Guideline

CHQ Hospital In the Home Antibiotic Guidelines

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Author/custodian	Director – Infection Management and Prevention Services, Immunology and Rheumatology			**Review date**	26/03/2023
Supersedes	1.0				
Applicable to	All Children's Health Queensland (CHQ) clinical staff				
Authorisation	Executive Director Clinical Services				

Purpose

The recommendations of this guideline are for patients that are suitable for care by the Children's Health Queensland (CHQ) Hospital In The Home (HITH) service, who require antimicrobial therapy.

Scope

This guideline provides information for all Queensland Health clinicians (permanent, temporary and casual) and all organisations and individuals acting as its agents (including Visiting Medical Officers and other partners, contractors, consultants and volunteers).

Related documents

Procedures, Guidelines, Protocols

- CHQ-PROC-01036 Antimicrobial: Prescribing and Management
- CHQ Antimicrobial restrictions formulary
- CHQ At Home Outpatient Parenteral Antimicrobial Therapy Prescribing, Administration and monitoring guideline
- CHQ-WI-80002 Continuous IV infusion administration via ambIT® - pumps for HITH- A basic guide for transfer to Hospital in the Home (HITH)
- CHQ-GDL-01057 Antimicrobial treatment: Early intravenous to oral switch – Paediatric Guideline

Guideline

Introduction

Some children with infections presenting to hospital may be deemed to be unsuitable for oral antimicrobial therapy (for example, inability to tolerate oral therapy or more severe disease) but clinically well enough to be managed without being admitted for inpatient hospital care.

Children's Health Queensland Hospital In The Home (HITH) service facilitates care and delivery of antimicrobial therapy to these children.

This guideline has been developed to assist transitioning of children directly from the Emergency Department or inpatient wards onto HITH for antimicrobial therapy.

For the following indications and antibiotics ID antibiotic approval is not required for the first 3 days of intravenous therapy.

Clinical conditions for HITH antimicrobial therapy

The following clinical conditions can be treated via HITH service:

A. Community acquired pneumonia (not tolerating oral therapy)
B. Cellulitis
C. Lymphadenitis
D. Pre-septal/peri-orbital cellulitis
E. Urinary tract infections

Antimicrobial choice and duration for each of the above clinical conditions are summarised in the treatment recommendation table below (Table 1).

Children less than 3 months of age or children with allergies to the recommended antimicrobials are not eligible for direct admission to HITH from the Emergency Department.

First dose of intravenous antibiotics to be given in the Emergency department followed by a 1 hour observation period (for allergic reaction) before patient can be transferred home on HITH.

Patients with a positive blood culture should be recalled to hospital and IV antibiotic plan and follow up management discussed with the QCH ID Team on service.

ALERT

Consider oral antibiotics first as the above clinical conditions can usually be treated with oral therapy.

Decision to commence or continue intravenous antibiotics and referral to HITH requires a Senior Medical Officer review.

Table 1: Treatment recommendations for infants over 3 months of age, children and adolescents with normal renal function (see Footnotes)

Clinical condition for HITH	Recommended intravenous and oral antimicrobial therapy & duration (2 to 3 days)	MRSA risk factors[A]	Recommended oral switch option	Usual total duration of therapy (IV and oral)
Community acquired pneumonia (not tolerating oral therapy)[B]	Cefazolin IV (as continuous infusion via AmBIT pump)[C] OR Ceftriaxone IV (100 mg/kg once daily, maximum 2 g/day)	Not applicable[A].	Amoxicillin orally 25 mg/kg/dose (maximum 1 g/dose) three times a day.	5 to 7 days
Cellulitis/ Lymphadenitis[D]	Cefazolin IV (as continuous infusion via AmBIT pump)[C] OR Ceftriaxone IV 100 mg/kg once daily (maximum 2 g/day)	**Choose one IV option and one ORAL option:** Cefazolin IV (as continuous infusion via AmBIT pump)[C] OR Ceftriaxone IV 100mg/kg once daily (maximum 2 g/day) PLUS Oral Trimethoprim/ Sulfamethoxazole (see oral switch option for dosing) OR Oral Clindamycin[E] (see oral switch option for dosing)	**No MRSA suspected:** Cefalexin suspension orally 30 mg/kg/dose three times a day (maximum 1 g/dose), or *For children who can swallow capsules:* Flucloxacillin orally 25 mg/kg/dose four times a day (maximum 1 g/dose) **For suspected or proven MRSA:** Trimethoprim/sulfamethoxazole orally 5 mg/kg/dose (maximum 160 mg/dose trimethoprim component) three times daily. or *For children who can swallow capsules:* Clindamycin[E] orally 7.5 mg/kg/dose (maximum 450 mg/dose) four times a day. Oral antibiotic choice should be guided by culture results, if available.	5 to 7 days

Clinical condition for HITH	Recommended intravenous and oral antimicrobial therapy & duration (2 to 3 days)	MRSA risk factors[A]	Recommended oral switch option	Usual total duration of therapy (IV and oral)
Peri-orbital cellulitis	Cefazolin IV (as continuous infusion via AmBIT pump)[C] or Ceftriaxone IV 100 mg/kg once daily (maximum 2 g/day)	**Choose one IV option to use with the ORAL option:** Cefazolin IV (as continuous infusion via AmBIT pump)[C] **OR** Ceftriaxone IV 100 mg/kg once daily (maximum 2 g/day) **PLUS** Oral Trimethoprim/ Sulfamethoxazole (see oral switch option for dosing)	**If child is more than 2 years old and fully vaccinated against HiB*, with no MRSA risk factors or concerns for sinusitis:** Cefalexin 30 mg/kg/dose three times per day (maximum 1g/dose) **If child is <u>not</u> fully vaccinated against HiB or has clinical concerns for concurrent sinusitis:** Amoxicillin/clavulanic acid 22.5 mg/kg/dose (maximum 875 mg/dose amoxicillin component) twice daily ***most children if vaccinated as per National Immunisation Program (NIP) schedule would have received 4 doses of HiB containing vaccine by 18 months of age.** **If child has proven or suspected MRSA:** Trimethoprim/sulfamethoxazole orally 5 mg/kg/dose (maximum 160 mg/dose trimethoprim component) three times daily.	7 to 10 days
Urinary tract infection (UTI)/ Pyelonephritis	Amoxicillin orally 25 mg/kg/dose three times a day (maximum 1 g/dose) PLUS Gentamicin IV[F] • If more than 1 month and less than 10 year old: 7.5 mg/kg once daily (Maximum 320 mg/day) • If more than 10 year old: 6 mg/kg IV once daily (Maximum 560 mg/day)	Not applicable	Guided by urine culture result. Seek ID advice if required.	3 to 5 days for UTI 7 to 10 days for pyelonephritis

Footnotes:

A. Where MRSA is strongly suspected and significant infection present requiring IV antibiotic therapy, admission is required; follow CHQ-GDL-01202 CHQ Paediatric Antibiocard: Empirical Antibiotic Guidelines for antibiotic choices. MRSA specific intravenous antibiotics are either not HITH suitable or restricted and require ID approval.

B. Oral antibiotics are sufficient in most children with community acquired pneumonia unless unable to tolerate oral or severe/complicated disease

C. Cefazolin can be given as a 24-hour infusion with the AmBIT pump via a peripheral IV cannula (minimum 22 G). Patient suitability for continuous infusion will be at the clinician's discretion.

   i. The Cefazolin 24-hour dose can be prepared in an IV bag for administration.

      a. A loading dose of 50 mg/kg (maximum 2 g) should be given prior to commencing continuous infusion (150 mg/kg/day, maximum 6 g/day).

      b. For Cefazolin infusion preparation information, please refer to the CHQ-WI-80002 Continuous IV infusion administration via ambIT® - pumps for HITH- A basic guide for transfer to Hospital in the Home (HITH)

   ii. Further information available via the CHQ AMS website: CHQ At Home Outpatient Parenteral Antimicrobial Therapy Prescribing, Administration and monitoring guideline

D. A swab of any discharge or pus should be taken prior to commencing treatment. If no discharge or pus present, MRO swabs should be done to determine MRSA status. If known MRSA colonisation, therapy should be directed by culture results (if available).

E. If child can manage capsules, oral clindamycin is a suitable alternative given its excellent bioavailability. Continuing clindamycin for more than 24 hours requires ID approval.

F. In otherwise healthy children, therapeutic drug monitoring for gentamicin for UTI is not necessary for durations of less than 3 days. Patients who have renal impairment or require therapeutic drug monitoring due to concerns for potential nephrotoxicity are not suitable for HITH admission via the Emergency Department.

Antimicrobial treatment duration exceeding 3 days

Children who require longer than 3 days of IV antimicrobial therapy as recommended above require discussion with ID and antibiotic approval for continuing IV therapy

List of Abbreviations

Abbreviation	Definition
AMS	Antimicrobial Stewardship
CHQ	Children's Health Queensland
CHQatHome	Children's Health Queensland Hospital In The Home service
HITH	Hospital in the Home
IMPS	Infection Prevention and Management Service
ID	Infectious Diseases Team
IV	Intravenous
MRO	Multi-resistant organism screening
MRSA	Methicillin Resistant Staphylococcus Aureus
SMO	Senior Medical Officer
QCH	Queensland Children's Hospital
UTI	Urinary tract infection

Consultation

Key stakeholders who reviewed this version:

- Medical Lead AMS, IMPS (CHQ)
- Paediatric Infection Specialist, IMPS (CHQ)
- Pharmacist Advanced – Antimicrobial Stewardship, IMPS (CHQ)
- CHQatHome Senior Clinical Pharmacist, CHQ at home (CHQ)
- General Paediatrician, CHQ at home (CHQ)
- Nurse Unit Manager, CHQ at Home (CHQ)
- Medicines Advisory Committee – Endorsed 12/03/2021

References and suggested reading

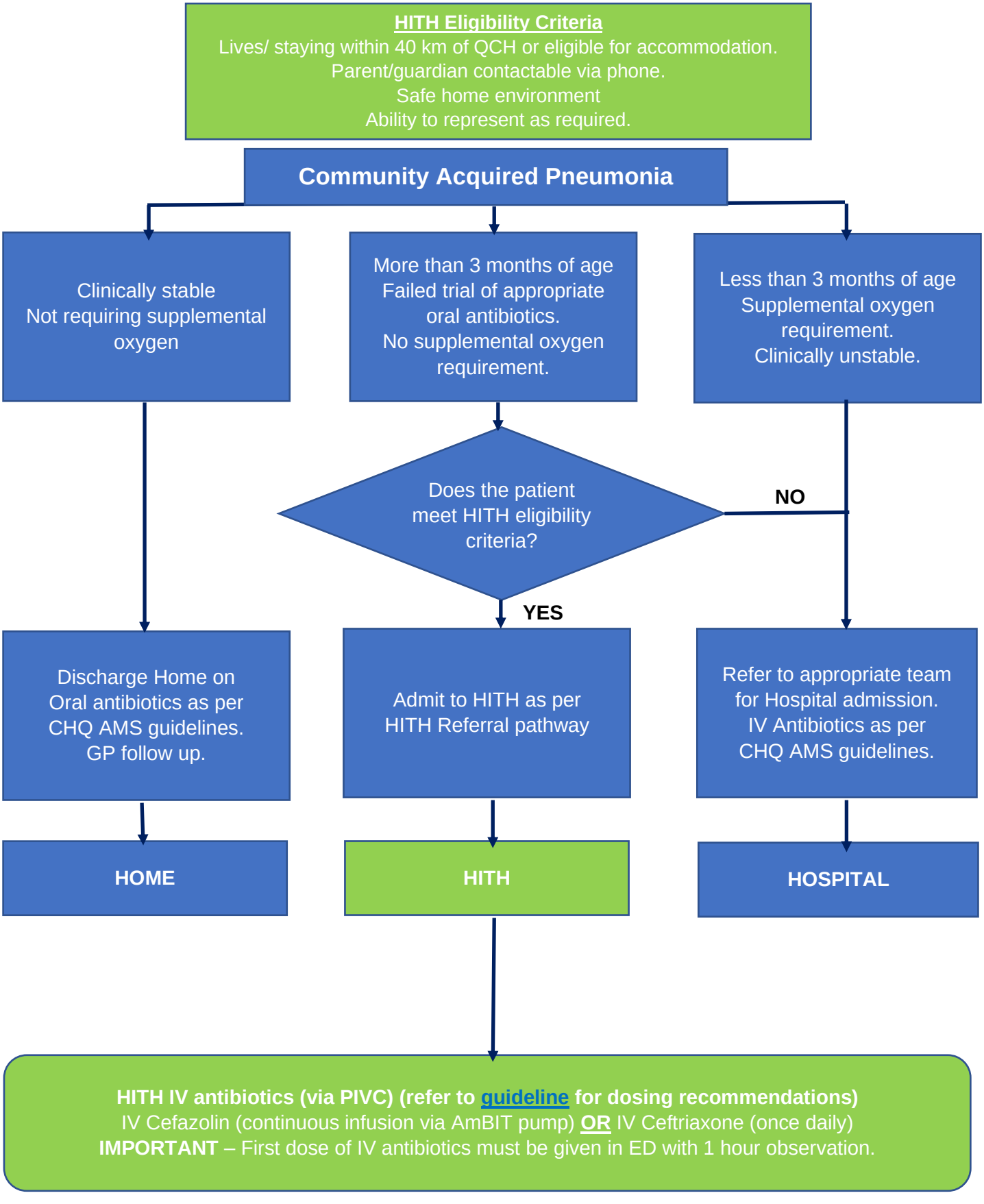
1. Therapeutic Guidelines: Antibiotic 2020 Therapeutic Guidelines Ltd. Melbourne
2. Taketomo CK eds. Pediatric Dosage Handbook International (26th edition) Lexi-comp 2019-2020.
3. BNF for Children 2019-2020. BMJ Group, London, UK.

Guideline revision and approval history

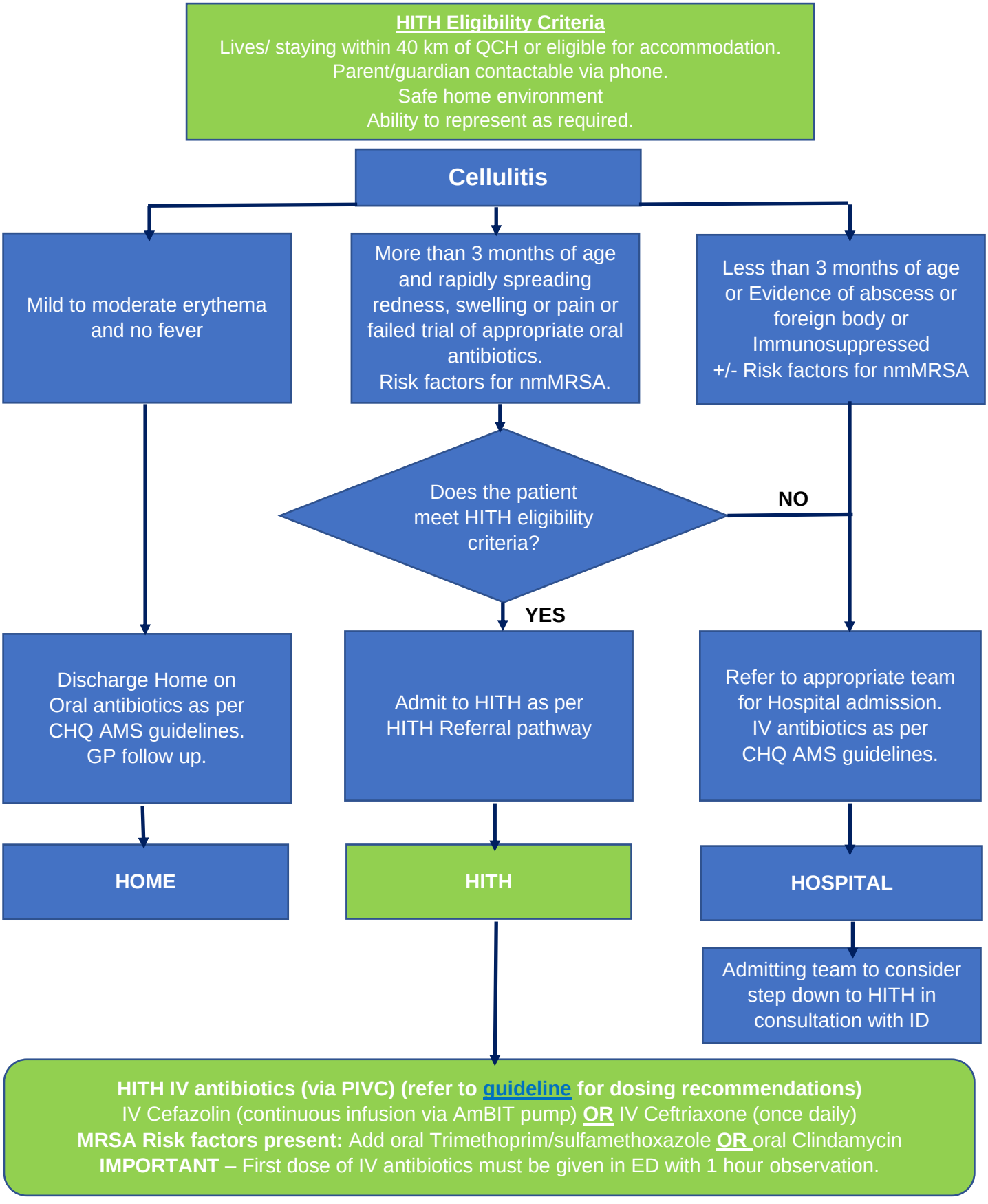
Version No.	Modified by	Amendments authorised by	Approved by
1.0 19/06/2019	Director – Infection Management and Prevention Services (IMPS), Immunology and Rheumatology	Medical Director, Division of Medicine	Executive Director Clinical Services (QCH)
2.0 12/01/2021	Infection Specialist (IMPS) Pharmacist Advanced, Antimicrobial stewardship	Medical Director, Division of Medicine	Executive Director Clinical Services

Keywords	Hospital in The Home, Antibiotics, Antimicrobial Stewardship, CHQatHome, 63012
Accreditation references	NSQHS Standards (1-8): 1 Clinical Governance, 2 Partnering with consumers, 3 Preventing and Controlling Healthcare Associated Infections, 4 Medication safety ISO 9001:2015 Quality Management Systems: (4-10)

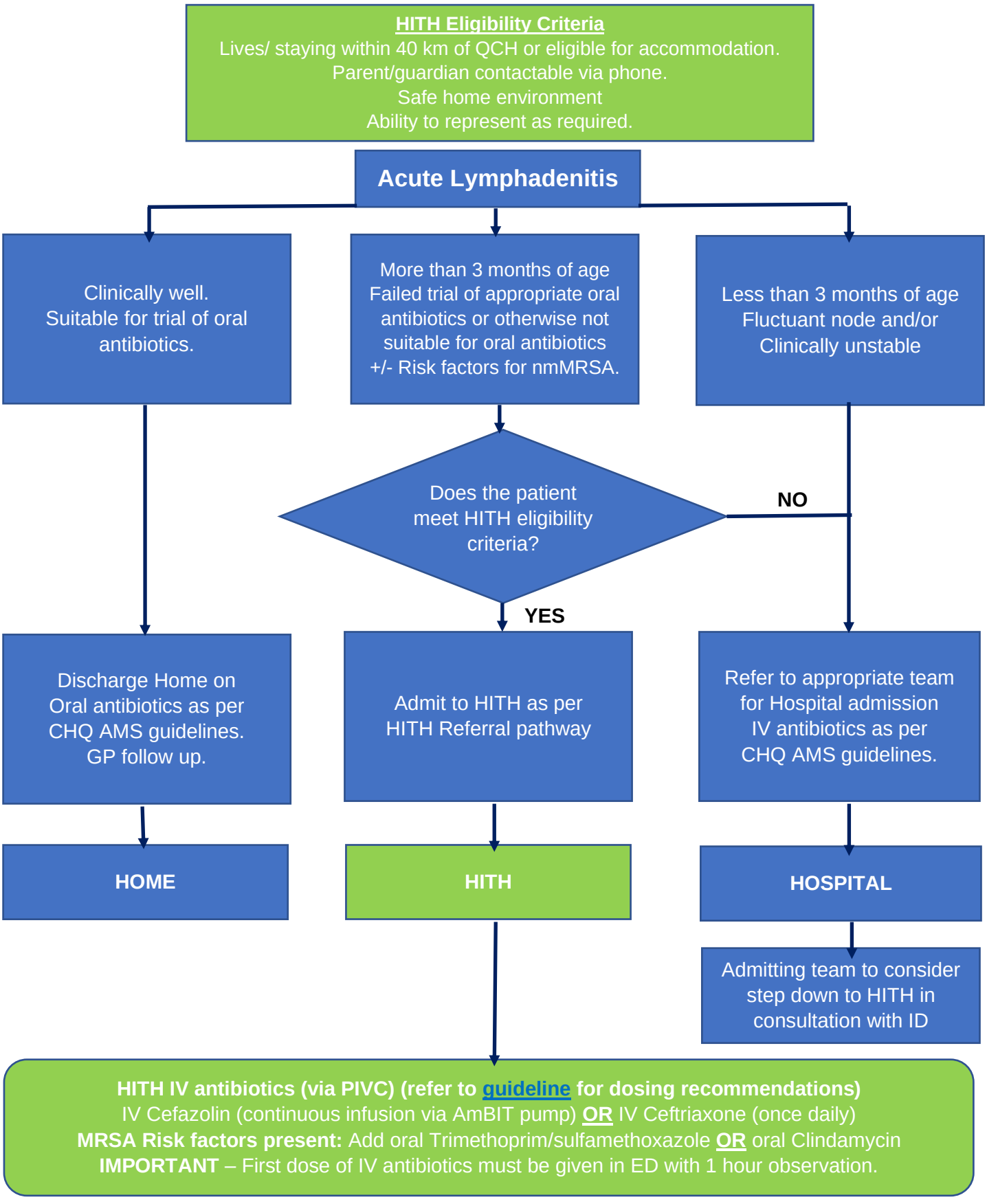
Appendix A – Community acquired pneumonia HITH pathway



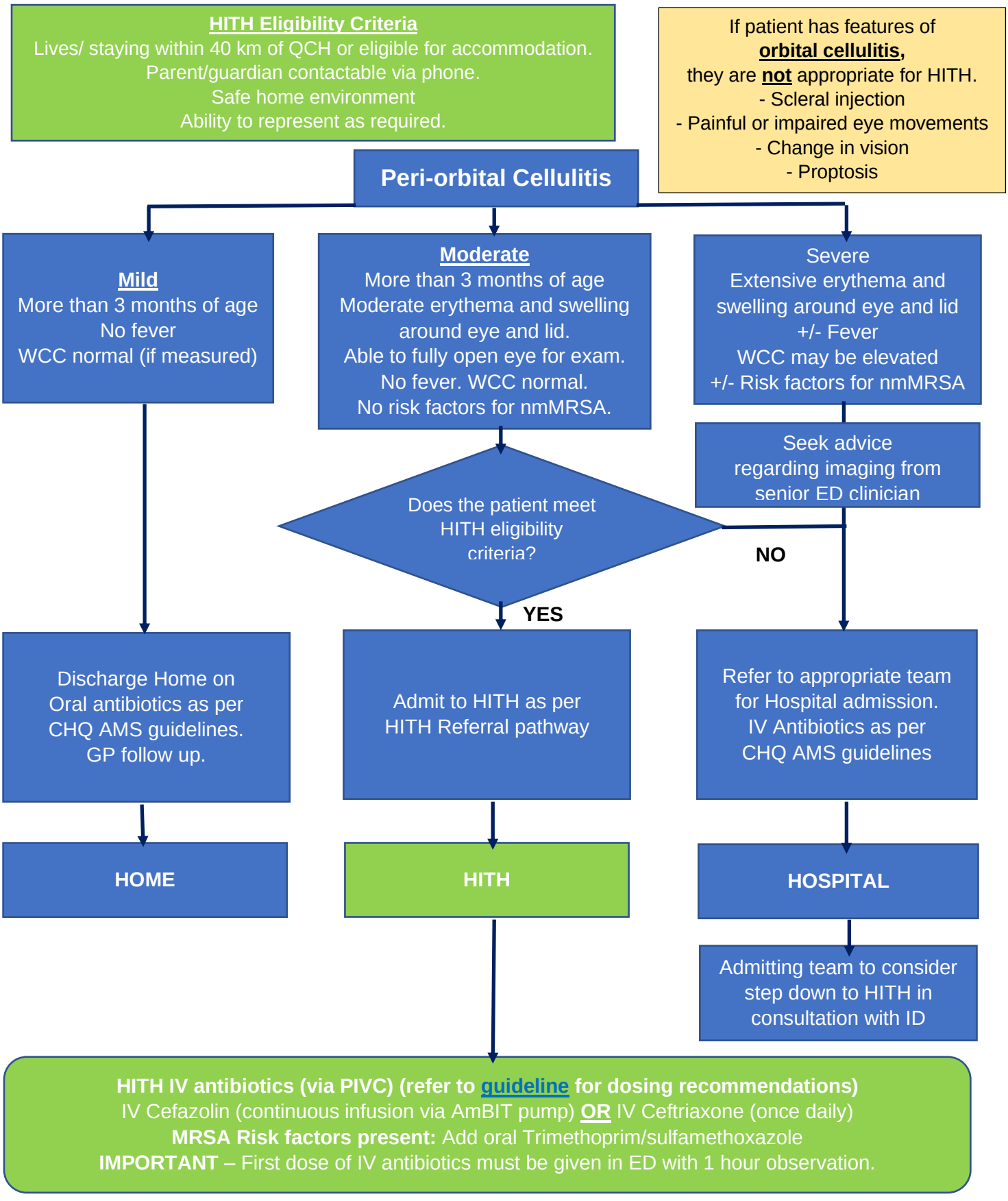
Appendix B – Cellulitis HITH pathway



Appendix C – Lymphadenitis HITH pathway



Appendix D – Peri-orbital Cellulitis HITH pathway



Appendix E – Urinary tract infection (UTI)/ Pyelonephritis HITH pathway