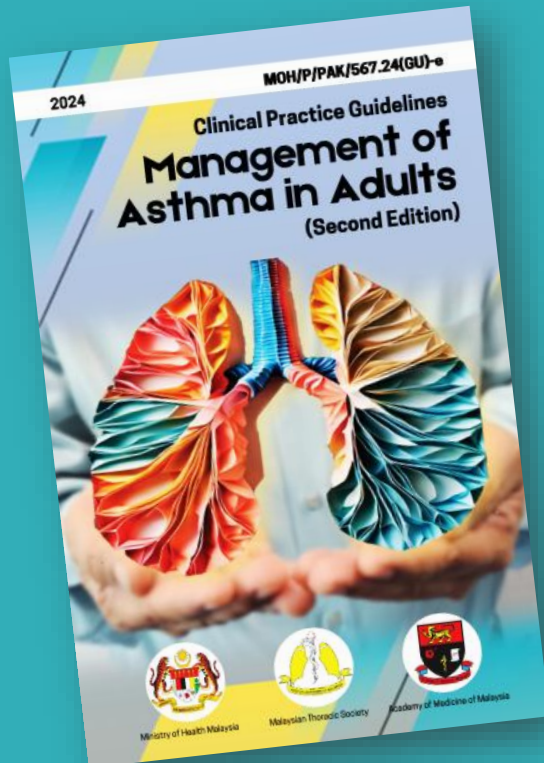


# TRAINING OF CORE TRAINERS ON CPG

## MANAGEMENT OF ASTHMA IN ADULTS (SECOND EDITION)



## LECTURE 2

### Treatment Goals & Optimising Treatment

**Dr Leong Swee Wei**  
Respiratory Physician  
Hospital Sultan Idris Shah Serdang



# Learning Objectives

- Understand the long-term goals of asthma treatment
- Assessing stable asthma
  - assessing asthma control
  - assessing future risk of exacerbation
  - assessing treatment related issues



# Asthma Treatment Goals

Achieve	Achieve optimal symptom control
Prevent	Prevent exacerbations and hospitalisations
Reduce	Reduce treatment-related side effects
Prevent	Prevent persistent airflow limitation
Lower	Lower asthma-related mortality
Include	Include patient's personal goals

# Treatment goal-Achieve



Training of Core Trainers on CPG  
Management of Asthma in Adults  
(Second Edition)

Pharmacological

Non-  
pharmacological



# Pharmacological Treatment

- **Maintenance therapy-to reduce inflammation:**
  - Inhaled corticosteroids (ICS)
  - ICS + LABA (long-acting  $\beta$ 2-agonists)
  - ICS + LABA + LAMA (triple therapy)
  - Add-on: LTRA, low-dose azithromycin, biologics (e.g. omalizumab)
- **Reliever therapy- to relieve symptoms:**
  - ICS-formoterol
  - SABA (short-acting  $\beta$ 2-agonists)

Treatment should be tailored to disease severity, the patient's preferences and response.

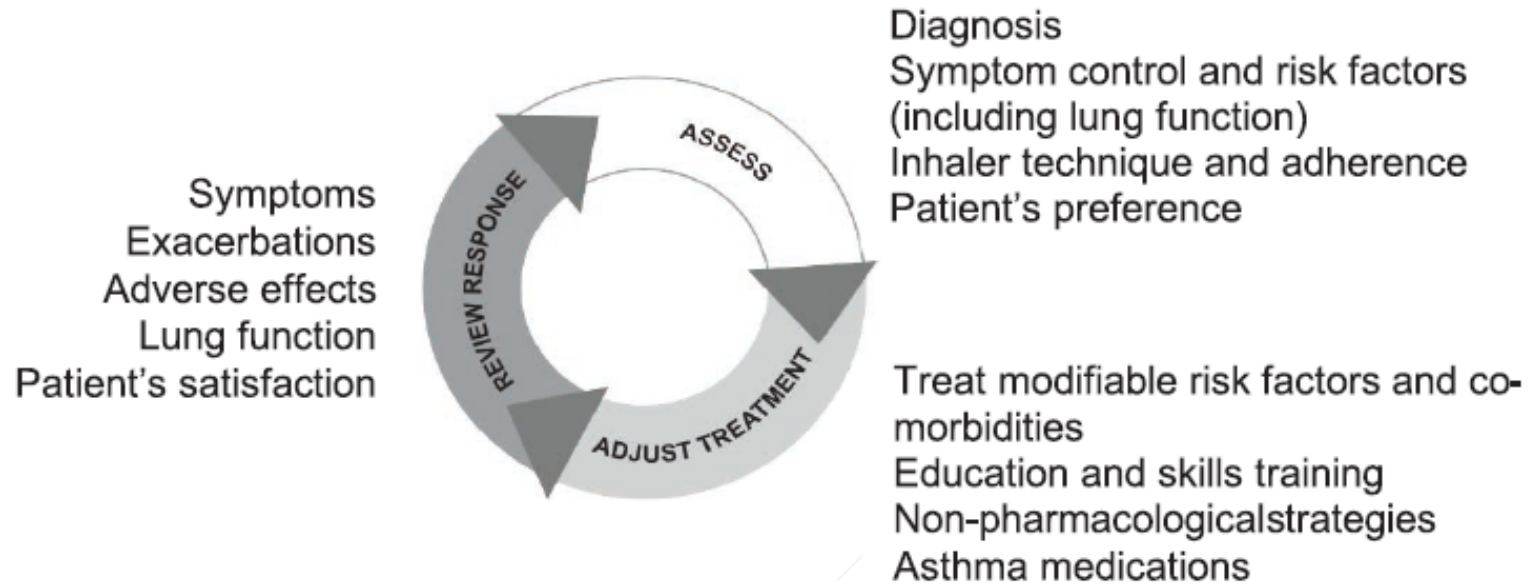


# Non-Pharmacological Interventions

- **Patient education and self-management**
  - Asthma Action Plan (AAP)
  - Guided self-monitoring (symptoms/PEFR)
- **Lifestyle modifications**
  - Smoking/vaping cessation
  - Weight reduction, physical activity and pulmonary rehabilitation
  - Allergen avoidance
  - Breathing exercises (e.g. yoga, diaphragm techniques)
  - Dietary modifications
  - Vitamin D supplementation (if deficient)
- **Skills training**
  - Inhaler technique education using teach-to-goal approach



# The Control-Based Management Cycle

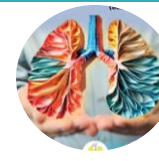


**Figure 2: The Control-based Asthma Management Cycle**

Continuous cycle:

- **Assess:** symptoms, lung function, adherence
- **Adjust:** treatment based on control
- **Review:** response and side effects

# Initial Assessment Prior to Treatment Initiation/Change

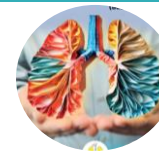


Training of Core Trainers on CPG  
Management of Asthma in Adults  
(Second Edition)

- Assess symptom control: Asthma Control Test (ACT), GINA or RCP symptom assessment
- Spirometry (FEV1)
- Inhaler technique
- Adherence review
- Risk of future exacerbations
- Comorbidities (e.g. rhinitis, GERD)



# Asthma Assessment



Training of Core Trainers on CPG  
Management of Asthma in Adults  
(Second Edition)

Assessment of asthma control (validated tools)

Identifying future exacerbation risk factors

Identify comorbidities

Check treatment related issues - adherence, inhaler technique, adverse events

# Assessment of Stable Asthma Severity



Training of Core Trainers on CPG  
Management of Asthma in Adults  
(Second Edition)

Categorised based on the level of treatment needed to control the symptoms<sup>1</sup>

## Mild asthma

- Well controlled asthma on low-intensity treatment e.g. low-dose ICS/formoterol PRN or maintenance low-dose ICS

## Moderate asthma

- Well controlled asthma on low or medium dose ICS-LABA

## Severe asthma

- Controlled asthma on high-dose ICS-LABA that worsens when high-dose treatment is reduced
- OR**
- Uncontrolled asthma despite adherence to maximal optimised high-dose ICS-LABA and management of contributory factors.

Should be performed at every medical review esp. before stepping-up or stepping-down

# Assessment of Asthma Control



Validated verified tools:

- Global Initiative for Asthma (GINA) Assessment
- Asthma Control Test (ACT)
- Asthma Control Questionnaire (ACQ)
- The Royal College of Physicians '3 Questions' (RCP 3)

Who fills it in?

- GINA Assessment - physicians
- ACT, ACQ and RCP3 – patient-reported tools

The choice of assessment tool should be the same at every medical review to ensure consistency in assessing asthma control.

# Assessment of Asthma Control – GINA Assessment



Training of Core Trainers on CPG  
Management of Asthma in Adults  
(Second Edition)

In the past <b>FOUR</b> weeks, has the patient had:	Yes	No	Well Controlled	Partly Controlled	Uncontrolled
Daytime asthma symptoms more than twice / week?			None of these	1-2 of these	3-4 of these
Any night waking due to asthma					
SABA reliever for symptoms more than twice / week?					
Any activity limitation due to asthma					

# Assessment Of Asthma Control – ACT Score



Training of Core Trainers on CPG  
Management of Asthma in Adults  
(Second Edition)

1.	<b>In the past 4 weeks, how much of the time did your asthma keep you from getting as much done at work, school or home?</b>					<b>Score</b>
	All of the time (1)	Most of the time (2)	Some of the time (3)	A little of the time (4)	None of the time (5)	
2.	<b>During the past 4 weeks, how often have you had shortness of breath?</b>					<b>Score</b>
	More than once a day (1)	Once a day (2)	3 to 6 times a week (3)	Once or twice a week (4)	Not at all (5)	
3.	<b>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?</b>					<b>Score</b>
	4 or more nights a week (1)	2 to 3 nights a week (2)	Once a week (3)	Once or twice (4)	Not at all (5)	
4.	<b>During the past 4 weeks, how often had you used your rescue inhaler or nebuliser?</b>					<b>Score</b>
	3 or more times per day (1)	1 or 2 times per day (2)	2 or 3 times per week (3)	Once a week or less (4)	Not at all (5)	
5.	<b>How would you rate your asthma control in the last 4 weeks?</b>					<b>Score</b>
	Not controlled at all (1)	Poorly controlled (2)	Somewhat controlled (3)	Well controlled (4)	Completely controlled (5)	

# Assessment Of Asthma Control – ACT Score



Training of Core Trainers on CPG  
Management of Asthma in Adults  
(Second Edition)

- Validated & preferred
- Translated to Malay, Mandarin & Tamil

ACT Score	Asthma Control
20 - 25	Well-controlled
16 - 19	Not well controlled
5 - 15	Very poorly controlled



# Assessment Of Asthma Control – ACQ Score



Training of Core Trainers on CPG  
Management of Asthma in Adults  
(Second Edition)

Asthma Control Questionnaire (ACQ) – 5 item (ACQ-5)

- Preferred due to its simplicity
- Assessed symptoms over one week:
  - Waking at night due to asthma
  - Waking in the morning with asthma symptoms
  - Activity limitation
  - Shortness of breath
  - Need for rescue inhaler use
- Each question has a score of 0-6
  - 0 no symptoms and 6 severe symptoms
- Final score is the average of 5 responses

ACQ Score	Asthma Control
< 0.75	Well-controlled
0.75 - 1.50	Very poorly controlled
>1.50	Not well controlled

# Assessment Of Asthma Control - RCP 3 Score



Training of Core Trainers on CPG  
Management of Asthma in Adults  
(Second Edition)

## Royal Collage Physician 3 Score

- Use as an initial screening tool
- 3 questions assessing - In the last month :
  - ☐ Have you had difficulty sleeping because of your asthma (including cough)?
  - ☐ Have you had your usual asthma symptoms during the day (cough, wheeze, chest tightness or breathlessness)?
  - ☐ Has your asthma interfered with your usual activities (e.g. housework, work, school, etc)?
- Any “Yes” to these questions indicates suboptimal asthma control



# Assessment Of Asthma Control - Utility



Training of Core Trainers on CPG  
Management of Asthma in Adults  
(Second Edition)

- Patients with well-controlled asthma for 3-6 months can be considered for step-down of treatment
- Other factors to assess before step-down :
  - FEV1 percentage predicted  $\geq 80\%$
  - Absence of asthma exacerbations in the last 12 months

# Assessment of Future Risk of Exacerbation



Training of Core Trainers on CPG  
Management of Asthma in Adults  
(Second Edition)



Previous hx of severe AEBA requiring CS or hospitalisation within past year



Overuse of SABA ( $\geq 3$  canisters per year)



Inadequate ICS use or not on ICS



Poor adherence to maintenance therapy



Incorrect inhaler technique



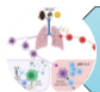
Current smoker, e-cigarette or vape user



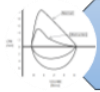
Comorbidities : obesity, GERD, CRS, confirmed food allergy



Pregnancy

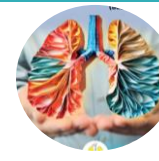


T2 markers : high FeNO, blood eosinophils



Lung function : low FEV1 esp  $< 60\%$  predicted, high BD responsiveness

- Screening for risk factors of future exacerbation should be conducted at EVERY medical review.
- Well controlled asthma can still have risk of exacerbations
- Identify modifiable risk factors and tailor treatment plan

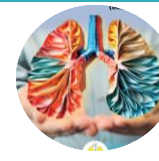


# Assessment Of Treatment Related Issues

## Adherence, Inhaler Techniques & Medication Adverse Effects

- Enhance patient's compliance by discussing treatment goals and preferences
- Evaluate inhaler techniques at every medical review - demonstrated by patients
- Listen to patient's feedback and experiences with inhalers, and address any issues that arise
- Identify local side effects of ICS – e.g. oral thrush, dysphonia
- FeNO :
  - Reduction of FeNO levels following ICS - monitor effectiveness of therapy and suppression of T2 inflammation
  - Persistent elevation of FeNO after initiation of ICS = poor adherence or inadequate ICS dosage

# TAKE HOME MESSAGES



- Asthma management is centred on controlling symptoms and preventing exacerbations.
- Assessment of stable asthma includes assessing asthma control (e.g. GINA or ACT) and risk of future exacerbation

# Thank You!!



**Training of Core Trainers on CPG**  
**Management of Asthma in Adults**  
**(Second Edition)**