



دائرة الصحة
DEPARTMENT OF HEALTH

DoH Guidelines for the Initial Diagnosis and Management of Paediatric Asthma (0-17yrs) by Primary Healthcare Providers

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1. INTRODUCTION

Asthma is one of the top public health priorities at Department of Health (DoH). The goal of DoH's Asthma program is to reduce the emergency department visits, hospitalization absenteeism from school and work and death of patients due to asthma. This can be achieved by improving the diagnosis and management of asthma at primary care settings. The goals of asthma treatment for asthma control includes the following:

- Prevent symptoms.
- Maintain normal daily living activities.
- Maintain normal lung function.
- Prevent disease complications and medication side effects.

2. ABOUT THESE GUIDELINES

These Guidelines have been developed based on review of evidence from the Global Initiative for Asthma (GINA) and the National Asthma Education and Prevention (NAEPP) and the Canadian Thoracic Society Guidelines. In addition, they take into account Abu Dhabi's healthcare delivery system, the local cultural and social aspects and context of the Emirate.

3. PURPOSE

The purpose of these guidelines is to improve the diagnosis and management of paediatric asthma by primary health care physicians. In doing so, the Guidelines will contribute toward the following:

- 3.1.Avoidance of premature deaths related to asthma.
- 3.2.Provision of an evidence base rational for the referral of asthma patients.
- 3.3.Provision of quality and safe care to asthma patients in primary healthcare settings.
- 3.4.Enhance the quality of life for people with asthma.
- 3.5.Embed ongoing education on Asthma management.
- 3.6.Promote efficient use of resources for managing and treating asthma patients.

4. SCOPE

These Guidelines apply to:

- 4.1.All primary Healthcare Providers who are engaged in the diagnosis and management of paediatric asthma in the Emirate of Abu Dhabi.
- 4.2.All children 0 to 17 yrs with asthma and their guardians.

5. ABBREVIATIONS

Category	Definition
CFC	Chlorofluorocarbon
CME	Continuing medical education
CPD	Continuing professional development
CT	Computed tomography
DoH	Department of Health
DPI	Dry powder inhaler
GINA	Global Initiative for Asthma
HFA	Hydrofluoralkane
ICS ¹	Inhaled corticosteroids
IgA	Immunoglobulin A
IgE	Immunoglobulin E
IgG	Immunoglobulin G
IgM	Immunoglobulin M
LABA	Long Acting Beta2 Agonist
LTR	leukotriene receptor antagonist
MDT	Multi-disciplinary team
mmHg	Millimeter(s) of mercury
NAEPP	National Asthma Education and Prevention Program
OCS	Oral Corticosteroid
pMDI	Pressurized Metered Dose Inhaler
PRN	Patient Reader Necessary "as necessary"
RAST	Radioallergosorbent test
RTI	Respiratory Tract Infection
SABA	Short Acting Beta2 Agonist

¹ Are considered the most potent and consistent anti-inflammatory agents for long-term asthma management therapy

6. RECOMMENDATIONS FOR THE DIAGNOSIS AND MANAGEMENT OF PAEDIATRIC ASTHMA

The following recommendations have been set out to assist primary healthcare practitioners, patients and/or their guardians to make decisions about the appropriate healthcare for paediatric asthma management. They are designed to support the decision-making processes in paediatric patient care. However, these Guidelines are not and cannot be exhaustive, they are not intended to override the responsibility of Healthcare Professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian. Therefore, primary Healthcare Providers should use their own clinical judgement to address specific case scenarios.

6.1. Recommendation 1: Diagnosis of paediatric asthma

The following may be considered in the diagnosis of paediatric asthma:

6.1.1. The presence of any of the asthma indicators:

- 6.1.1.1. Recurrent breathlessness, chest tightness, wheezing or cough.
Symptoms are often worse at night and early morning, may vary over time and in intensity, may follow viral RTI, exercise, emotions or exposure to aeroallergens or irritants and exposure to cold weather.
- 6.1.1.2. Symptoms of wheezing or cough occur in the absence of respiratory infection. In particular where:
 - 6.1.1.2.1. There is absence of seasonal variation in wheeze.
 - 6.1.1.2.2. There is a history of other allergic diseases (eczema, allergic rhinitis) or asthma in first degree relatives.
 - 6.1.1.2.3. Wheeze is heard on auscultation
 - 6.1.1.2.4. Symptoms persist after 3 years of age.

6.1.2. Differential diagnoses need to be given special consideration, including but not limited to assessment of the following:

- 6.1.2.1. Chronic lung disease of prematurity.
- 6.1.2.2. Cystic fibrosis.
- 6.1.2.3. Foreign body aspiration.
- 6.1.2.4. Vascular ring.
- 6.1.2.5. Laryngotracheomalacia.
- 6.1.2.6. Immune deficiency (bronchiectasis).
- 6.1.2.7. Gastroesophageal reflux.
- 6.1.2.8. Aspiration due to swallowing dysfunction.
- 6.1.2.9. Primary ciliary dyskinesia.
- 6.1.2.10. Congenital heart disease.
- 6.1.2.11. Vocal cord dysfunction.
- 6.1.2.12. Habitual or psychogenic cough.
- 6.1.2.13. Chronic upper airway cough syndrome.

6.1.2.14. Hyper-ventilation (dysfunctional breathing).

- 6.1.3. If there is doubt about the diagnosis of asthma, a plain x-ray may help to exclude structural abnormalities, chronic infections such as tuberculosis, or an inhaled foreign body. Referral to pediatric pulmonologist may be made for further investigations to exclude potential comorbidities or differential diagnosis.
- 6.1.4. Investigations may include, but not limited to, complete blood count, lymphocyte subset, immunoglobulins IgA, IgG, IgM, IgE, RAST (IgE to common allergens), IgG subclasses, sweat chloride, genetic testing, barium or gastrografin study of the gastrointestinal tract, CT chest and bronchoscopy.
- 6.1.5. For children 6 years and older, spirometry test or other tests can be used to confirm asthma (i.e. personal peak flow meter).
- 6.1.6. Spirometry - For children 6 years and older. however, the use of this tool may be impractical and unreliable in a primary healthcare setting. therefore, it should not be used alone to establish a diagnosis of asthma in children.
- 6.1.7. All health professionals managing patients with asthma are recommended to have access to spirometry and to be competent in the interpretation of the results.
- 6.1.8. For children 5 yrs or younger, a trial treatment for 2 to 3 months with short-acting beta2 agonist (SABA) used as needed and recommended dose of Inhaler Corticosteroid (ICS) may help to confirm the diagnosis of asthma. Marked clinical improvement during treatment and deterioration when treatment is stopped. support the diagnosis of asthma.

6.2. Recommendation 2: Initial treatment and referral

- 6.2.1. Initial treatment for children age 0-5 yrs is reported in (Appendix 1 part A) and for children age 6-17 yrs is reported in (Appendix 1 part B). and
- 6.2.2. Children 0-17 yrs Referral Guidelines to appropriately qualified and trained Healthcare Professionals are reported in (Appendix 2).

6.3. Recommendation 3: Assessment and monitoring²

- 6.3.1. The initial assessment may include but is not limited to the following.
 - 6.3.1.1. Review of triggers and risk factors in accordance with (Appendix 3) (including assessment of atopy).
 - 6.3.1.2. Recognition of level of control over last 4 weeks (controlled, partially controlled, and uncontrolled asthma). using (Appendix 4).
 - 6.3.1.3. Extent of medication compliance, inhaler technique and side effects.

² The goals of asthma assessment are to determine the severity of the disease, its impact on patient health and the risk of future exacerbation, hospital admissions or death.

- 6.3.1.4. Treatment plan³ and any necessary changes to address treatment and management needs.
- 6.3.1.5. Forced peak expiratory flow (PEF) where possible and in accordance with this Guideline, (personal best PEF as the highest value achieved over 2–3 weeks of twice daily pre- and post-bronchodilator monitoring during a period of good asthma control).
- 6.3.2. Children with asthma may receive assessment and review of their current treatment regime and level of asthma control in accordance with (Appendix 4) and in accordance with the following timelines:
 - 6.3.2.1. At intervals of 1–3 months..
 - 6.3.2.2. At least annually if not requiring controller medications..
 - 6.3.2.3. More frequently if asthma is poorly controlled..
 - 6.3.2.4. After an exacerbation.
 - 6.3.2.5. Within one week of the exacerbation.

6.4. Recommendation 4: Pharmacological management:

- 6.4.1. The pharmacological management includes the following elements:
 - 6.4.1.1. Relief therapy: defined as treatment taken by the patient for immediate relief of symptoms.
 - 6.4.1.2. Control therapy: defined as therapy that has the potential to control the disease.
- 6.4.2. All medications need to be explained to the parents/guardians and/or by a licensed Healthcare Professional (pharmacist and physician), including through providing information on:
 - 6.4.2.1. The name(s) of the medication.
 - 6.4.2.2. The method of action of the medication.
 - 6.4.2.3. The route of delivery.
 - 6.4.2.4. The frequency of administration.
 - 6.4.2.5. The technique to administer the medication (including the need to use any specific devices for its administration).
 - 6.4.2.6. The possible side effects or interaction with other medication or substances. and
 - 6.4.2.7. Other signs and symptoms that may coincide with medication administration.
- 6.4.3. Information is best given in clear and understandable language.
- 6.4.4. The selection of pharmacologic treatment is needed to be based on the current level of asthma control and treatment:

³ The goal of asthma self-management plan is to enable patient with asthma to gain knowledge, confidence and skills to assume a major role in the management of their asthma. This will help to achieve good control of symptoms, maintain normal activity levels and minimize future exacerbations.

- a. A low dose of ICS is recommended as preferred initial treatment for children.
 - b. Adjusting asthma medication, stepping up or down, according to level of control (Appendix 1 A&B).
 - c. If control has been maintained for at least three months, treatment may be stepped down.
 - d. Inhaled medications are the preferred treatment. They deliver drugs directly to the airways, resulting in potent therapeutic effect with fewer side effects.
- 6.4.5. The recommended delivery devices to deliver inhaled medication is reported in (Appendix 5).

6.5. Recommendation 5: Asthma education for parents/guardians and/or children

- 6.5.1. Education and guidance should be ideally available and accessible for all parents/guardians and/or children with asthma
- 6.5.2. The essential elements of asthma education to be delivered to all parents/guardians and/or children ideally include:
 - 6.5.2.1. Basic facts about asthma.
 - 6.5.2.2. Environmental control measures such as that described at (Appendix 3).
 - 6.5.2.3. Recognition of level of asthma control over last 4 weeks (Appendix 6 part A & B).
 - 6.5.2.4. Use of rescue and controller medications.
 - 6.5.2.5. Inhaler technique.
 - 6.5.2.6. Recording symptoms in diary or similar document.
 - 6.5.2.7. Following an action plan including at least, but not limited to information in (Appendix 7) and
 - 6.5.2.8. Importance of compliance with treatment and follow-up visits.
 - 6.5.2.9. Asthma education should be provided by appropriately trained personnel with asthma specific expertise (nurse, asthma educator, respiratory therapist, and physician).

6.6. Recommendation 6: Special consideration in managing patients with asthma aged 12 to 17 yrs

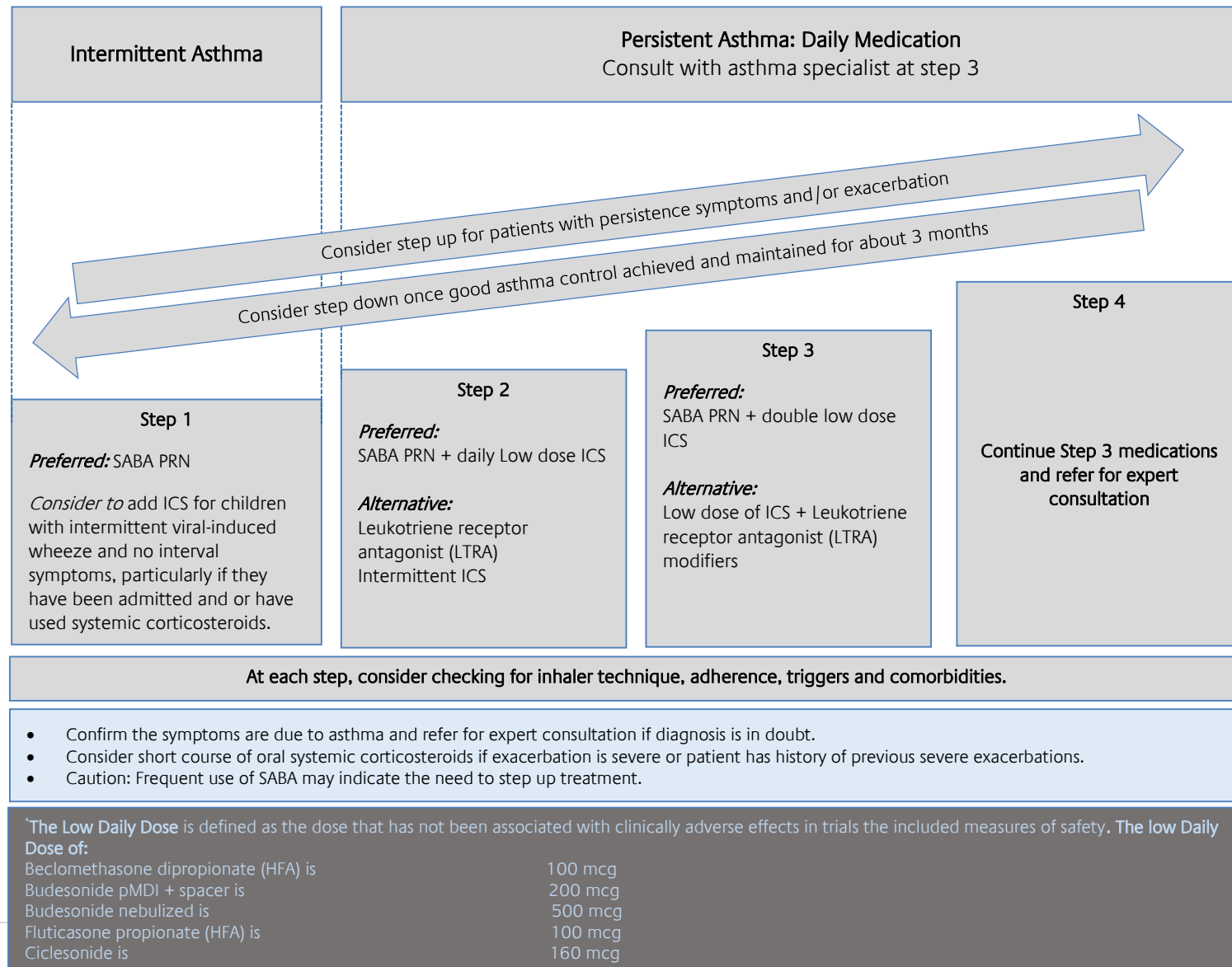
- 6.6.1. Asthma diagnosis may be based on:
 - 6.6.1.1. Careful history taking, clinical examination, and objective measures of airway obstruction and airway hyper-responsiveness.
 - 6.6.1.2. Smoking status.
 - 6.6.1.3. Exercise induced asthma.
 - 6.6.1.4. Psycho-social factors.
 - 6.6.1.5. Inhalation technique.

6.7. Recommendation 7: Management of asthma exacerbations

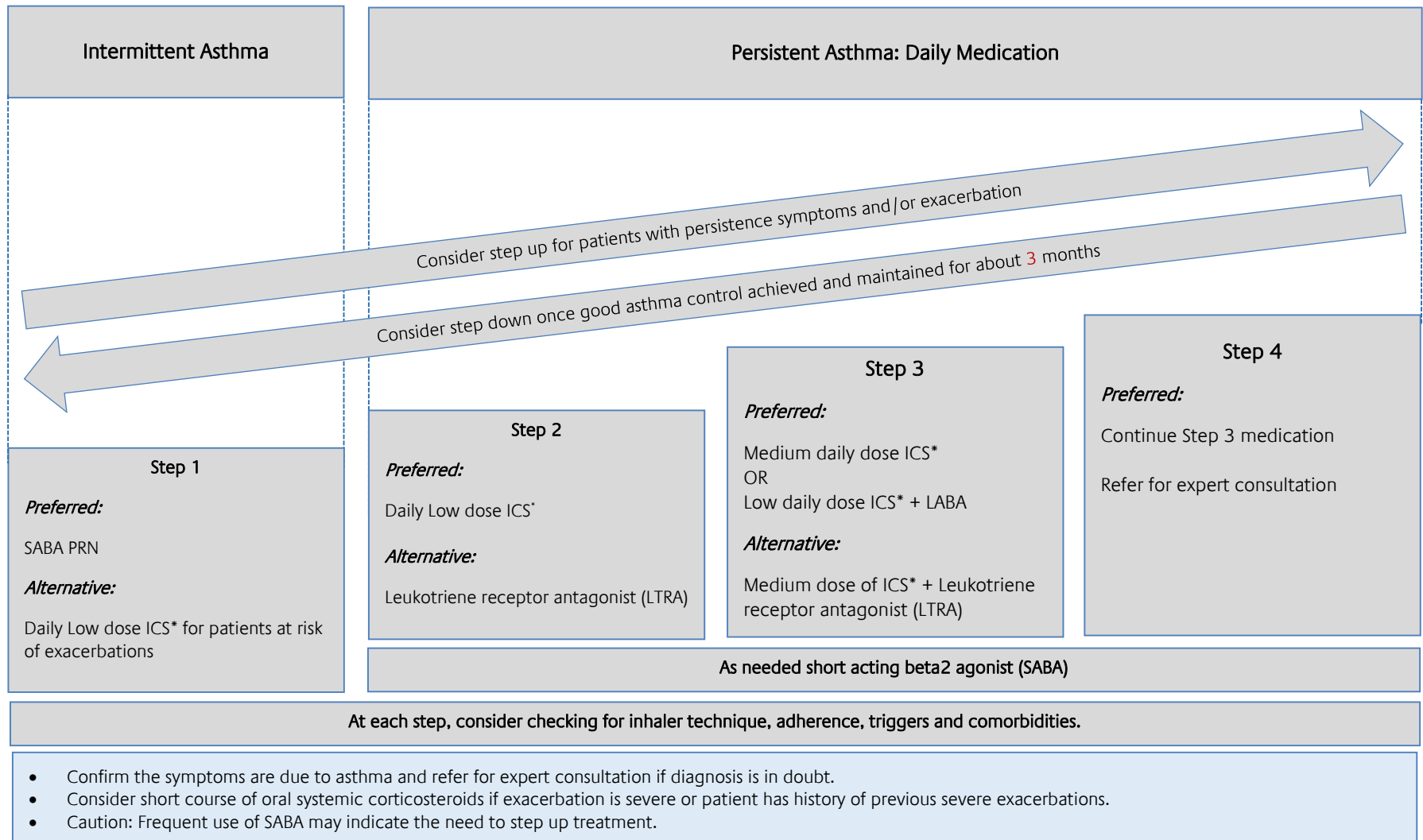
- 6.7.1. Severe exacerbation is considered life-threatening emergency. GINA provides Guidelines for Management of Asthma Exacerbations in the acute care setting that can be applied in primary care settings too (Appendix 8).
- 6.7.2. It is necessary to promptly and thoroughly assess the severity of the acute attack to determine the required type of treatment (Appendix 9).
- 6.7.3. Treatment is to be administered concurrently to achieve the most rapid relief of the exacerbation in accordance with guidance for initial treatment.
- 6.7.4. Response to the treatment may have ongoing assessment.
- 6.7.5. Refer to the emergency unit if:
 - 6.7.5.1. The patient presented with severe exacerbation.
 - 6.7.5.2. Exacerbation is not resolved within 1-2 hours of treatment.
 - 6.7.5.3. Acute treatment cannot be delivered at home due to social circumstances.
- 6.7.6. Follow up visits may be in accordance with the specified content and frequency detailed in this guideline.
- 6.7.7. LABA monotherapy is not advisable in an acute asthma exacerbation.

7. APPENDICES

Appendix 1: A. Recommended management of paediatric asthma (0-5 yrs)



B. Recommended management of paediatric asthma (6-17yrs).



*Daily Doses of ICS by age

Drug	Age	Low Dose (mcg)	Medium Dose (mcg)	High Dose (mcg)
Beclomethasone dipropionate (CFC)	6-11 years	100 - 200	>200 -400	>400
	≥ 12 years	200 - 500	>500 1000	>1000
Beclomethasone dipropionate (HFA)	6-11 years	50 - 100	>100 - 200	>200
	≥ 12 years	100 - 200	>200 - 400	>400
Budesonide (DPI)	6-11 years	100 - 200	>200 – 400	>400
	≥ 12 years	200 - 400	>400 -800	>800
Budesonide (nebulas)	6-11 years	250 - 500	>500 - 1000	>1000
Ciclesonide	6-11 years	80	>80 - 160	>160
Ciclesonide (HFA)	≥ 12 years	80 - 160	>160 - 320	>320
Fluticasone furoate (DPI)	6-11 years	NA	NA	NA
	≥ 12 years	100	NA	200
Fluticasone propionate (DPI)	6-11 years	100 - 200	>200 - 400	>400
	≥ 12 years	100 - 250	>250 - 500	>500
Fluticasone propionate (HFA)	6-11 years	100 - 200	>200 - 500	>500
	≥ 12 years	100 - 250	>250 - 500	>500
Mometasone furoate	6-11 years	110	≥220 - <440	≥440
	≥ 12 years	110 - 220	>220 - 440	>440
Triamcinolone acetonide	6-11 years	400 - 800	>800 - 1200	≥1200
	≥ 12 years	400 - 1000	>100 - 2000	>2000

Refer to 2017 Global Initiative for Asthma

Appendix 2. Pulmonary specialist referral

Consider pulmonary specialist referral

- Clinical features that suggest an alternative diagnosis/ require further investigations:
 - ✓ Failure to thrive,
 - ✓ Neonatal or very early onset of symptoms,
 - ✓ Vomiting or choking associated with respiratory symptoms,
 - ✓ Continuous wheezing,
 - ✓ Failure to respond to asthma controller medications,
 - ✓ No association of symptoms with typical triggers such as viral URTI,
 - ✓ Focal lung or cardiovascular signs,
 - ✓ Finger clubbing,
 - ✓ Hypoxemia outside context of viral illness,
 - ✓ History of recurrent oral thrush, watery stools, sinopulmonary infections, skin infections/ abscesses.
- Patient with frequent exacerbations despite adequate controller medications.
- Intensive care unit admission.

Appendix 3. Common triggers and avoidance strategies

Strategies for avoiding common allergens and pollutants

- Decreasing environmental exposure to the following can enhance asthma control:
 - ✓ All types of smoking.
 - ✓ Perfumes and burning fragrances such as bakhour.
 - ✓ Drugs, food additives and preservatives that cause symptoms.
- Other interventions have shown to decrease the exposure to indoor allergens, but clinically controversial:
 - ✓ Outdoor pollens, sand storms and mold: Close windows and doors and remain indoors when pollen, sand storm and mold counts are highest.
 - ✓ House dust mites: wash bed linens and blankets weekly in hot water and dry in the sun. Use anti-allergic bedding if possible and/or mattress covers and encasings. Replace carpets with hard flooring, especially in sleeping rooms. Use vacuum cleaner with filters.
 - ✓ Pets with fur: Use air filters. Remove the pet from the home, or at least from the sleeping area.
 - ✓ Cockroaches: Clean the home thoroughly. Use pesticide spray, but make sure the patient is not at home when spraying occurs.
 - ✓ Indoor mold: Reduce humidity in the house. clean damp areas frequently.

Appendix 4: Assessment of Asthma Control:

A. Classification of Asthma Severity in children 0-11 yrs

I. Assessing asthma control children 0-11 yrs (last 4 weeks)			
Features	Controlled (all of the following)	Partially Controlled (Any measure present)	Uncontrolled
Daytime symptoms (wheezing, cough, difficult breathing) Children 0-5 yrs. : >1day/week Children 6-11 yrs. : >2days/week	None	1 or 2 features	3 or 4 features
Activity limitation (i.e. Laughing, crying, playing..)			
Night time symptoms (awakening)			
Need for reliever (SABA) Children 0-5yrs.: >once/week Children 6-11 yrs. : >twice/week			
FEV ₁ or peak flow (Lung function)	Normal	<80% predicted or personal best (if known)	
Asthma control test score ≥4 years age	≥20	16–19	<16
II. Assessing asthma future risk factors (should be at diagnosis, periodically and specially for patients with exacerbation history)			
Asthma flare-ups within the coming months	Children 0-5 yrs. <ul style="list-style-type: none">• Poor adherence with controller medication, or incorrect inhaler techniques.• Uncontrolled asthma symptoms.• The start of the child’s usual seasonal “flare-up” especially in combination with viral infection.• Exposure to tobacco smoke, indoor or outdoor air pollution & indoor allergens.• Major psychological or socioeconomic problems for child or family.• ≥1 hospitalizations due to acute asthma. Children 6-11 yrs. <ul style="list-style-type: none">• High SABA use• Low FEV₁, (<60%)• Comorbidities i.e obesity, food allergy gastroesophageal reflux, rhinosinusitis..• Uncontrolled asthma symptoms.• The start of the child’s usual seasonal “flare-up” especially in combination with viral infection.		

	<ul style="list-style-type: none"> • Exposure to tobacco smoke, indoor or outdoor air pollution & indoor allergens. • Major psychological or socioeconomic problems for child or family. • ≥ 1 hospitalizations due to acute asthma.
Develop fixed airflow limitation	<p>Children 0-5yrs:</p> <ul style="list-style-type: none"> • Severe asthma with several hospitalization. • History of recurrent bronchiolitis. <p>Children 6-11yrs:</p> <ul style="list-style-type: none"> • Inadequate ICS treatment. • Exposure to tobacco smoke, noxious chemicals, manufacturing fumes. • Low initial FEV1, persistent symptoms in between episodes, or blood eosinophilia while alternative diagnosis such as foreign body, cystic fibrosis and bronchopulmonary aspergillosis (ABPA) should be considered
Medication side effects	<ul style="list-style-type: none"> • Frequent courses of OCS or high-dose ICS. • Incorrect use of inhaler or nebulized medications (Must review technique during each visit)

Refer to 2017 Global Initiative for Asthma

Appendix 5. The recommended Inhaler delivery devices

Age group	Preferred Device	Alternative Device
< 4 years	pMDI plus a spacer with face mask	nebulizer with face mask
4-6 years	pMDI plus a spacer with mouthpiece	pMDI plus a spacer with a face mask <i>or</i> , a nebulizer with mouthpiece or face mask
> 6 years	Dry powder inhaler, <i>or</i> breath-actuated pMDI, <i>or</i> pMDI with spacer and mouth piece	Nebulizer with mouthpiece

Appendix 6: A. Asthma Control Test (ACT) for children ages 4 to 11 yrs.
(English version):

Asthma Control Test (from 4 to 11 years old)

Do you want to know about your child asthma control level, or if your child treatment plan need to be changed, then simply:

- Choose the most appropriate answer and write it's score in the circle to the right.
- The total score will help you and the doctor to discuss the treatment plan.

First : Help your child to respond to the first four questions:

How do you feel your asthma is today?

Q1

3

Very good

2

Good

1

Bad

0

Very bad

To what extent does asthma prevent you from playing, running or exercising?

Q2

3

Good, I can always play & run

2

Bad, but still I can play & run.

1

Bad, I don't like it. Sometimes I can't play & run

0

Very bad, I can't play & run

Does asthma make you cough?

Q3

3

No, I never cough from asthma.

2

Yes, rarely

1

Yes, sometimes

0

Yes, always

Does asthma disturb your sleep at night?

Q4

3

No, I never wake up from asthma.

2

Yes, rarely

1

Yes, sometimes

0

Yes, always

Second : Complete the remaining questions on your own :

Q5 During the past 4 weeks, how often did your child have asthma attack during day time?

5

Never

4

1-3 Days/Month

3

4-10 Days/Month

2

11-18 Days/Month

1

19-24 Days/Month

0

Every Day

Q6 During the past 4 weeks, how often did your child have wheezing during day time?

5

Never

4

1-3 Days/Month

3

4-10 Days/Month

2

11-18 Days/Month

1

19-24 Days/Month

0

Every Day

Q7 During the past 4 weeks, how often did your child wakeup during night from asthma?

5

Never

4

1-3 Days/Month

3

4-10 Days/Month

2

11-18 Days/Month

1

19-24 Days/Month

0


Every Day

If your child's score is **19 or less** this may indicate that your child's asthma is not controlled as it should be. Share it with the doctor & ask him if your child treatment plan needs changing.

Score

Asthma Control Test (ACT) for children ages 4 to 11 yrs. (Arabic version):

اختبار السيطرة على الربو (من عمر 4 إلى 11 سنة)



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هل تريد أن تعرف مستوى الربو لدى طفلك؟ وإذا كان بحاجة إلى تغيير الخطة العلاجية أم لا؟ إذاً، قم بإجراء الاختبار التالي:

- اختر الإجابة المناسبة لكل سؤال واكتب الرقم الظاهر في المربع في الخانة المخصصة على اليسار.

- مجموع الدرجات سيساعدك أنت والطبيب في وضع الخطة العلاجية الخاصة بطفلك.

أولاً، قم بمساعدة طفلك للإجابة عن الأسئلة الأربعة التالية :

النتيجة

+

+

+

+

+

+

=

كيف هي حالة الربو لديك اليوم؟

س1 😊 3 جيدة جداً 😊 2 جيدة 😞 1 سيئة 😡 0 سيئة جداً

إلى أي مدى يمنعك الربو من اللعب أو الركض أو ممارسة الرياضة؟

س2 😊 3 ليس له تأثير 😊 2 مازلت أمارس الرياضة التي أريد 😞 1 مازلت أمارس الرياضة ولكن سئياً نوعاً ما ولكن يمنعني من مزاولة بعض أنواع الرياضة 😡 0 سئياً جداً ، لا أستطيع ممارسة الرياضة كما أريد

هل يسبب لك الربو السعال؟

س3 😊 3 كلا ، لا يسبب لي الربو السعال 😊 2 نعم ، بعض الوقت 😞 1 نعم ، معظم الوقت 😡 0 نعم ، كل الوقت

هل تستيقظ بالليل بسبب الربو؟

س4 😊 3 كلا ، لا أستيقظ بسبب الربو 😊 2 نعم ، بعض الوقت 😞 1 نعم ، معظم الوقت 😡 0 نعم ، كل الوقت

ثانياً، الرجاء الإجابة عن الأسئلة التالية بنفسك :

خلال الـ 4 أسابيع الماضية كم مرة عانى طفلك من أعراض الربو خلال النهار؟

س5 5 ولا مرة 4 1-3 يوم كل شهر 3 4-10 يوم كل شهر 2 11-18 يوم كل شهر 1 19-24 يوم كل شهر 0 كل يوم

خلال الـ 4 أسابيع الماضية كم مرة عانى طفلك من الصغير بسبب الربو خلال النهار؟

س6 5 ولا مرة 4 1-3 يوم كل شهر 3 4-10 يوم كل شهر 2 11-18 يوم كل شهر 1 19-24 يوم كل شهر 0 كل يوم

خلال الـ 4 أسابيع الماضية كم مرة إستيقظ طفلك في الليل بسبب الربو؟

س7 5 ولا مرة 4 1-3 يوم كل شهر 3 4-10 يوم كل شهر 2 11-18 يوم كل شهر 1 19-24 يوم كل شهر 0 كل يوم

الإجمالي

إذا كان مجموع الدرجات هو **19 أو أقل**، فهذا مؤشر أن حالة الربو لدى طفلك غير مسيطر عليها كما يجب. أطلع طبيبك على النتيجة. إسأل الطبيب فيما إذا كان عليك تغيير الخطة العلاجية المتبعة.

B. Asthma control Test (ACT) for children ages 12yrs and older:



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Asthma Control Test (for 12 years or older) اختبار السيطرة على الربو (من عُمر ١٢ سنة فأكثر)

Do you want to know about your asthma control level, then simply take the test
The below five questions will let you know whether you are controlling your asthma or asthma controlling you.

- Choose the most appropriate one that you think your asthma is.
- Add your 5 scores to get the total.
- Your total score will help you and your doctor to discuss your treatment plan.

هل تريد أن تعرف مستوى حالة الربو لديك، إذاً قم بإجراء الاختبار
الأسئلة الخمسة التالية تجعلك تعرف إن كنت مسيطر على مشكلة الربو أو إنه يعيق نظام حياتك.

- اختر حجتك عن كل سؤال و اكتب الرقم في الخانة المخصصة على اليسار.
- اجمع درجاتك للحصول على المجموع.
- مجموع درجاتك سيساعدك أنت وطبيبك في وضع الخطة العلاجية الخاصة بك.

Q1 During the past 4 weeks, how often did your asthma prevent you from getting as much done at work, school or home?

1 All of the time 2 Most of the time 3 Some of the time 4 A little of the time 5 None of the time

س١ خلال الـ ٤ أسابيع الماضية، في كم من الوقت منعك الربو من إنجاز واجباتك في العمل، أو الدراسة، أو المنزل؟

1 كل الوقت 2 معظم الوقت 3 بعض الوقت 4 قليل من الوقت 5 لم يحصل أبداً

Q2 During the past 4 weeks, how often have you had shortness of breath?

1 More than once a day 2 Once a day 3 3 to 6 times a week 4 Once or twice a week 5 Not at all

س٢ خلال الـ ٤ أسابيع الماضية، كم مرة حصل لك ضيق نفس؟

1 أكثر من مرة في اليوم 2 مرة واحدة في اليوم 3 من ٣ إلى ٦ مرات في الأسبوع 4 مرة أو مرتين في الأسبوع 5 لم يحصل أبداً

Q3 During the past 4 weeks, how often did your asthma symptoms (wheezing, coughing, shortness of breath, chest tightness or pain) wake you up at night or earlier than usual in the morning?

1 4 or more times a week 2 3 to 6 times a week 3 Once a week 4 Once or twice a week 5 Not at all

س٣ خلال الـ ٤ أسابيع الماضية، كم مرة أيقظتك أعراض الربو (الصفير، السعال، ضيق النفس، ضيق صدر أو ألم في الصدر) أثناء الليل أو في الصباح الباكر؟

1 ٤ مرات أو أكثر في الأسبوع 2 ٣ إلى ٦ مرات في الأسبوع 3 مرة واحدة في الأسبوع 4 مرة أو مرتين في الأسبوع 5 لم يحصل أبداً

Q4 During the past 4 weeks, how often have you used your rescue inhaler Bronchodilator or nebuliser?

1 3 or more times a day 2 1 or 2 times a day 3 2 or 3 times a week 4 Once a week or less 5 Not at all

س٤ خلال الـ ٤ أسابيع الماضية، كم مرة استخدمت بخاخة الزمات أو البخار (موسعات الشعب الهوائية)؟

1 ٣ مرات أو أكثر في اليوم 2 مرة واحدة في اليوم 3 ٢ أو ٣ مرات في الأسبوع 4 مرة واحدة في الأسبوع أو أقل 5 لم يحصل أبداً

Q5 How would you rate your asthma control ?

1 Not controlled 2 Poorly controlled 3 Somewhat controlled 4 Well controlled 5 Completely controlled

س٥ خلال الـ ٤ أسابيع الماضية، ما هو تقييمك للسيطرة على الربو عليك؟

1 لا يوجد سيطرة أبداً 2 سيئة 3 إلى حد ما 4 جيدة 5 سيطرة تامة

25 Simply turn over and find out what it means

٢٥ انقلب الصفحة لتعرف ما الذي تعنيه درجاتك

Total

المجموع

Cont. Score definition of ACT for children ages 12 yrs and older:

Score 19 or less

asthma is uncontrolled or poorly controlled. Discuss your result with your doctor. There are other treatments that can control your asthma

النتيجة ١٩ أو أقل..

حالة الربو لديك غير مسيطر عليها. اطلع طبيبك على النتيجة. يوجد علاجات للسيطرة على الربو بشكل افضل

Score 24- 20

You have some Control over your asthma. You can do better. Ask your doctor if you should change your treatment plan

النتيجة ٢٠ - ٢٤

حالة الربو غير مسيطر عليها كما يجب. إسأل طبيبك.. فيما إذا كان عليك تغيير الخطة العلاجية

Score 25

You have control over your asthma, good work. Keep it up.

النتيجة ٢٥

حالة الربو مسيطر عليها وحافظ عليها بالمتابعة مع الطبيب

Appendix 7: A. Asthma self-management plan for children/guardians


**ASTHMA
ACTION
PLAN**

Child Name _____

Age _____ Date of Birth _____

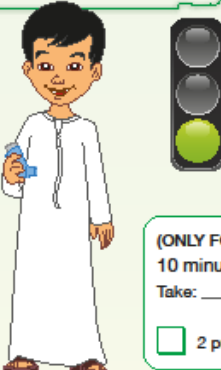
Parent/Guardian _____

Contact number _____ Other Contact number _____



وزارة الصحة
DEPARTMENT OF HEALTH

**GREEN ZONE
DOING GREAT**



Peak Flow Meter Personal Best _____

- ☐ Breathing is easy
- ☐ No cough
- ☐ No wheeze
- ☐ Can do regular activities
- ☐ Sleeps through the night
- ☐ Using quick relief medicine no more than 2 times a week

PREVENTIVE MEDICINE

MEDICINE _____

Dose _____ When _____ Device _____

MEDICINE _____

Dose _____ When _____ Device _____

MEDICINE _____

Dose _____ When _____ Device _____


OTHER INSTRUCTION

(ONLY FOR EXERCISE-INDUCED ASTHMA)
10 minutes before exercise

Take: _____ (short-acting β -2-agonist)

☐ 2 puffs ☐ 4 puffs ☐ 6 puffs

**YELLOW ZONE
CAUTION**



Peak Flow Meter between %50 to %80 of personal best _____ to _____

- ☐ Short of breath ☐ Cough ☐ Wheeze ☐ Can't do usual activities
- ☐ Sleep disturbance due to breathing difficulty, cough or wheeze ☐ Using quick relief medicine more than 2 times a week

1 → GIVE QUICK RELIEF MEDICINE AND KEEP TAKING YOUR GREEN ZONE MEDICINE

Take: (every 20 minutes for up to 1 hour) _____ (short-acting β -2-agonist)

☐ 2 puffs ☐ 4 puffs OR ☐ Nebulizer, dose _____

2 → If your symptoms return to GREEN ZONE after 1 hour of above treatment: Continue monitoring to be sure you stay in the GREEN ZONE OR if your symptoms do not return to GREEN ZONE after 1 hour of above treatment:


Take: _____ (short-acting β -2-agonist)

☐ 2 puffs ☐ 4 puffs OR ☐ Nebulizer, dose _____ every _____ minutes

☐ Add _____ (Oral Steroid) mg per day for _____ Days

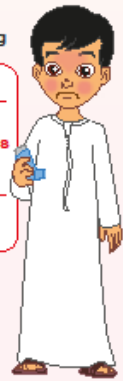
3 → If child gets worse, call parents and GO TO RED ZONE

**RED ZONE
DANGER**



Peak Flow Meter less than %50 of personal best _____

- ☐ Child has trouble walking or talking ☐ Breathing very fast
- ☐ Skin on neck or between ribs pulling in ☐ Quick relief medicine not helping




TAKE THIS MEDICINE

Take: _____ (short-acting β -2-agonist)

☐ 4 puffs ☐ 6 puffs OR ☐ Nebulizer, dose _____ every _____ minutes

☐ Add _____ (Oral Steroid) mg per day for _____ Days

 **DO NOT WAIT,**
CALL 998 OR go to the nearby hospital as soon as possible.

Doctor Name: _____

B. Arabic translation of the Asthma self-management plan for children/guardians



خطه عمل الربو	إسم الطفل
	العمر
	والدائن / ولي الأمر
	رأسم الهاتف

المنطقة الخضراء مستقر

مقياس شدة جريان الهواء (أفضل قراءة 8)

الأدوية الوقائية

إسم الدواء

الجرعة

مواضيع الجرعة

الجرعة

إرشادات أخرى

التنفس بصورة طبيعية

لا يوجد سعال

لا يوجد صفير في الصدر

القيام بالنشاطات اليومية بدون أي صعوبة

اللون خلال الليل بدون تفاعل

بسيطة أعراض الربو

استخدام أدوية الربو سريعة المفعول أقل من مرتين في الأسبوع

(نشط لمالك الربو المصاحبة للرياضة)

قبل ممارسة الرياضة بـ 10 دقائق

تناول

(short-acting S-2agonist)

6 بخات

4 بخات

يكتن

المنطقة الصفراء احذر

مقياس شدة جريان الهواء بين 50% و 80% من أفضل قراءة 8

التي

صعوبة في التنفس

صعوبة في القيام بالنشاطات اليومية

سعال

صعوبة في النوم بسبب ضيق التنفس

صفير في الصدر

استخدام أدوية الربو سريعة المفعول أكثر من مرتين في الأسبوع

استخدم أدوية الربو سريعة المفعول واستمر في استخدام الأدوية الوقائية المبنية في المنطقة الخضراء

تناول

(short-acting S-2agonist)

20 ملغمة لمدة ساعة

4 بخات أو

بخار مرة واحدة

إذا تحسنت الأعراض وعدت للمنطقة الخضراء بعد ساعة من العلاج استمر في مراقبة أعراض الربو وتحكم من استمرارية البقاء في المنطقة الخضراء

تناول

(short-acting S-2agonist)

4 بخات أو

بخار مرة واحدة

كل دقيقة

إضافة

(Oral Steroid)

مليجرام مرة في اليوم لمدة أيام

إذا لم تحسن أعراض الربو اتصل بولي الأمر وانتقل إلى المنطقة الحمراء

المنطقة الحمراء خطر

مقياس شدة جريان الهواء أقل من 50% من أفضل قراءة 8

توجد صعوبة في الكلام أو المشي بسبب ضيق التنفس

إسهال الجذ بين الضوئ وفي منطقة الرقبة بسبب صعوبة التنفس

التنفس بصورة سريعة

عدم فاعلية الأدوية سريعة المفعول

استخدم

(short-acting S-2agonist)

4 بخات

6 بخات أو

بخار - الجرعة

كل دقيقة

إضافة

(Oral Steroid)

مليجرام يومياً

لنم

لا تتجده

اتصل بالإسعاف على 998 أو توجه إلى أقرب مستشفى في أسرع وقت ممكن

إسم الطبيب

Appendix 8. Primary care management for acute paediatric asthma

Asthma Severity	Mild/ Moderate	Severe / Life-threatening
Treatment	<p>If required, administering oxygen therapy, and titrating oxygen saturation to target of 94-98% (children).</p> <ul style="list-style-type: none"> • Give SABA (100 mcg per puff) using pMDI with spacer or by 2.5mg nebulizer. • Repeat every 20 minutes for the first hour. <p>SABA 5-10 kg. 4 puffs by pMDI + spacer (repeat every 20 min. for the first hour and then prn) or 2.5 mg (0.5 ml) nebulized 10-20 kg 6 puffs pMDI + spacer (repeat every 20 min. for the first hour and then prn) or 3.75 mg (0.75 ml)nebulized >20 kg albuterol 5 mg (5 ml) or 8 puffs pMDI+spacer (repeat every 20 min. for the first hour and then prn) Ipratropium bromide Add to SABA in the first hour in moderate-severe exacerbation or poor response to initial SABA treatment 5-10 kg 500 mcg over 1 hour or 250 mcg every 20 minutes X 2 doses > 10 kg 1000 mcg over 1 hour, or 500 mcg every 20 minutes X 2 doses Oral prednisolone (1-2mg/kg) Max. 60mg daily Dexamethasone preferred for all ages for mild to moderate asthma exacerbation: 5-8 kg: 4 mg 8-12 kg: 8 mg >12 kg: 8 mg</p>	<p>Arrange immediate transfer to higher level care and while waiting give:</p> <ol style="list-style-type: none"> 1. SABA via nebulization with oxygen. 2. Ipratropium bromide. 3. Methylprednisolone 1 mg/kg BID, IV maximum 60 mg
Observation	Monitor closely for 1-2 hr.	
IF	1. Failure to respond after 1hr or showing tachypnea, and decreasing oxygen saturation, arrange immediate transfer to higher-level care.	
	2. Symptoms improved but recur within 3-4hrs continue SABA and definitely start oral steroids.	
	3. Symptoms are controlled within 1-2 hrs. give SABA every 3-4hrs. and double low dose of ICS (for few weeks or months.)	
	4. Time to discharge, patient/guardian should receive the proper follow-up visit plan (2-7 days), check inhaler technique and adherence and provide and explain the self-management action plan	

Appendix 9. Assessment of asthma severity in exacerbation

Asthma Severity	Mild	Moderate	Severe
Respiratory Rate per min 2-3 years 4-5 years 6-12 years >12 years	27-34 25-30 21-26 19-23	35-39 31-35 27-30 24-27	>40 >36 >31 >28
Oxygen Saturation (SpO ₂) on room air ≤5yrs. ≥6 yrs.	95% - 97% 90% - 95%	≥92%	< 92% <92%
Auscultation	End expiratory wheezes only	Expiratory wheezing	Inspiratory and expiratory wheezing to diminished breath sounds
Retractions	Intercostal	Intercostal & substernal	Intercostal, substernal and supraclavicular
Dyspnea	Speaks in short sentences, prefers sitting to lying, coos and babbles	Speaks in partial sentences, short cry	Unable to speak or drink Short Drowsy, confused or silent chest

8. REVIEWERS

Name of Reviewers	Profession	Organization
Dr. Afaf Alblooshi	Medical Research Specialist UAE University	United Arab Emirates University
Dr. Alia Alkalbani	Specialist Pediatrician	Tawam Hospital
Dr. Anwar Sallam	Consultant Pediatric Pulmonologist	Sheikh Khalifa Medical City
Dr. Asma Al Nuaimi	Consultant Pediatric Pulmonologist	Zayed Military Hospital
Dr. Durdana Iram	Consultant Pulmonologist	Tawam Hospital
Dr. Eyman Bashir Shebani	Consultant Pediatrician	Sheikh Khalifa Medical City
Dr. Jayachandran Ramchandran Panickar	Consultant Pediatric Pulmonologist	Sheikh Khalifa Medical City
Dr. Majid Mohammed Al Saleh Al Teneiji	Specialist Pediatrician	Tawam Hospital
Dr. Mohammed Al Samri	Consultant Pediatric Pulmonologist	Tawam Hospital
Dr. Sofia Konstantinopoulou	Consultant Pulmonologist	Sheikh Khalifa Medical City
Dr. Vishwanath K Gowraiah	Consultant Pediatric Pulmonologist	NMC Royal Hospital, Abu Dhabi

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