has safeguarded the infant by transferring antibodies in the unborn baby, preventing more than 90 per cent of hospitalisations in infants since 2012 (PHE, 2020). Adoption, though, has been below 60 per cent in certain areas. Current vaccine is the acellular vaccine that is safe but generates temporary immunity, which permits reinfection of older children and adults, which requires continuous booster vaccination efforts.

Pertussis is a reportable disease in the UK. Physicians are required to notify the public-health agencies of suspected cases, which will be confirmed in the laboratory and monitored outbreaks. Early treatment of the disease using macrolide antibiotics can restrict severity as well as spread. Contact prophylaxis is provided to susceptible individuals, particularly infants. Exclusion of at least five days following antibiotics in schools or nurseries can stop further contagion.

Health promotion assists in control through educating the masses on the benefits of vaccination. The doctors and health workers (midwives, GPs and health visitors) have very crucial roles to play in motivating pregnant women and parents to do immunisations and bust the myths. However, there are still challenges like vaccine hesitancy, logistical challenges and declining immunity. The recent surges have been caused by the COVID-19 pandemic, that left immunity gaps due to disrupted routine appointments. To solve these problems, access needs to be flexible, and it needs to have reminder systems and new communication campaigns. Investment in better vaccines to provide a longer duration of protection and prevent transmissions should continue to achieve long-term success.

3. Factors Influencing Health and Well-being

Biological and clinical influences

Whooping cough is a disease that depends on age, immunity level, and comorbidities to determine the level of severity. Infants who are too young to be vaccinated are most susceptible to complications like pneumonia, encephalopathy or apnea, and in some cases, they may be subjected to intensive care. The symptoms were mild in adults and older children though such patients are infectious and may spread the infection to infants. It is predisposed based on immunosuppression or chronic respiratory disease and aggravated by the consequences. The late diagnosis is a widespread issue, and in the initial phase, pertussis can be compared to the common cold that enables even a person to spread the illness further without being able to learn that he is sick (Kardos et al., 2024).

Psychological and emotional effects

Psychologically, parents of infants in the hospital fearfully, guiltily and distraughtly, and, in particular, when the vaccination was not performed. Prolonged sickness also affects family life and may lead to exhaustion or depression among caregivers. Healthcare personnel should employ caring language and encouragement to safeguard mental health.

Social and economic determinants

Social disparity plays a huge role in the distribution of diseases and well-being. Lower-income or marginalised ethnic groups may have obstacles in the form of the cost of transportation, inflexible working hours or even access to primary care appointments. These aspects may postpone vaccination or treatment, putting at risk the chances of serious illness. Crowded houses can support quick transmission between the members of the same household and lack of sick pay may compel parents to resume employment before being well, which further propagates the illness (Kardos et al., 2024).

Vaccine behavior is also determined by the level of education and health literacy. People who lack the knowledge of immunisation data might fail to attend them or could be misled by the information on the internet. Culturally sensitive communication and targeted community education were also shown to increase vaccine confidence.

Public health inequalities and policy influences

The NHS England (2019) focuses on prevention and minimising health inequalities, yet the disparities are still visible. Cities that are more deprived, like in some areas of London and Midlands still experience higher rates of incidence than the richer areas. There is a need to strengthen the partnership between primary care and local authorities and the public health teams to provide equitable delivery of vaccines. Reminder systems, midwife-led vaccine clinics, and data-driven outreach should be included in the list of policies to decrease inequalities.

Community and relational impacts

Pertussis spreads beyond the infected person to the families and networks. Fear of contagion causes the parent to seclude the infants from relatives, thus as a social withdrawal effect. Brothers and sisters can skip school, and the caregivers can lose their money on unpaid leave. On a larger scale, community outbreaks may result in childcare facilities being closed, thus disrupting the economy and society. This anxiety may lead to the breakdown of trust between the population and health authorities, which is why the openness of risk communication is needed (NHS England, 2019).

Strategies to enhance wellbeing

Health and social care professionals should embrace a holistic approach to promote wellbeing. Coupled with clinical management, information provision, emotional support, and referring the affected families to community support groups should be offered by the practitioners. Health visitors and midwives have the crucial role of empowering parents by educating them on the importance of recognising early symptoms, not letting their immunisation records run out, and following infection control guidelines (Leontari et al., 2025).

On the community level, equity in immunisation campaigns, access to health services, and countering misinformation with confidence of the local standing voice can enhance community resilience. Families can also be safeguarded by policies that are in line with the Healthy Child Programme, which include early intervention and support of parents. Finally, vaccination of whooping cough not only protects lives, but also mental and social health (Shribman and Billingham, 2009).

Lastly, whooping cough has remained a menace to communities and health services owing to the periodical outbreaks and hospitalisation. The ongoing vaccination, immunisation of the mother, early diagnosis and education to the patient remains a very important aspect of control. The illness

affects physical, emotional, social and economic status. The harm on people and the strength of the community can be avoided by the proactive and holistic preventive efforts of the health professionals and the entire community, supported by a health-wide policy.

Conclusion

The whooping cough remains an important social health problem, posing a threat to individuals, families, and healthcare structures in the United Kingdom. Although the death rates and the cases of severe illnesses are reduced with the help of effective vaccination programmes and maternal immunisation, periodic outbreaks testify to the still-existing challenges. The failure of the immunity, low vaccination rates, misinformation, social inequality and disrupted services are some of the factors that have contributed to the prolongation of the illness and make it tough to treat the sickness. The causes are not limited to physical disease but emotional distress, economic loss and disruption of the community, which puts an extra burden on the NHS. In order to reduce future outbreaks, it is necessary to invest long-term in vaccination promotion, strong surveillance, and fair healthcare access. Medical workers should still teach, motivate, and empower families to participate in preventive healthcare.

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