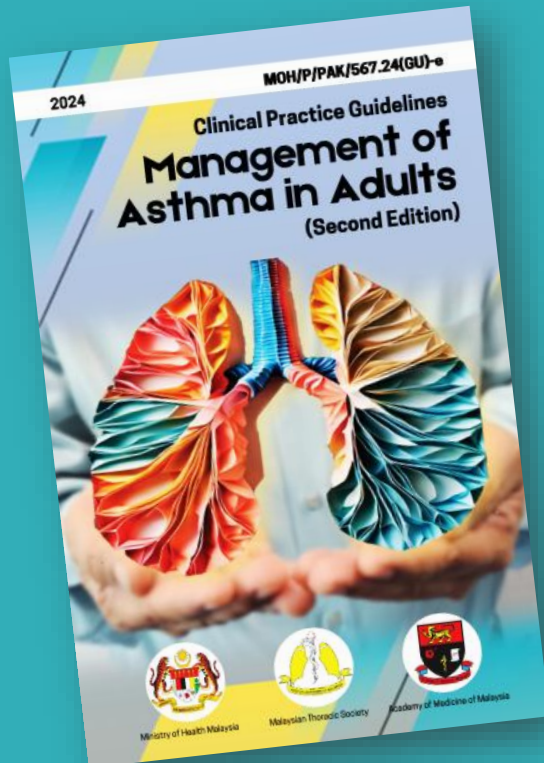


TRAINING OF CORE TRAINERS ON CPG

MANAGEMENT OF ASTHMA IN ADULTS (SECOND EDITION)



LECTURE 4

Patient Education & Skills Training

LeAnn Chong Li Yin

Pharmacist

Hospital Sultan Idris Shah Serdang



Learning Objectives

- 1 Understand the key components of effective patient education.
- 2 Skills training on effective use of inhaler devices.
- 3 Explore strategies for improving patient adherence.



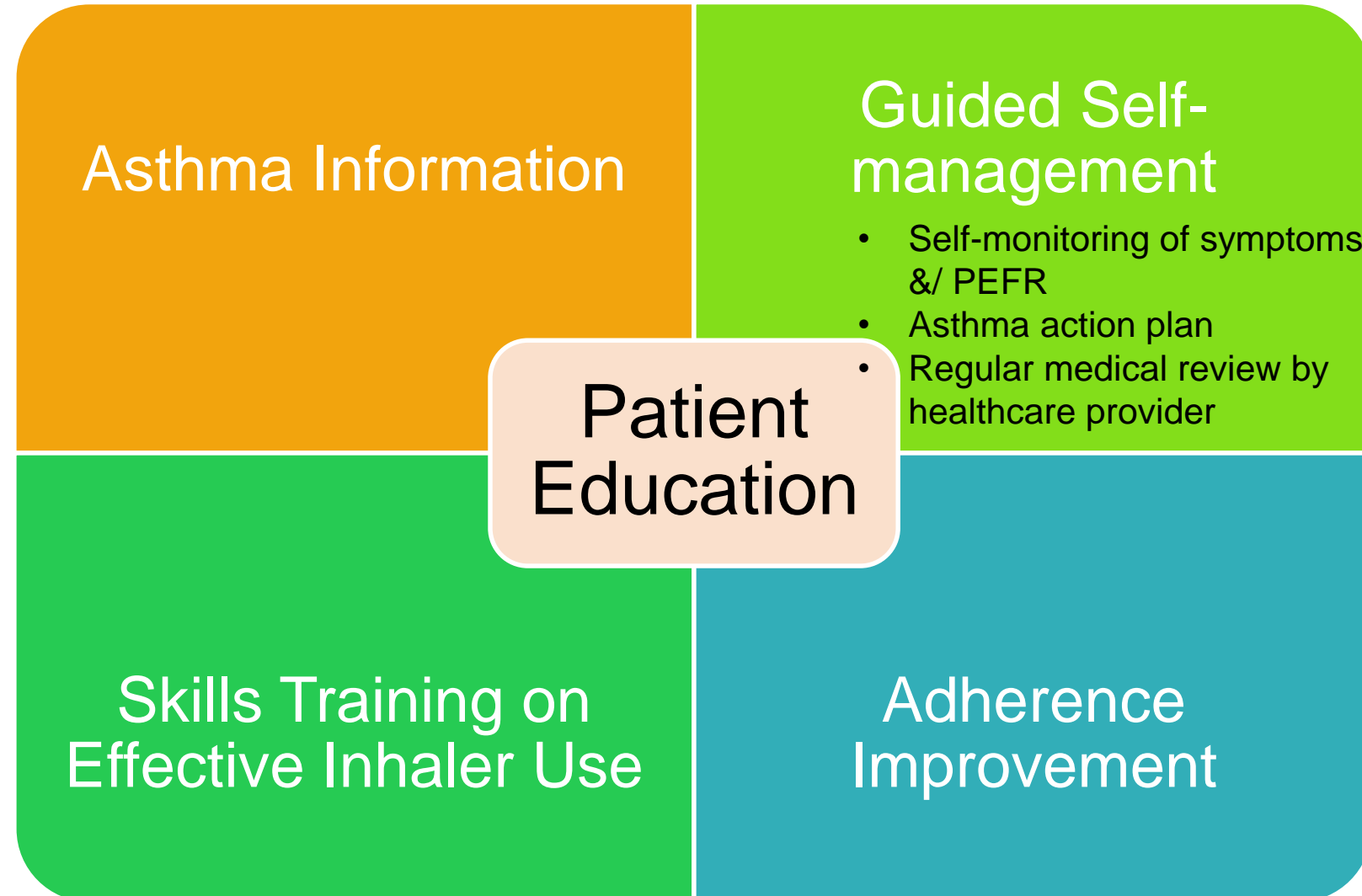
Main Goal of Patient Education

To provide patients and their family/other carers with **suitable information and training on asthma management** in partnership with their healthcare providers.

Components of Patient Education



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



Components of Patient Education

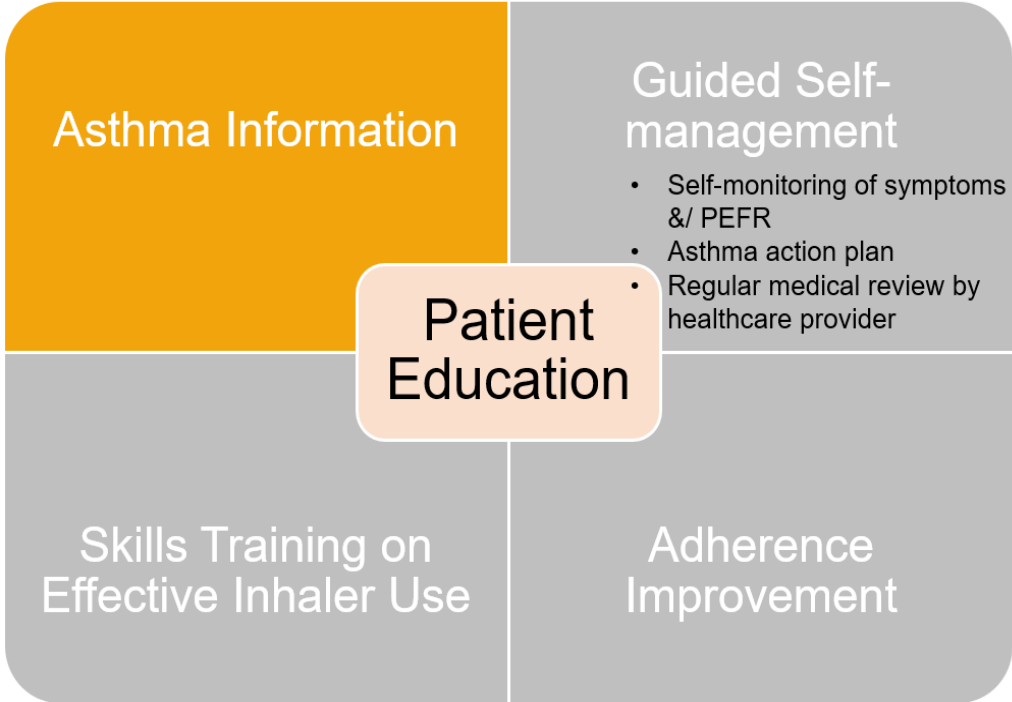
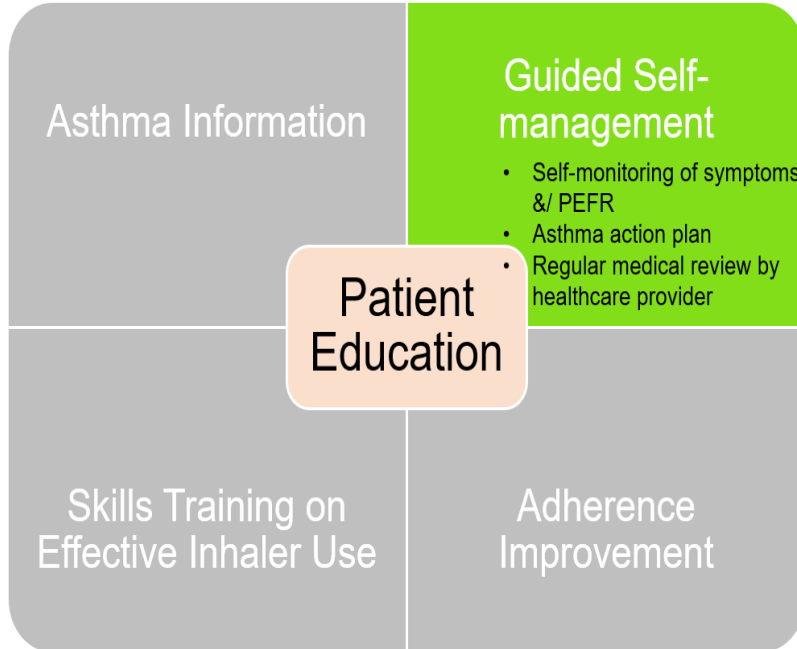


Table 4: Information to be Included in Asthma Education

Basic information about asthma
<ul style="list-style-type: none">• Pathophysiology and symptoms• Recognising early signs of exacerbation• Treatment goal• Identifying and avoidance of asthma triggers• Impact of co-morbidities on asthma control
Pharmacotherapy
<ul style="list-style-type: none">• The difference between reliever and maintenance• Dosages of medication• Information of inhalation devices and importance of correct inhaler technique• Possible drug adverse reactions
Non-pharmacotherapy
<ul style="list-style-type: none">• Smoking cessation• Allergen exposure• Vaccination• Weight reduction• Pulmonary rehabilitation• Physical activity• Yoga• Breathing exercise• Dietary modifications• Vitamin D
Importance of adherence behaviours
<ul style="list-style-type: none">• Medication adherence• Regular follow-up appointments

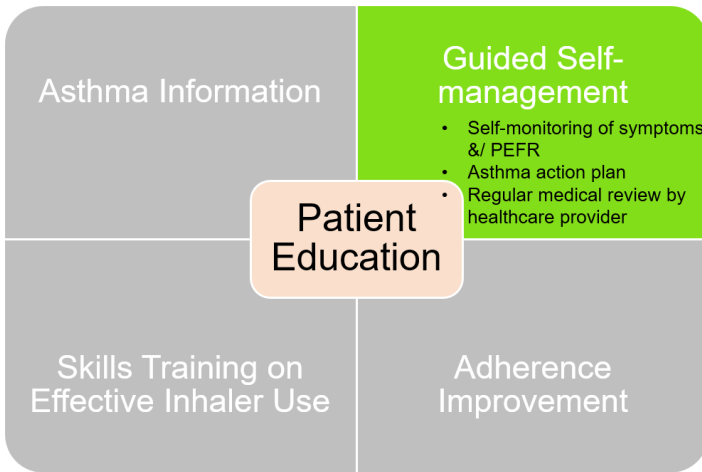
Components of Patient Education



Guided self-management is the active process by which healthcare providers guide and support patients to develop self-management competencies.

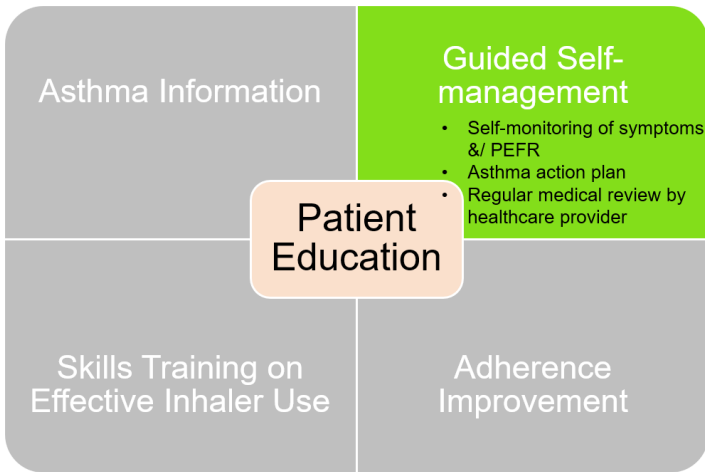
- It is essential for patients to understand their asthma, actively engage in shared decision-making and take charge of managing their condition.
- The components of guided asthma self-management include:
 - self-monitoring of symptoms and/or PEFR
 - AAP
 - regular medical review by healthcare providers

Components of Guided Self-Management



- **Self-monitoring of symptoms and/or PEFR** with regular medical review and an asthma action plan (AAP) reduces:
 - Emergency department (ED) visits and
 - Hospitalisation rates compared with usual care in asthma

Components of Guided Self-Management










- **Asthma action plan (AAP)** contains action (decision) points which guide patients in making short-term adjustments to their treatment based on their symptoms and/or PEFr.
- Individualised AAP based on PEFr is equivalent to the plan based on symptoms in hospitalisation and ED visit.

A. SUGGESTED ASTHMA ACTION PLAN TEMPLATE

Name:	Doctor:
IC. No.:	Hospital/Clinic:
Best PEF:	Date:

This asthma action plan helps you to recognise and respond to worsening asthma

ASTHMA CONTROL	RELIEVER	CONTROLLER
 WELL <ul style="list-style-type: none"> No cough, wheeze, chest tightness or shortness of breath AND Sleep well at night AND Able to perform usual activities OR <ul style="list-style-type: none"> PEFR: ____ to ____ l/min (80% to 100% of personal best) 	 Your reliever colour: _____ No need to use reliever except before exercise (if needed)	 Your controller colour: _____ Dose: ____ inhalations ____ times a day
 GETTING WORSE If you have ANY of these: <ul style="list-style-type: none"> Cough, wheeze, chest tightness or shortness of breath Waking up at night due to asthma symptoms Able to perform some, but not all usual activities OR <ul style="list-style-type: none"> PEFR: ____ to ____ l/min (50% to 79% of personal best) 	Take 2 to 4 inhalations every 20 minutes for a total 3 times and assess symptoms  <div style="display: inline-block; width: 45%;"> If symptoms or PEFR improve <ul style="list-style-type: none"> lengthen interval to every 3 – 4 hours as needed duration may be further lengthened based on continued good response </div> <div style="display: inline-block; width: 45%;">  If symptoms worsen or persist Proceed to ALERT management </div>	Dose: ____ inhalations ____ times a day
 ALERT If you have ANY of these: <ul style="list-style-type: none"> Worsening cough, wheeze, chest tightness or shortness of breath Difficulty walking or talking Need to use reliever more frequently than every 4 hours OR <ul style="list-style-type: none"> PEFR: Below ____ l/min (less than 50% of personal best) 	Proceed to nearest hospital or clinic or dial 999 IMMEDIATELY AND DURING TRANSFER <input type="checkbox"/> With spacer – increase dose up to 10 inhalations every 20 minutes <input type="checkbox"/> Without spacer – take 2 inhalations every 5 minutes	Dose: ____ inhalations ____ times a day






Note: The use of pMDI with spacer is encouraged



A. SUGGESTED ASTHMA ACTION PLAN TEMPLATE

Name:	Doctor:
IC. No.:	Hospital/Clinic:
Best PEF:	Date:

This asthma action plan helps you to recognise and respond to worsening asthma




ASTHMA CONTROL	RELIEVER	CONTROLLER
	Name:	Name:
 WELL <ul style="list-style-type: none"> No cough, wheeze, chest tightness or shortness of breath AND Sleep well at night AND Able to perform usual activities OR <ul style="list-style-type: none"> PEFR: ____ to ____ l/min (80% to 100% of personal best) 	 <p>Your reliever colour: _____</p> <p>No need to use reliever except before exercise (if needed)</p>	 <p>Your controller colour: _____</p> <p>Dose: ____ inhalations ____ times a day</p>
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 ALERT <p>If you have ANY of these:</p> <ul style="list-style-type: none"> Worsening cough, wheeze, chest tightness or shortness of breath Difficulty walking or talking Need to use reliever more frequently than every 4 hours OR <ul style="list-style-type: none"> PEFR: Below ____ l/min (less than 50% of personal best) 	<p>Proceed to nearest hospital or clinic or dial 999 IMMEDIATELY AND DURING TRANSFER</p> <p><input type="checkbox"/> With spacer – increase dose up to 10 inhalations every 20 minutes</p> <p><input type="checkbox"/> Without spacer – take 2 inhalations every 5 minutes</p>	<p>Dose: ____ inhalations ____ times a day</p>

Note: The use of pMDI with spacer is encouraged

B. SUGGESTED ASTHMA ACTION PLAN TEMPLATE – MART (MAINTENANCE-AND-RELIEVER THERAPY)

Name:	Doctor:
IC. No.:	Hospital/Clinic:
Best PEF:	Date:

This asthma action plan helps you to recognise and respond to worsening asthma








ASTHMA CONTROL	RELIEVER	CONTROLLER
	Name:	Name:
 WELL <ul style="list-style-type: none"> No cough, wheeze, chest tightness or shortness of breath AND Sleep well at night AND Able to perform usual activities OR <ul style="list-style-type: none"> PEFR: ____ to ____ l/min (80% to 100% of personal best) 	<p>No need to use reliever except before exercise (if needed)</p>	<p>Take ____ inhalations ____ times a day</p>
 GETTING WORSE <p>If you have ANY of these:</p> <ul style="list-style-type: none"> Cough, wheeze, chest tightness or shortness of breath Waking up at night due to asthma symptoms Able to perform some, but not all usual activities OR <ul style="list-style-type: none"> PEFR: ____ to ____ l/min (50% to 79% of personal best) 	<p>DON'T WAIT</p> <p>Take one inhalation as needed (Maximum 12 inhalations a day including controller dose)</p> <p>↓</p> <p>If symptoms worsen or persist Proceed to ALERT management</p>	<p>Take ____ inhalations ____ times a day</p>
 ALERT <p>If you have any of these:</p> <ul style="list-style-type: none"> Worsening symptoms (cough, wheeze, chest tightness or shortness of breath) OR Difficulty walking or talking Need to use reliever more than every 4 hours OR <ul style="list-style-type: none"> PEFR: Below ____ l/min (less than 50% of personal best) 	<p>Proceed to the nearest hospital or clinic or dial 999 IMMEDIATELY</p> <p>AND</p> <p>Take one inhalation every 1 to 3 minutes up to 6 inhalations (Maximum 12 inhalations a day including controller dose)</p>	<p>Take ____ inhalations ____ times a day</p>

Note: The use of pMDI with spacer is encouraged

A. SUGGESTED ASTHMA ACTION PLAN TEMPLATE

Name:	Doctor:
IC. No.:	Hospital/Clinic:
Best PEF:	Date:

This asthma action plan helps you to recognise and respond to worsening asthma

ASTHMA CONTROL	RELIEVER	CONTROLLER
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 ALERT If you have ANY of these: <ul style="list-style-type: none"> Worsening cough, wheeze, chest tightness or shortness of breath Difficulty walking or talking Need to use reliever more frequently than every 4 hours OR <ul style="list-style-type: none"> PEFR: Below ____ l/min (less than 50% of personal best) 	Proceed to nearest hospital or clinic or dial 999 IMMEDIATELY AND DURING TRANSFER <input type="checkbox"/> With spacer – increase dose up to 10 inhalations every 20 minutes <input type="checkbox"/> Without spacer – take 2 inhalations every 5 minutes	Dose: ____ inhalations ____ times a day

Note: The use of pMDI with spacer is encouraged



Increase ICS dose during early attack?



Increase ICS Dose During Early Attack?

- Inconsistent evidence (compared to stable dose).

McKeever et al. 2018 (RCT)¹

Temporarily increasing ICS dose by four-fold prolonged the time to a first severe exacerbation with HR of 0.81.

Kew et al. 2022 (Meta analysis)²

No differences in treatment outcome (treatment failure, unscheduled physician visit, acute care, ED visit or hospital admission).

Increasing the dose of ICS does not benefit all patients during exacerbation. Patients are advised to seek further medical assistance if symptoms persist despite following the AAP

1. McKeever et al. N Engl J Med. 2018;378(10):902-10

2. Kew et al. Cochrane Database Syst Rev. 2022;9(9):CD007524;



Behaviour change techniques (BCTs) are methods used to facilitate the adoption of new desirable behaviours or the cessation of undesirable ones by targeting various psychological, social and environmental factors.

BCTs can range from:

- Providing information and education
 - Using rewards or incentives
 - Goal-setting
 - Social support
- Cognitive-behavioural strategies

How to Implement Guided Self-Management



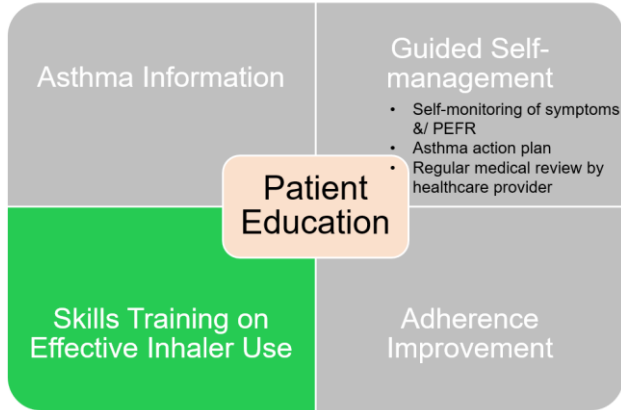
Training of Core Trainers on CPG
Management of Asthma in Adults
(Second Edition)

Behaviour change techniques (BCTs) are methods used to facilitate the adoption of new desirable behaviours or the cessation of undesirable ones by targeting various psychological, social and environmental factors.

BCTs can range from:

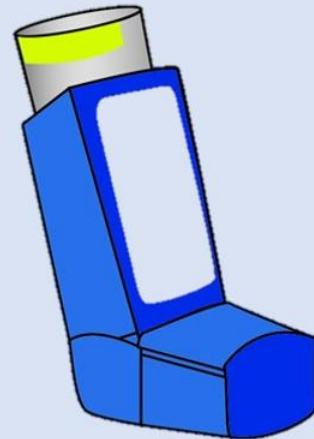
- Providing information and education
 - Using rewards or incentives
 - Goal-setting
 - Social support
 - Cognitive-behavioural strategies
-
- **Low-intensity BCTs (≤ 1 per month) delivered by healthcare providers** reduce hospitalizations and ED visits, compared to usual care.

Components of Guided Self-Management

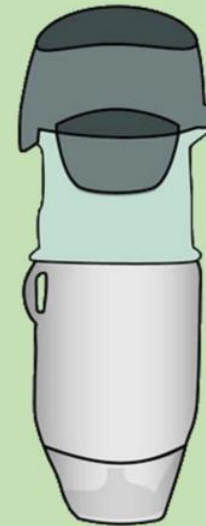


Skills Training on Effective Inhaler Use

- Pressurized Metered dose inhaler (pMDI)



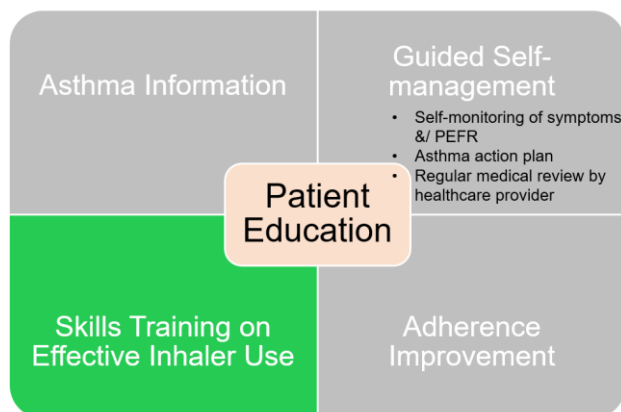
- Soft Mist Inhaler (SMI)



- Dry powder inhaler (DPI)

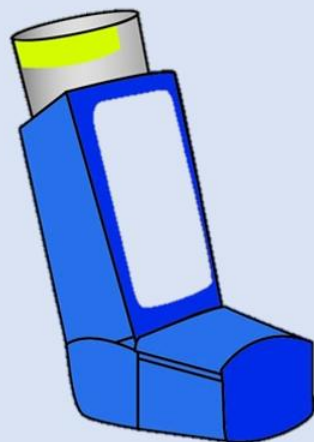


Components of Guided Self-Management

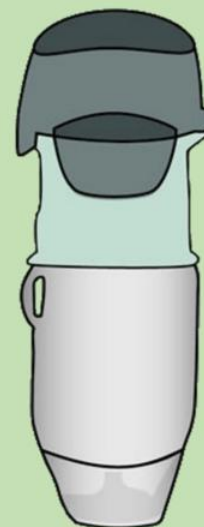


Skills Training on Effective Inhaler Use

- Pressurized Metered dose inhaler (pMDI)



- Soft Mist Inhaler (SMI)

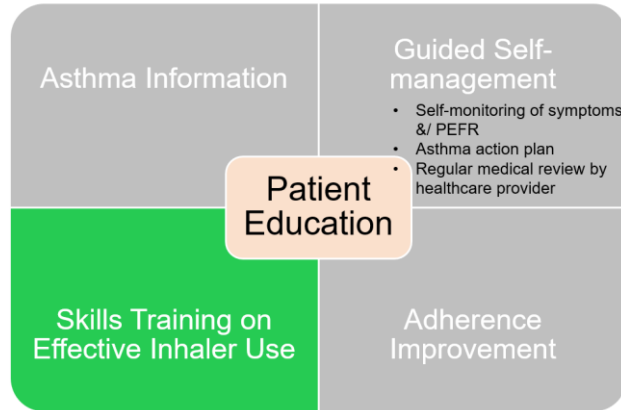


- Dry powder inhaler (DPI)

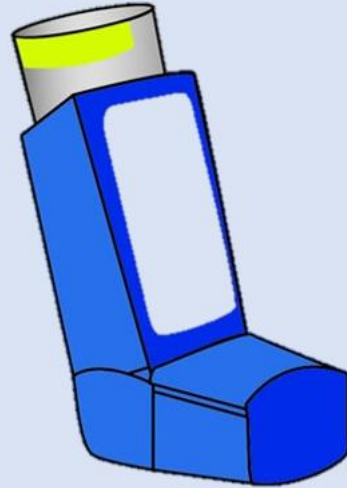


Improper use can lead to inadequate medication delivery, resulting in poor asthma control and an increased risk of exacerbations

Components of Guided Self-Management



- Pressurized Metered dose inhaler (pMDI)

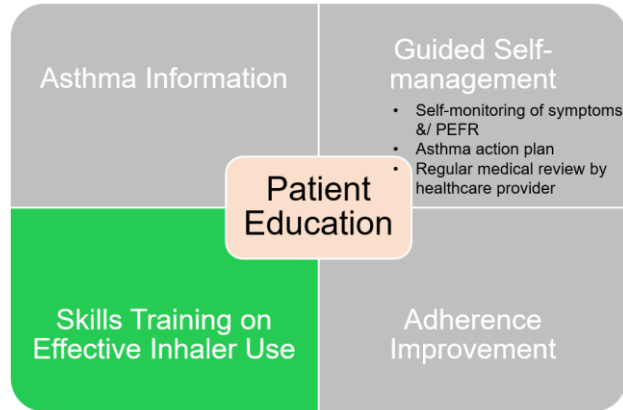


Errors associated with uncontrolled asthma

- Actuation before inhalation
- Incorrect preparation of the second dose inhalation
- Exhaling into the inhaler device
- Not holding the device upright



Components of Guided Self-Management

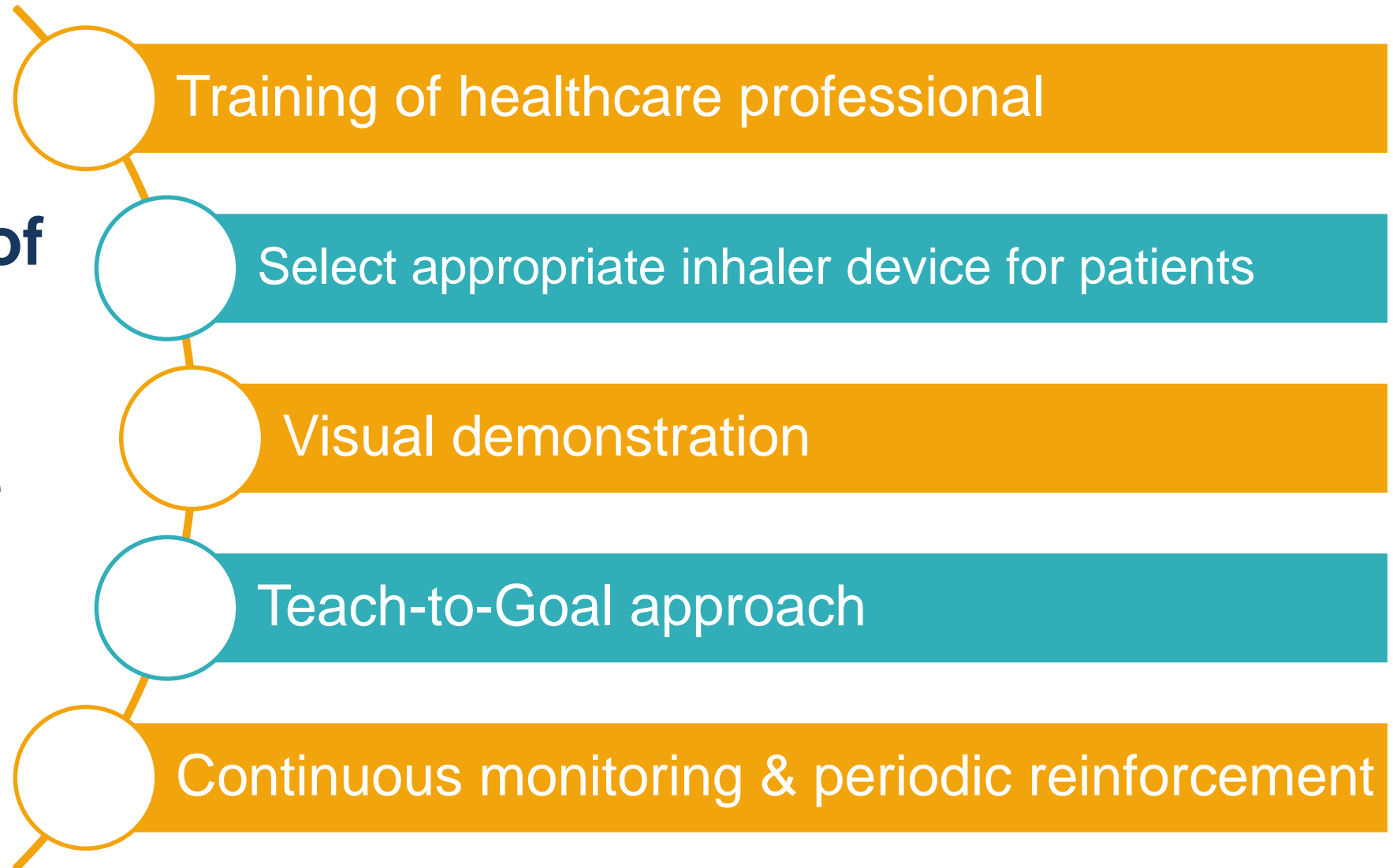


Errors associated with uncontrolled asthma & exacerbation

- Insufficient inspiratory effort



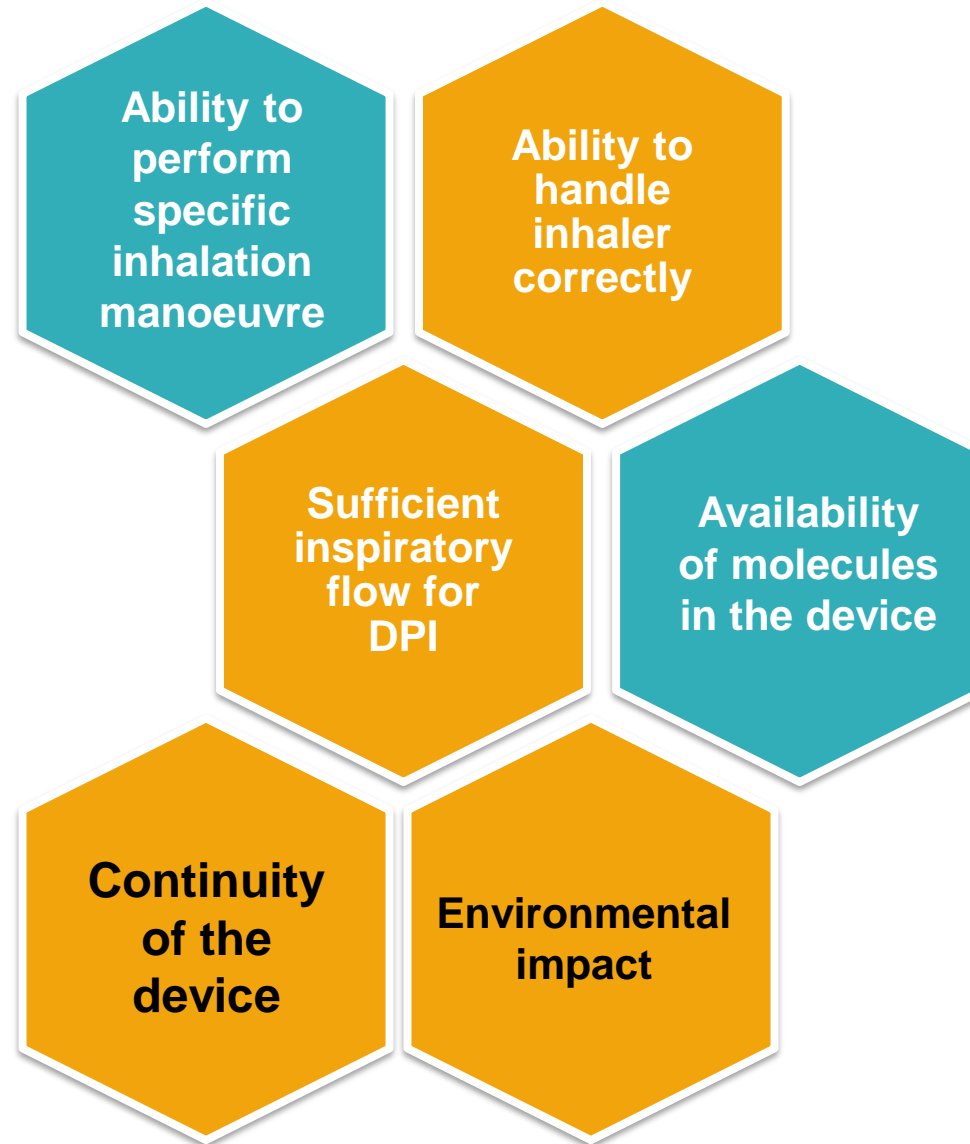
Principles of effective inhaler technique education



SELECTING AN INHALER FOR A PATIENT



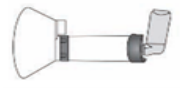



Training of Core Trainers on CPG
Management of Asthma in Adults
(Second Edition)

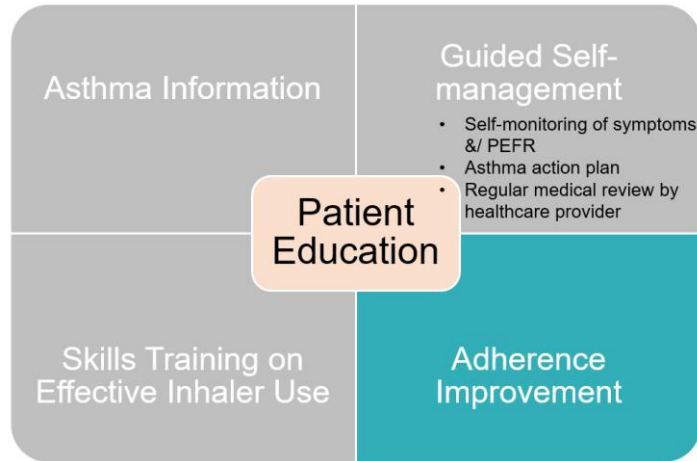


INHALER DEVICES AND TECHNIQUES

- Inhaler techniques must be checked and corrected, if necessary, at every single opportunity.
- Ensure no foreign object in the mouthpiece and the inhaler is not empty or expired.

	pMDI	pMDI AND SPACER (VHC)***	RESPIMAT®
		  <div style="display: flex; justify-content: space-around; margin-top: 5px;"> Mouthpiece Facemask </div>	
PRIMING	Remove cap, shake inhaler well* and release several puffs** into air.	As per pMDI. Pre-wash is not necessary for antistatic spacer. However, non-antistatic spacer needs to be pre-washed (soak) with diluted mild detergent (do not rinse) and air-dried before first use to reduce electrostatic charge. Wipe mouthpiece before use.	Install cartridge. Hold inhaler upright with cap closed. Twist clear base in the direction of arrow until it “clicks”. Open cap. Point mouthpiece towards ground. Press dose release button. Close cap and repeat above steps until a cloud is visible. Then repeat these steps three more times.
WHEN TO PRIME	<ul style="list-style-type: none"> • Before first-time use • When not used for 5 – 7 days 	<ul style="list-style-type: none"> • Before first-time use • When not used for 5 – 7 days 	<ul style="list-style-type: none"> • Before first-time use • When not used for 21 days • When not used for 7 days, release 1 puff
INHALATION TECHNIQUE	1. Remove cap and hold pMDI in an upright position. Shake pMDI well*.	1. Remove pMDI cap and spacer's mouthpiece cap (if any). Shake pMDI well*. Insert pMDI upright into back of spacer.	1. (Dose loading) Hold inhaler upright with cap closed. Twist clear base in the direction of arrow until it “clicks”. Open cap.
		2. Sit upright or stand in an erect position.	
		3. Exhale slowly and fully (away from inhaler).	
		4. Slightly tilt chin up.	
	5. Place pMDI mouthpiece gently between teeth (without biting) to ensure a tight lip seal around mouthpiece.	5a. Spacer with mouthpiece: Place mouthpiece gently between teeth (without biting). Ensure a tight lip seal around mouthpiece. 5b. Spacer with facemask: Apply mask to face and ensure an effective seal over mouth and nose.	5. Place mouthpiece gently between teeth (without biting) to ensure a tight lip seal around mouthpiece. Do not cover air vent.

Components of Guided Self-Management



- Patient-reported outcome instruments (PROs) are simple, timely and inexpensive tools that can be used in clinical practice.
- PROs that have been validated to assess adherence to inhaled maintenance medications in adults with asthma include:
 - Test of Adherence to Inhalers (TAI)
 - Medication Adherence Report Scale for Asthma
 - Adherence Questionnaire

TEST OF ADHERENCE TO INHALERS (TAI)

SOALAN UJIAN PEMATUHAN ALAT SEDUT (TAI)

1. Berapa kalikah anda lupa mengambil alat sedut anda dalam tempoh 7 hari yang lalu?

Semua	1	Lebih daripada separuh	2	Lebih kurang separuh	3	Kurang daripada separuh	4	Tiada	5	Jumlah	
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2. Anda lupa mengambil alat sedut anda:

Selalu	1	Hampir selalu	2	Kadang-kadang	3	Hampir tidak pernah	4	Tidak pernah	5	Jumlah	
--------	---	---------------	---	---------------	---	---------------------	---	--------------	---	--------	--

3. Apabila berasa sihat, anda berhenti mengambil alat sedut anda:

Selalu	1	Hampir selalu	2	Kadang-kadang	3	Hampir tidak pernah	4	Tidak pernah	5	Jumlah	
--------	---	---------------	---	---------------	---	---------------------	---	--------------	---	--------	--

4. Pada hujung minggu atau apabila pergi bercuti, anda berhenti mengambil alat sedut anda:

Selalu	1	Hampir selalu	2	Kadang-kadang	3	Hampir tidak pernah	4	Tidak pernah	5	Jumlah	
--------	---	---------------	---	---------------	---	---------------------	---	--------------	---	--------	--

5. Apabila berasa resah atau sedih, anda berhenti mengambil alat sedut anda:

Selalu	1	Hampir selalu	2	Kadang-kadang	3	Hampir tidak pernah	4	Tidak pernah	5	Jumlah	
--------	---	---------------	---	---------------	---	---------------------	---	--------------	---	--------	--

6. Anda berhenti mengambil alat sedut anda kerana bimbang akan kemungkinan kesan sampingan:

Selalu	1	Hampir selalu	2	Kadang-kadang	3	Hampir tidak pernah	4	Tidak pernah	5	Jumlah	
--------	---	---------------	---	---------------	---	---------------------	---	--------------	---	--------	--

7. Anda berhenti mengambil alat sedut anda kerana percaya bahawa alat ini kurang membantu merawat penyakit anda:

Selalu	1	Hampir selalu	2	Kadang-kadang	3	Hampir tidak pernah	4	Tidak pernah	5	Jumlah	
--------	---	---------------	---	---------------	---	---------------------	---	--------------	---	--------	--

8. Anda mengambil sedutan kurang daripada yang dipreskripsikan oleh doktor:

Selalu	1	Hampir selalu	2	Kadang-kadang	3	Hampir tidak pernah	4	Tidak pernah	5	Jumlah	
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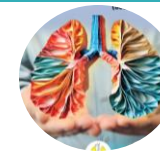
9. Anda berhenti mengambil alat sedut anda kerana percaya bahawa pengambilannya mengganggu aktiviti harian atau kerja anda:

Selalu	1	Hampir selalu	2	Kadang-kadang	3	Hampir tidak pernah	4	Tidak pernah	5	Jumlah	
--------	---	---------------	---	---------------	---	---------------------	---	--------------	---	--------	--

10. Anda berhenti mengambil alat sedut anda kerana tidak mampu membayarnya:

Selalu	1	Hampir selalu	2	Kadang-kadang	3	Hampir tidak pernah	4	Tidak pernah	5	Jumlah	
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Source: Muneswarao J, Hassali MA, Ibrahim B, et al. Translation and validation of the Test of Adherence to Inhalers (TAI) questionnaire among adult patients with asthma in Malaysia. J Asthma. 2021;58(9):1229-36.



10-item
TAI

Level of adherence

SCORE

INTERPRETATION

= 50 points



Good adherence

46 to 49 points



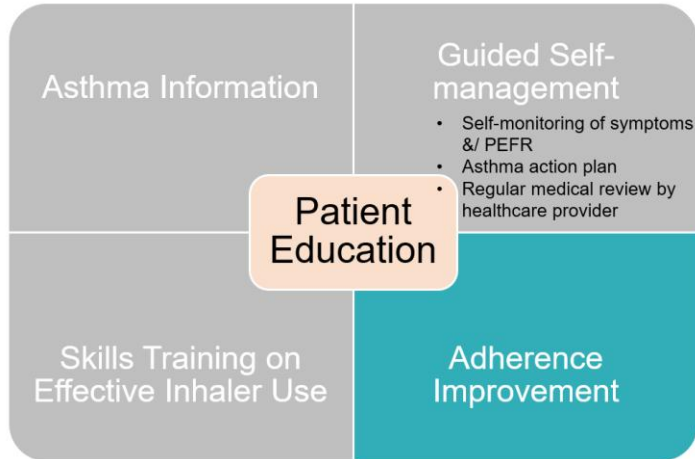
Intermediate adherence

≤ 45 points



Poor adherence

Components of Guided Self-Management



- Besides PRO, records on prescribed medications from electronic health records can also be used to indirectly estimate adherence.
- Two of the most widely used adherence measures are the
 - **medication possession ratio**
 - **proportion of days covered.**

Types of Non-adherence



Erratic

Caused by forgetfulness, e.g., due to a disorganized or busy lifestyle.

Unwitting

Patients who do not understand or unintentionally misapply the medication instructions, this includes not understanding the regimen or a poor inhaler technique.

Intelligent

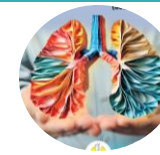
Patients intentionally not taking their medication as prescribed for reasons including the fear of side-effects, not feeling sick or high costs.

Erratic



Types on non-adherence	Adherence improvement strategies
Erratic	Reminders and/or counselling <ul style="list-style-type: none">• Caregiver support• Link to daily habits (e.g. brushing teeth)• Use daily reminders (e.g. alarm clock, text/audio/visual messages, smart inhaler)• Use motivational strategies to encourage continuous use to remain symptoms control• Discuss causes and frequency of anxiety (disease-related or not) and, counselling on coping strategies

Unwitting



Unwitting

Medication plan

- Simplify medication regimen (frequency or number of devices)
- Provide personalised AAP
- Caregiver support – educating the caregivers on correct medication use

Inhaler technique education

- Provide written or visual inhaler instructions for home use
- Physical and/or video demonstration with TTG approach

Intelligent



Intelligent	Education and/or counselling <ul style="list-style-type: none">• Counselling on likelihood, severity and prevention of possible side effects• Educate on the chronic nature of the disease and long-term benefits of maintenance treatment• Apply motivational strategies for setting goals and managing expectations• Emphasise importance of following prescribed regimen for continuous effectiveness of medication• Educate on positive impact of medication use on daily life and work.• Engage in shared decision-making when selecting an inhaler
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Who Can Provide Patient Education



- Asthma education can be provided by any healthcare providers, including pharmacists and nurses.

Respiratory Medication Therapy Adherence Clinic (RMTAC)

- Conducted by pharmacists in collaboration with other healthcare providers.
- Providing education, monitoring adherence and resolving medication related problems

**Achieved
Better
controlled
asthma**

**Majority
mastered
good inhaler
technique**

TAKE HOME MESSAGES



Key components of patient education should include:

- **Asthma information:** on disease, pharmacotherapy, non-pharmacotherapy & importance of adherence behaviors.
- **Guided self-management:**
 - Self-monitoring of symptoms and/or PEFr with regular medical review and an AAP is effective.
 - Behavioural change techniques (eg. providing information, goal setting) should be considered in self self-management strategy of asthma.
- **Skills training on effective inhaler use:**

Involved visual demonstration using the Teach-to-Goal approach, continuous monitoring and periodic reinforcement by a trained healthcare professional.
- **Adherence improvement involves** assessment using PRO or refill records and formulating an intervention based on types of non-adherence (erratic, unwitting and intelligent).

Thank You!!



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