**Starship Paediatric Respiratory and Sleep Medicine Department**
**Outpatient Referral Criteria**

## General Principles

This document provides guidance for elective outpatient referrals to the Starship Tertiary Paediatric Respiratory and Sleep Medicine Service (ADHB) from other paediatric and specialist services around New Zealand.

## Indications for Referral (See Table at end for specific referral criteria)

The service generally only accepts referrals from secondary or tertiary paediatric or surgical services. Exceptions to this include positive newborn screening for cystic fibrosis or where a child has recently moved to New Zealand and already has an established diagnosis of a tertiary Paediatric Sleep or Respiratory disorder.

Criteria: The Service accepts referrals to see children who have respiratory or airway disorders that are not able to be managed solely in secondary care. These disorders will be:

- Rare, complex, unusually severe
- Require specialised investigation
- Require specialised treatment
- Require multi-disciplinary support
- Or for which the child is technology-dependent.
- Children who do not meet these criteria may still require referral to the Service for other reasons.

Children referred to the Service should be under 15 years at time of referral, or (if between 15 and 18) they should still be receiving ongoing Paediatric care from another Paediatric Service. Referrals for adults aged 18 or over will not be accepted by the Service. As we are a tertiary service we would expect that the child referred will remain under the care of a General Paediatric specialist in the local DHB. Referrals from a registrar or fellow should indicate the named specialist on whose behalf the referral is made.

As part of the referral management process the service may request further history or investigations prior to seeing the child. These are necessary for prioritisation of referrals. Following this or as an alternative to an outpatient review some children may be admitted without prior outpatient review. Children referred to outpatient clinic can be expected to be seen within 4 months of referral. ***Initiation of treatment such as chest physiotherapy and antibiotics should not be delayed by the referral process or any requested investigations.***

**Referral Requirements:**

Referrals should be clearly marked “referral" or “referral for advice”. Written referral letters should be addressed to the Central Referrals Office, ADHB. If a rapid clinical review is needed the letter should state urgent (< 1 month) and should be accompanied by a phone call. Any letters received as “copies to” will be considered for information only and not as referrals. Referrals that are not clearly marked or correctly addressed may be overlooked. Referrals may be received by email but should contain the same information as a written letter.

We suggest that written referrals for outpatient review should include:

- Specific question or goal of referral
- Results of all previous relevant laboratory investigations and lung function
- Relevant imaging sent via PACS

We are happy to discuss specific cases with colleagues if there is uncertainty about the need for a referral, the timing of the request, or in regards to the clinical information to accompany the request. Please discuss the child with the on call SMO (ph 09 375 4330). This contact may be managed as a virtual consultation and count towards contracted volumes.

# TABLE: COMMON ELECTIVE/OUTPATIENT REFERRALS AND CRITERIA

(NB This is not a complete or exclusive list of reasons for referral. If uncertain about whether to refer, please discuss with a Paed Resp SMO)

| **Diagnosis / Symptom prompting referral** | **Refer to Respiratory when any of (auditable criteria) [#]:**<br>[#]Referrals generally not accepted from primary care | **Considerations at or prior to referral[#]:**<br>[#]Results may be necessary for prioritisation of referral. |
|---|---|---|
| **Asthma** | • Diagnostic uncertainty eg signs of systemic disease<br>• Daily or continuous symptoms or symptoms from birth<br>• Poor control on combined therapy (ICS/LABA or ICS/montelukast)<br>• Continuous or frequent use of oral steroids<br>• Recurrent life-threatening exacerbation<br>• Complicating co-morbidities / past medical history | • Inhaler technique review<br>• Review adherence to treatment<br>Consider assessment for aspiration/ GOR, allergy testing if appropriate, copy of current asthma action plan, Sweat test<br><br>*Also see National Guidelines*<br>*https://www.nzasthmaguidelines.co.nz/childguidelines-654716.html* |
| **Chronic cough** | • Chronic productive cough not responding to or recurring after at least 2 weeks' antibiotics<br>• Persistent CXR changes following appropriate treatment<br>• If HRCT chest needed under GA, and unavailable locally | • CXR<br>• Spirometry (if age appropriate)<br>• Initial diagnostic workup (minimum of FBC, Igs plus either sweat test or CF mutation screen)<br>• Consider screening or culture for TB<br>• Consider commencing chest physio/antibiotics at or prior to referral |
| **Recurrent pneumonia** | • Persistent CXR changes following appropriate treatment<br>• Persistent atelectasis (commence chest physio immediately)<br>• Recurrent pneumonia (≥ 2 in a year or 3 ever)<br>• If HRCT chest needed under GA, and unavailable locally | • CXR<br>• Spirometry (if age appropriate)<br>• Initial diagnostic workup (minimum of FBC, Igs plus either sweat test or CF mutation screen)<br>• Consider commencing chest physio/antibiotics at or prior to referral |
| **Recurrent bronchiolitis** | • Recurrent episodes (≥ 3/year & ongoing after initial investigation)<br>• Prolonged admission ( > 2 weeks)<br>• Failure to thrive<br>• Persistent abnormal symptoms or signs even when well (> 6 weeks)<br>• Symptoms form birth<br>• If HRCT needed under GA and unavailable locally | • Assess for GORD and aspiration (SLT/VFSS)<br>• Initial diagnostic workup (minimum of FBC, Igs plus either sweat test or CF mutation screen) |

| | | |
|---|---|---|
| **Bronchiectasis (non CF) - Diagnosis previously confirmed.** | • Severe disease on CT or spirometry (FEV1 < 70%)<br>• Recurrent admissions<br>• Failure to thrive<br>• Hypoxia or respiratory failure<br>• Impaired exercise capacity<br>• All ADHB domiciled patients | • Commence chest physio/antibiotics at or prior to referral<br>• Initial diagnostic workup (minimum of FBC, Igs plus either sweat test or CF mutation screen)<br>• Other diagnostic testing as appropriate<br>• HRCT chest (insp and exp views) |
| **Cystic fibrosis** | • If diagnostic uncertainty exists<br>• Hypoxia or respiratory failure<br>• Severe lung disease on CT or spirometry (FEV1 < 70%)<br>• Impaired exercise capacity<br>• Failure to thrive<br>• Recurrent admission<br>• All Auckland region patients | • Sweat test result<br>• CF genotype (will be requested if not done)<br>• Relevant other tests e.g: nutrition, GTT, coeliac Ab's, nutritional intake, faecal fat and chymotrypsin |
| **? Primary ciliary dyskinesia**<br>**(for nasal ciliary brushing in conjunction with exhaled and nasal nitric oxide testing)** | • Persistent wet cough or recurrent LRTI in setting of newborn breathing difficulties, oto-sinus disease and/or situs inversus<br>• AND cystic fibrosis reasonably excluded | • Sweat test*<br>• First line immune testing*<br>• Nasal NO (if locally available)<br>**Referrals will not be accepted without these results* |
| **Haemoptysis** | • Large (>250 ml) or recurrent | • *This is potentially an urgent condition and should be discussed with the on call SMO* |
| **Unexplained chronic $O_2$ need in non ex preterm child** | • Non pulmonary causes excluded e.g. Cyanotic heart disease, shunts, liver disease, spurious oximetry results, recurrent aspiration etc | • Oximetry & CO2<br>• echocardiogram<br>• SLT assessment |
| **Chronic neonatal lung disease (CNLD /BPD)** | • Oxygen requirement ≥ 0.5 L/min<br>• Poor growth / feeding difficulties<br>• Persisting oxygen requirement past 12 months corrected age<br>• Complicating co-morbidities / past medical history | • ECG and Echo<br>• Oximetry on oxygen or off<br>• Recent capillary blood gas<br>• Recent CXR (will be requested if not done) |

| | | |
|---|---|---|
| **Neuromuscular weakness with possible respiratory complications** | • On loss of ambulation<br>• FVC below 60%<br>• Symptoms of sleep disordered breathing / hypoventilation<br>• Atelectasis or recurrent pneumonia<br>• Weak cough or difficulty clearing secretions<br>• Multi-disciplinary review required (incl respiratory physiotherapy assessment or training for cough-assist devices)<br>• Evolving chest wall deformity<br>• Scoliosis surgery being considered | • Overnight oximetry study & Sleep disordered breathing questionnaire (will be requested if not done)<br>• Capillary blood gas (if available)<br>• Lung function (spirometry and peak cough flow) if available |
| **Sleep disordered breathing / sleep apnoea / noisy breathing** | • Symptoms of sleep disordered breathing despite primary intervention (adeno-tonsillectomy / nasal steroids)<br>• Or primary intervention inappropriate or high risk<br>* Stridor should generally be referred to ORL service in first instance | • Oro-pharyngeal findings incl tonsil size<br>• Overnight oximetry study & Sleep disordered breathing questionnaire (will be requested if not done)<br>• Prior ORL evaluations and any sleep studies<br>*Also see National Guidelines*<br>*https://www.starship.org.nz/media/350908/final-psnz-sdb-guideline-2015-plus-exc-sum.pdf* |
| **Excessive daytime somnolence** | • Suspected primary sleep disorder requiring polysomnographic evaluation (eg narcolepsy, PLMS) | • Initial work up for medical causes of tiredness (FBC, iron studies, thyroid function)<br>• Neurology exam<br>• Overnight oximetry study & Sleep disordered breathing questionnaire (will be requested if not done) |
| **Other Disorders** | Disorder requiring specialist assessment or treatment eg:<br>• Recurrent PICU admission for respiratory cause<br>• Pulmonary hypertension with possible respiratory component<br>• Congenital pulmonary malformation requiring specialist review | • Initial diagnostic work-up |

| | | |
|---|---|---|
| **Need for specialised respiratory investigation and/or interpretation of results** | • Lung function: spirometry, lung volume measurements, DLCO, exercise bronchial challenge, hypertonic saline challenge, bronchodilator response, exhaled and nasal nitric oxide measurement,<br>• Flexible bronchoscopy and broncho-alveolar lavage (see separate guideline)<br>• Specialised radiology of the lungs and mediastinum<br>• Polysomnography sleep studies<br>• Assessment for risk of hypoxia during air travel ("hypoxic flight challenge"). | • Clear statement of which test is required |