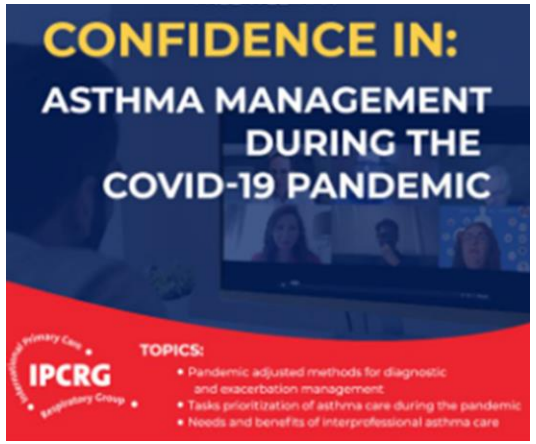
1st IPCRG *Confidence In* Webinar & Abstract Presentations



Presentation 1

Making an Asthma Diagnosis – Anders Østrem, Oslo, Norway

My context:

- GP in Oslo since 1989. Medical centre with 4 GPs, 2 nurses and 3 health secretaries, part of PHT pilot.
- Chronic care not well managed, few pulmonary patients are reviewed annually.
- Public health care system, patient lists average 1050 patients per GP. Fee for service, capitation fee and small patient payment.
- Norway`s Covid-19 figures: Total 31 500 cases, 120 hospital and 305 deaths.
- Minister of health in charge:
  - Directorate of health and Norwegian institute of public health - advisors.
  - “Government Pension Fund Global” = Oil fund =1 trillion $ value.

Covid-19 and asthma diagnosis.

- Normally we see patients in the office.
  - History
  - Physical examination
  - Tests
  - = diagnosis.

- Covid-19 pandemic gives us several challenges:
  - Not possible to have patients in the office.
  - Some of the procedures may increase risk of transmitting the virus.
  - Some of the features of Covid-19 infection can mimic asthma, both language and cultural differences may cause misunderstandings.

What do we known about asthma?

- Asthma is a common and potentially serious chronic disease that can be controlled but not cured

- Asthma causes symptoms such as
  - Wheezing
  - Shortness of breath
  - Chest tightness
  - Cough

Vary over time in their occurrence, frequency and intensity

- Symptoms are associated with variable expiratory airflow,
  - Bronchoconstriction (airway narrowing)
  - Airway wall thickening
  - Increased mucus

- Symptoms may be triggered or worsened by factors such as viral infections, allergens, tobacco smoke, exercise and stress

Definition of asthma

Asthma is a heterogeneous disease, usually characterized by chronic airway inflammation.

It is defined by the history of respiratory symptoms such as wheeze, shortness of breath, chest tightness and cough that vary over time and in intensity, together with variable expiratory airflow limitation.

Diagnosis of asthma

- The diagnosis of asthma should be based on:
  - A history of characteristic symptom patterns
  - Evidence of variable airflow limitation, from bronchodilator reversibility testing or other tests

- Document evidence for the diagnosis in the patient's notes, preferably before starting controller treatment
  - It is often more difficult to confirm the diagnosis after treatment has been started

Diagnosis of asthma – symptoms

- *Increased* probability that symptoms are due to asthma if:
  - More than one type of symptom (wheeze, shortness of breath, cough, chest tightness)
  - Symptoms often worse at night or in the early morning
  - Symptoms vary over time and in intensity
  - Symptoms are triggered by viral infections, exercise, allergen exposure, changes in weather, laughter, irritants such as car exhaust fumes, smoke, or strong smells
  - Personal or family history of asthma.

- *Decreased* probability that symptoms are due to asthma if:
  - Isolated cough with no other respiratory symptoms
  - Chronic production of sputum
  - Shortness of breath associated with dizziness, light-headedness or peripheral tingling
  - Chest pain
  - Exercise-induced dyspnea with noisy inspiration (stridor)

Diagnosis of asthma – physical examination

- Physical examination in people with asthma
  - Often normal
  - The most frequent finding is wheezing on auscultation, especially on forced expiration

- Wheezing is also found in other conditions, for example:
  - Respiratory infections
  - COPD
  - Upper airway dysfunction
  - Endobronchial obstruction
  - Inhaled foreign body

- Wheezing may be absent during severe asthma exacerbations (‘silent chest’)

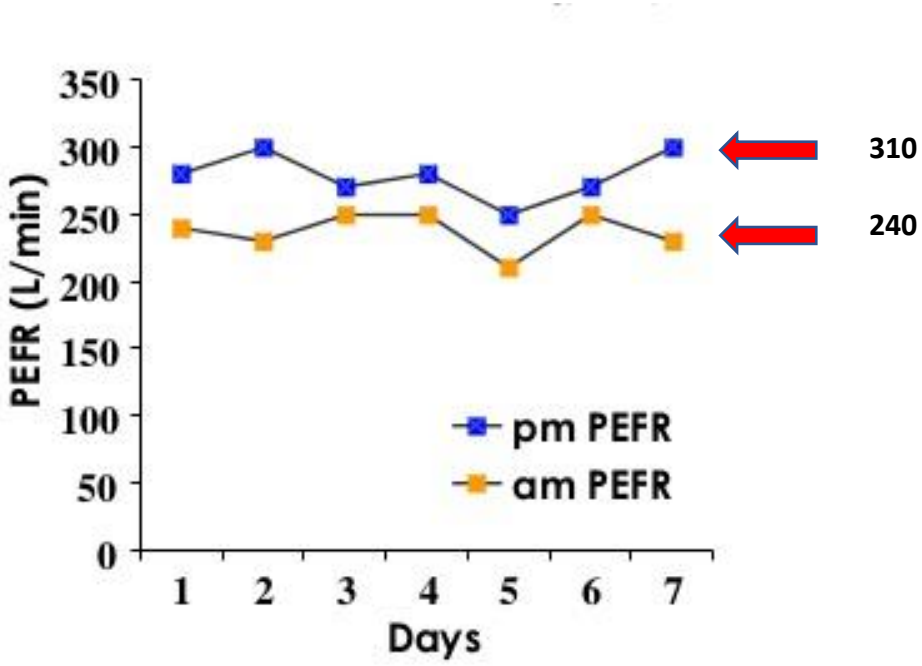
Diagnosis of asthma – variable airflow limitation

- Confirm presence of airflow limitation
  - Document that FEV_1/FVC is reduced
  - FEV_1/ FVC ratio is normally;
    - >0.75 – 0.80 in healthy adults
    - >0.90 in children

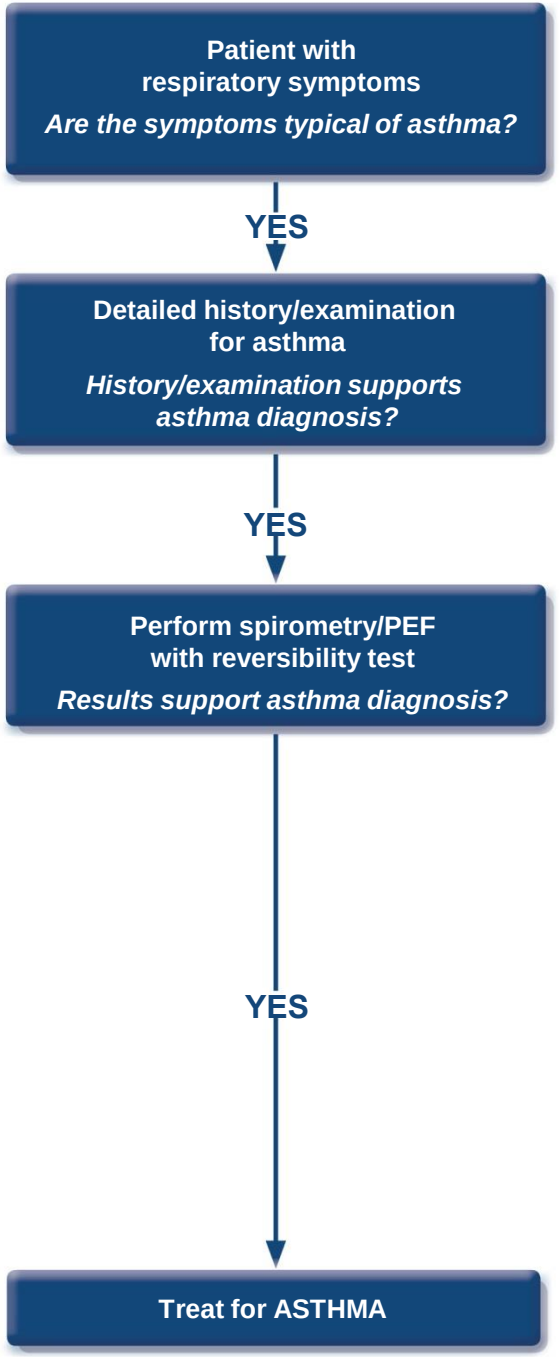
- Confirm that variation in lung function is greater than in healthy individuals:
  - Excessive bronchodilator reversibility
    - Adults: increase in FEV_1 >12% and >200mL
    - Children: increase >12% predicted
  - Excessive diurnal variability from 1-2 weeks' twice-daily PEF monitoring

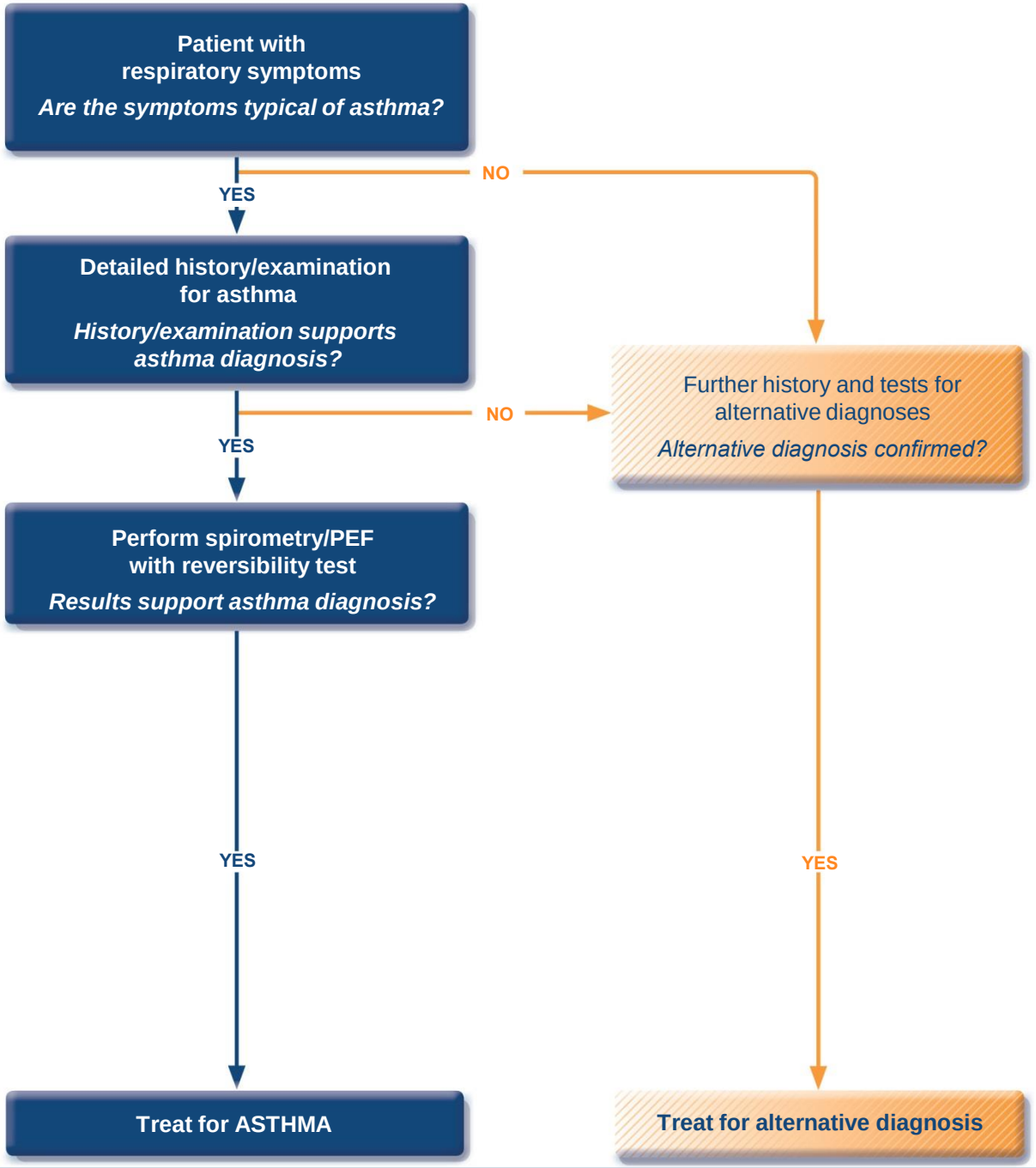
  - Significant increase in FEV_1 or PEF after 4 weeks of controller treatment

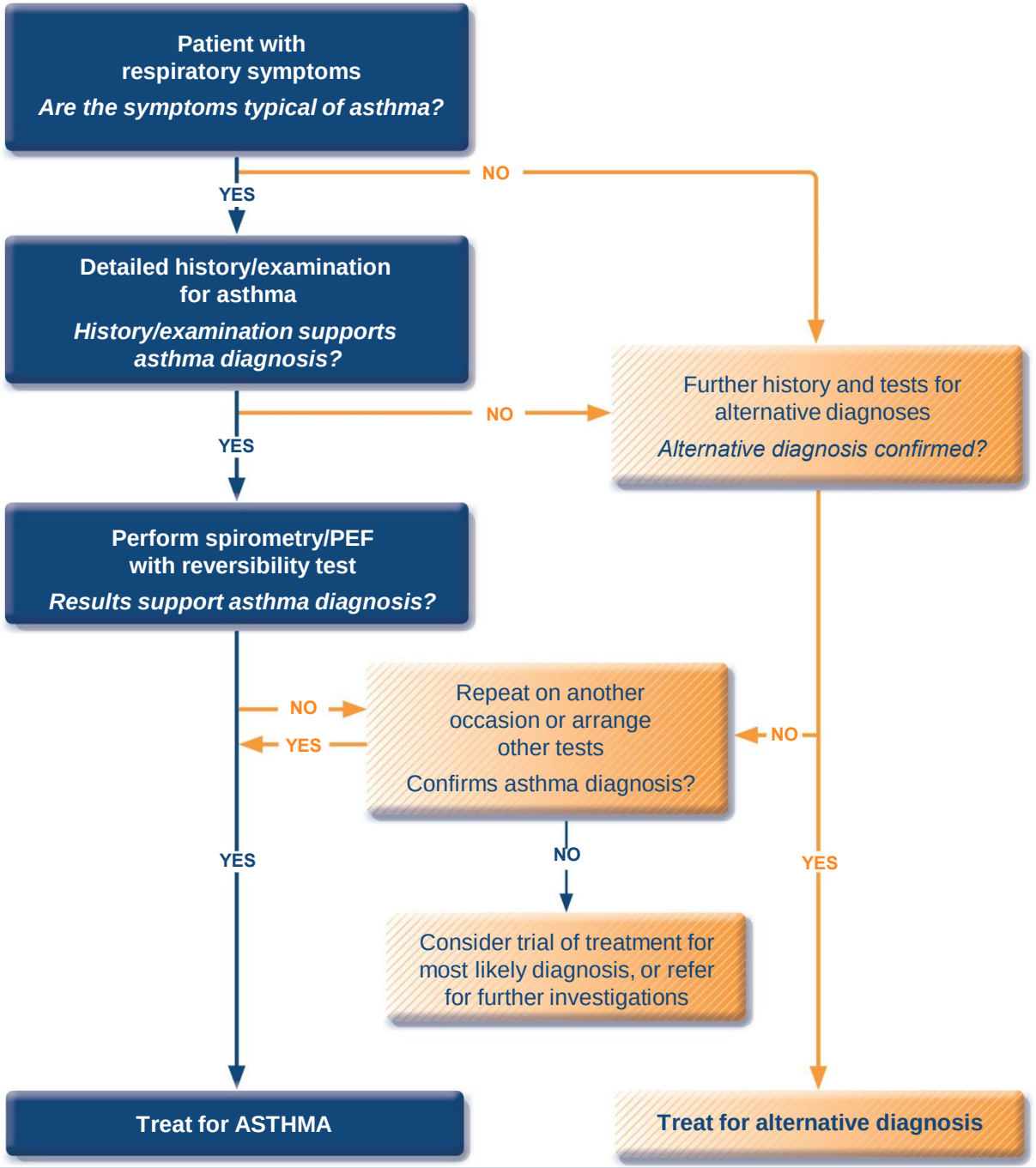
PEF variability

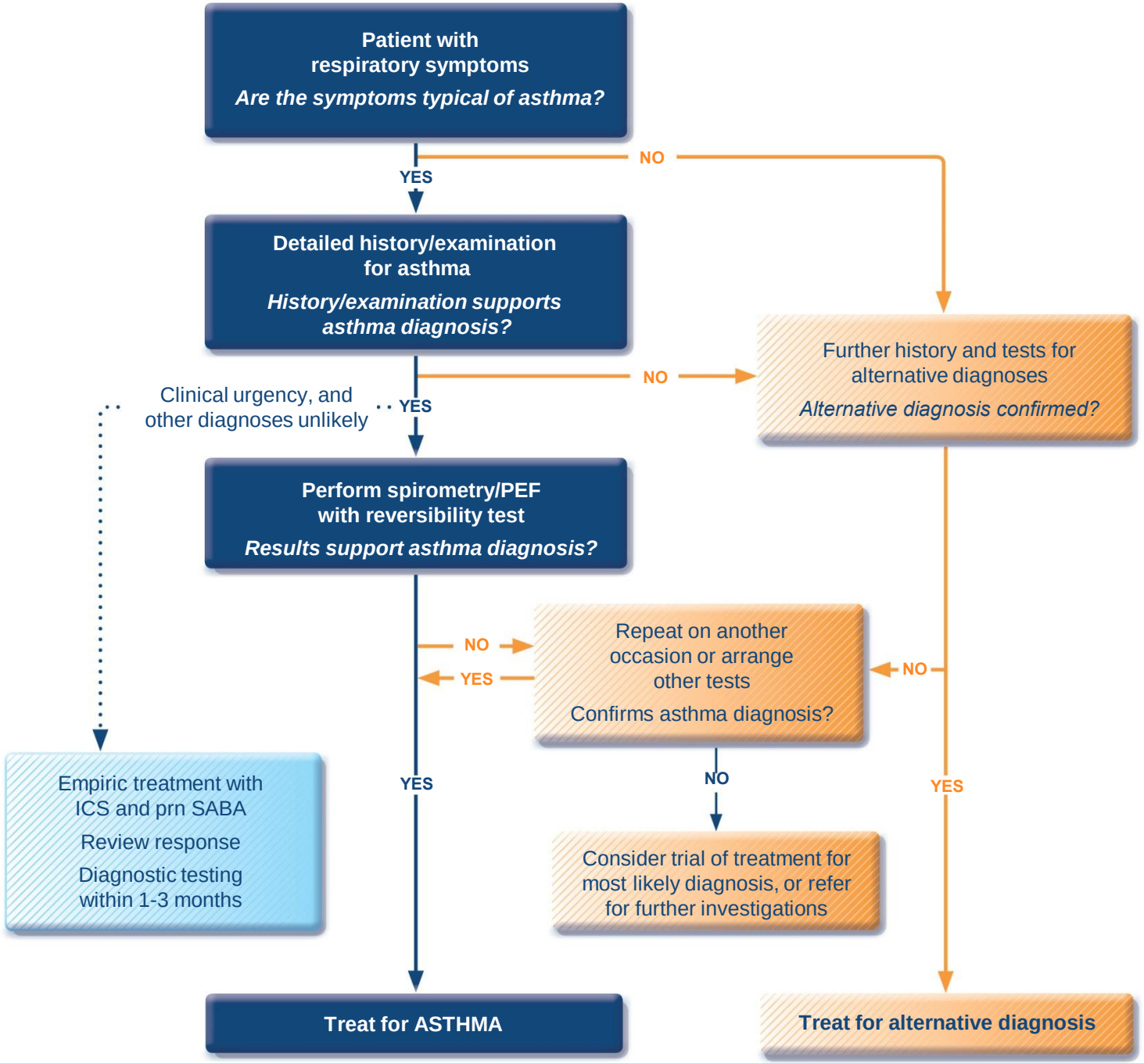


$$\textbf{PEF variability} = \frac{\text{Highest (310)} - \text{Lowest (240)}}{\text{Average (1/2 x 310+240)}} \times 100 = \textbf{25,5\%}$$





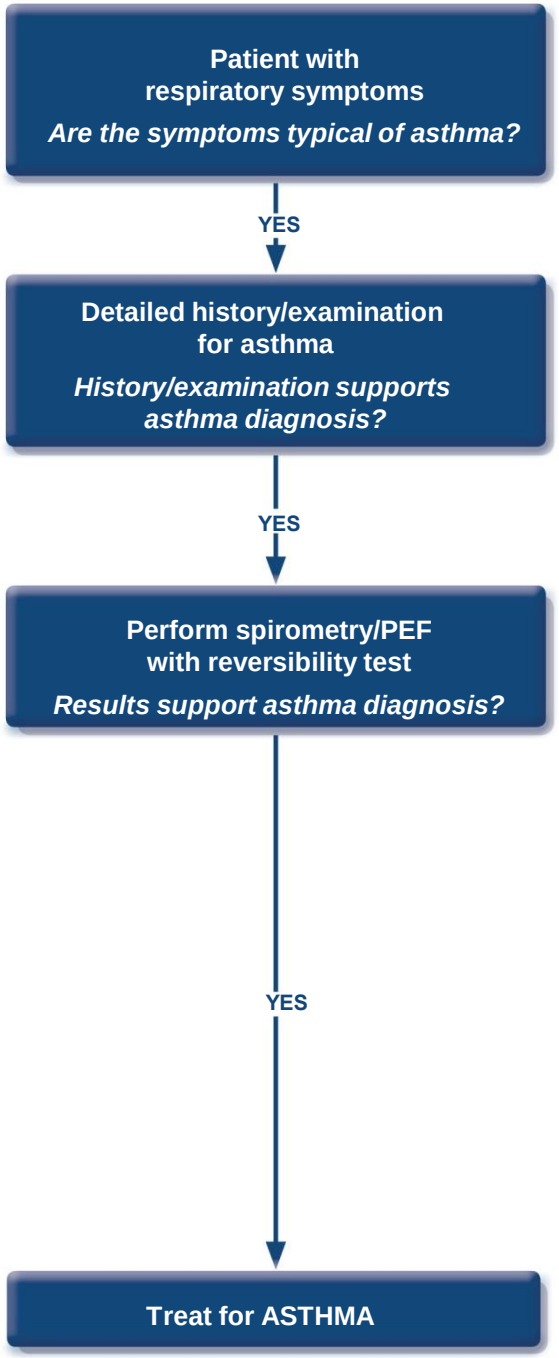




Challenge during the pandemic:

- Lock-down depending on the local/national status:
  - Not possible to have physical consultations.
  - Can see patients without symptoms of Covid 19, but with PPE (if available).

- What forms of electronic communication exists:
  - Telephone
  - SMS dialogue/messages/e-mail
  - Video consultations



During Covid 19 pandemic:

How to obtain a patient history?

How to assess patients clinically?

Objective tests, are they possible?

Is it safe to treat – then re-evaluate?

Diagnostic aids:

- Breathlessness:
  - Patient can count number of breaths pr minute.
  - mMRC: can be asked in all cases.

- PEF:
  - Cheap
  - Used to be what we had (…in the really old days)
  - Need to instruct patient, but can be done over video (maybe telephone)
  - Diary for 2 weeks.

- Spirometry:
  - Some hand held with mobile app.
  - Few based on mobile phone.
  - In office – need PPE and suitable space.

Diagnosis of asthma during the pandemic:

Mode of communication.	Patient history	Patients symptoms	Objective measurements	? Good enough
Telephone	Possible	Indirect evaluation: can hear breathlessness, cough. May use mMRC.	May use PEF meter	No

Treatment trial with re-evaluation:

- 4 weeks of anti-inflammatory treatment:
  - ICS and SABA prn, re-evaluate symptoms.
  - PEF or spirometry if possible.

- If in doubt or inconclusive may extend or repeat trial.

- Remember patient education, patients are great assets!

COMMON SYMPTOMS FOR ALLERGIES, COLD, FLU & COVID-19

SYMPTOMS	ALLERGIES	COLD	FLU	COVID-19	**Astma**
BODY ACHES	Rarely	√	√	√	Rarely
CHILLS	No	No	√	√	No
FEVER	No	Rarely	√	√	No
HEADACHE	Sometimes	Sometimes	√	Sometimes	No
NASAL CONGESTION	√	√	Sometimes	Rarely	No
RUNNY NOSE	√	√	Sometimes	Rarely	No
SNEEZING	√	√	Sometimes	Rarely	No
ITCHY/WATERY EYES	√	No	No	No	No
DRY COUGH	Sometimes	√	√	√	√
SHORTNESS OF BREATH	Sometimes	Sometimes	Sometimes	√	√
WHEEZING	Sometimes	Sometimes	Sometimes	Rarely	√
LOSS OF SMELL	Mild	Rarely	Rarely	√	No
SORE THROAT	Sometimes	√	√	Sometimes	No
NAUSEA, VOMITING, DIARRHEA	No	Sometimes	Sometimes	Sometimes	No

www.emersonhospital.org/articles/allergies-or-covid-19

Conclusion:

- Diagnosing asthma during the pandemic can be challenging.
- We must make use of the resources that are available in our context.
- **Remember; the pandemic will end and normality will return!**