Ashford and St. Peter's Hospitals
NHS Foundation Trust

Pertussis Infection

Author: Dr Shola Doherty, Consultant Paediatrician

Contact details: adesholadoherty@nhs.net

Guideline History		
Date	**Comments**	**Approved By**
26/6/2024	New Guideline	Paediatric Guidelines Committee

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Title of Guideline

Introduction

There has been a significant rise in cases of Pertussis infection in the UK in 2024, resulting in the deaths of several infants. This current increase is coming at a time when there has been a steady decline in uptake of the vaccine in pregnant women and in children. This guideline has been developed to support all clinicians in the recognition and management of Pertussis infection in the paediatric population.

Paediatric Department

Pertussis Infection

Dr Adeshola Doherty, Consultant Paediatrician, May 2024

Ashford and St. Peter's Hospitals NHS Foundation Trust

Background

Pertussis = 'whooping cough' = 'the 100-day cough'
Causative agent is highly contagious bacterium *Bordatella pertussis*

Broad spectrum of disease severity including severe pneumonia and encephalopathy
Significant morbidity and mortality in infancy

Vaccine available in routine UK immunisation schedule and for pregnant women
Rise in cases & deaths in 2024 thought to be associated with reduced vaccine uptake

Clinical Presentation

Classic pertussis

1. **Catarrhal** stage (1week) = cough and coryza
2. **Paroxysmal** stage (2-8weeks) = coughing spasms, inspiratory 'whoop', post-tussive vomiting
3. **Convalescent** stage (1-4weeks) = decrease in coughing paroxysms

Infants under 3months are at highest risk of severe disease
Infants may present with respiratory illness, apnoeas and seizures
Suspect if close contact is a carrier of pertussis. Other family members frequently have a cough

Investigations

FBC with differential - leukocytosis with **lymphocytosis** (WCC >20) – beware hyperviscosity

Pernasal swab PCR

- Investigation of choice
- Blue swab with flexible wire in charcoal medium
- Currently sent to Frimley Park microbiology

Serology

- May be suitable in older children (>2yrs <17yrs) with cough for >2weeks
- Not suitable if vaccinated in past 12months
- Gold top serum bottle for *Bordatella pertussis* toxin IgG
- Email virology.asph@nhs.net for sample to be sent to Colindale

Nasopharyngeal aspirate for other respiratory pathogens – beware co-infection with viruses

CXR - pneumonia
ECG – ischaemia, pulmonary hypertension, right heart strain (caused by microvascular thrombi)

Management

Antibiotics

- Not thought to be beneficial after 3 weeks of symptoms
- **Clarithromycin** for 7 days (co-trimoxazole if macrolide contraindication)

Isolate – exclude from school/nursery until completed 48hrs of appropriate therapy
Admit if <3months for observations and repeat FBC
Tertiary referral if respiratory failure/cardiovascular or neurological instability/rising WCC (>30)

Notify local Health Protection Team (Surrey and Sussex HPT **0344 225 3861**) and OH if staff involved

Public Health

- Incubation period 5-21days
- Infectious just prior to and for 21days after onset of cough, if untreated
- Vaccination – routine childhood schedule, offered to pregnant women >16weeks, close contacts: who are <10yrs and partially immunised or >10yrs without pertussis booster in past 5yrs
- Chemoprophylaxis – consider for close contacts, vulnerable, health/social/childcare staff

References

1. Public Health England Guidelines for the Public Health Management of Pertussis, 2018. 2. Guidance on the management of cases of pertussis in England during the re-emergence of pertussis in 2024, UKHSA, 2024. 3. Testing for pertussis in primary care, UKHSA. 4. Whooping cough - poster and joint statement from RCPCH, RCOG, RCM and RCGP, 2024. 5. Medical Microbiology, Baron S, 4th edition, Galveston, 1996. 6. Ashford & St Peter's Paediatric Antimicrobial Guide. 7. Evelina London Paediatric Critical Care Pertussis Infection, 2022. 8. Royal Children's Hospital Melbourne Whooping Cough Clinical Practice Guideline

2. Supporting References

1. Public Health England Guidelines for the Public Health Management of Pertussis, 2018.
2. Guidance on the management of cases of pertussis in England during the re-emergence of pertussis in 2024, UKHSA, 2024
3. Testing for pertussis in primary care, UKHSA.
4. Whooping cough - poster and joint statement from RCPCH, RCOG, RCM and RCGP, 2024
5. Medical Microbiology, Baron S, 4th edition, Galveston, 1996
6. Ashford & St Peter's Paediatric Antimicrobial Guide.
7. Evelina London Paediatric Critical Care Pertussis Infection, 2022.
8. Royal Children's Hospital Melbourne Whooping Cough Clinical Practice Guideline

3. Supporting relevant trust guidelines

Paediatric Microguide

2. Guideline Governance

a. Scope

This guideline is relevant to all staff caring for all children from 0-18 years old across the emergency department, inpatient ward and outpatient department.

b. Purpose

i. This guidelines aims to facilitate a common approach to the management of children. At times deviation from the guideline may be necessary, this should be documented and is the responsibility of the attending consultant.

ii. This guideline is subject to regular review to ensure ongoing evidence based practice.

c. Duties and Responsibilities

All healthcare professionals responsible for the care of all children 0-18years should be aware of practice according to this guideline.

d. Approval and Ratification

This guideline will be approved and ratified by the Paediatric Guidelines Group.

e. Dissemination and Implementation

i. This guideline will be uploaded to the trust intranet 'Paediatric Guidelines' page and thus available for common use.
ii. This guideline will be shared as part of ongoing education within the Paediatric Department for both medical and nursing staff.
iii. All members of staff are invited to attend and give comments on the guideline as part of the ratification process.

f. Review and Revision Arrangements

a. This policy will be reviewed on a 3 yearly basis by the appropriate persons.
b. If new information comes to light prior to the review date, an earlier review will be prompted.
c. Amendments to the document shall be clearly marked on the document control sheet and the updated version uploaded to the intranet. Minor amendments will be ratified through the Paediatric Guidelines Group. A minor amendment would consist of no major change in process, and includes but is not limited to, amendments to documents within the appendices.

g. Equality Impact Assessment

Background • Who was involved in the Equality Impact Assessment
Author and the supervising consultants.
Methodology • A brief account of how the likely effects of the policy was assessed (to include race and ethnic origin, disability, gender, culture, religion or belief, sexual orientation, age) • The data sources and any other information used • The consultation that was carried out (who, why and how?)
All groups of staff and patients were taken into consideration and there is no bias towards or against any particular group.
Key Findings • Describe the results of the assessment • Identify if there is adverse or a potentially adverse impacts for any equalities groups
There is no evidence of discrimination.
Conclusion • Provide a summary of the overall conclusions
There is no evidence of discrimination.
Recommendations • State recommended changes to the proposed policy as a result of the impact assessment • Where it has not been possible to amend the policy, provide the detail of any actions that have been identified • Describe the plans for reviewing the assessment
This guideline is appropriate for use.

h. Document Checklist

To be completed (electronically) and attached to any document which guides practice when submitted to the appropriate committee for approval or ratification.

Title of the document:

Policy (document) Author:

Executive Director: N/A

		Yes/No/ Unsure/NA	Comments
1.	**Title**		
	Is the title clear and unambiguous?	**Y**	
	Is it clear whether the document is a guideline, policy, protocol or standard?	**Y**	
2.	**Scope/Purpose**		
	Is the target population clear and unambiguous?	**Y**	
	Is the purpose of the document clear?	**Y**	
	Are the intended outcomes described?	**Y**	
	Are the statements clear and unambiguous?	**Y**	
3.	**Development Process**		
	Is there evidence of engagement with stakeholders and users?	**Y**	
	Who was engaged in a review of the document (list committees/ individuals)?		**Dr Doherty and Paediatric consultants alongside virology consultants and PHE**
	Has the policy template been followed (i.e. is the format correct)?	**Y**	
4.	**Evidence Base**		
	Is the type of evidence to support the document identified explicitly?	**Y**	

		Yes/No/ Unsure/NA	Comments
	Are local/organisational supporting documents referenced?	**Y**	
5.	**Approval**		
	Does the document identify which committee/group will approve/ratify it?	**Y**	
	If appropriate, have the joint human resources/staff side committee (or equivalent) approved the document?	**N/A**	
6.	**Dissemination and Implementation**		
	Is there an outline/plan to identify how this will be done?	**Y**	
	Does the plan include the necessary training/support to ensure compliance?	**Y**	
7.	**Process for Monitoring Compliance**		
	Are there measurable standards or KPIs to support monitoring compliance of the document?	**Y**	
8.	**Review Date**		
	Is the review date identified and is this acceptable?	**Y**	
9.	**Overall Responsibility for the Document**		
	Is it clear who will be responsible for coordinating the dissemination, implementation and review of the documentation?	**Y**	
10.	**Equality Impact Assessment (EIA)**		
	Has a suitable EIA been completed?	Y	

Committee Approval (Paediatric Guidelines Group)			
If the committee is happy to approve this document, please complete the section below, date it and return it to the Policy (document) Owner			
Name of Chair	**Alexandra Jones**	**Date**	**26/6/2024**
Ratification by Management Executive (if appropriate)			
If the Management Executive is happy to ratify this document, please complete the date of ratification below and advise the Policy (document) Owner			
Date: n/a			