National Programme on Climate Change and Human Health

Guidance note

on

Provision of services

for

Air Pollution-Related Illnesses

through

Chest Clinic

November 2025

National Programme on Climate Change and Human Health

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Purpose

The purpose of the Chest clinic is:

1. **Screening and risk communication** for air pollution-related illnesses
2. Among patients **establish possible causes (including Air Pollution) and confirm diagnosis**
3. **Provide standard care** to patients suffering from air pollution related illnesses.
4. **Promote behaviour change and adoption of healthy practices** to potential and diagnosed cases of air pollution-related illnesses.

Setting up a Chest Clinic

Chest Clinic may be established **at District hospitals, and Medical Colleges in urban areas**, covering all such facilities in NCAP cities initially. (reference: Pollution Control Board data). **During the peak air pollution months (usually from October to February), the clinics may be organised daily for a fixed duration.**

Screening of Patients for Risk Factors

Individuals and patients maybe exposed to air pollution from different sources based on their place of residence, occupation and personal habits (Annexure I- Potential Sources of Air Pollution). Under the guidance of Medical Officer/Specialist, the staff nurse posted in the clinic may be given the responsibility for screening the patients to ascertain risk factors using a standard proforma (Annexure II- Screening tool for Air Pollution). A register of individuals identified as being at high risk is to be maintained, and details of the high-risk individuals may also be shared with the respective blocks for community-based follow-up through ASHA, ANM, and CHO (Annexure II- Format 1).

Confirmation of diagnosis and provision of care

Based on the clinical evaluation (including history, examination, and evaluation), a diagnosis may be arrived at and recorded utilising ICD Code in the Chest Clinic register (Annexure III- Format 2). **ICD Code for documenting Air Pollution exposure is important and is provided in the annexure.** Provision of standard care may be initiated on an outpatient basis or in the casualty/emergency/ward/ICU as per need. The Standard Treatment workflow by ICMR (2019) may be used for the same (Annexure VI).

Follow-up and Continuum of Care

The patient and at-risk individuals may be linked to their respective AAM, PHC, and CHC for continuation of medications and follow-up. For stable patients, a follow-up at the Chest Clinic may be scheduled once a quarter or once in six months, as decided by the treating physician.

Record maintenance and reporting

All the aforementioned formats need to be maintained by the Staff nurse under the overall supervision of the Chest Physician/Physician/GDMO. A summary of the collated data has been to submitted daily to the District Nodal Officer's office. District Nodal Officer's should compile the reports from all the Chest Clinics in the districts and share the report with State Nodal Officer-NPCCHH.

Linkage with other programmes/services

The Chest clinic can be combined with the NCD Clinic, operated under the NP-NCD. In the presence of specific risk factors, bi-directional referral is encouraged between the Chest Clinic, Tobacco Cessation clinics, and the TB Unit.

Unit costs for drugs/equipment

Unit costs for the drugs and equipment will be similar to the MoHFW and State government norms.

Annexures

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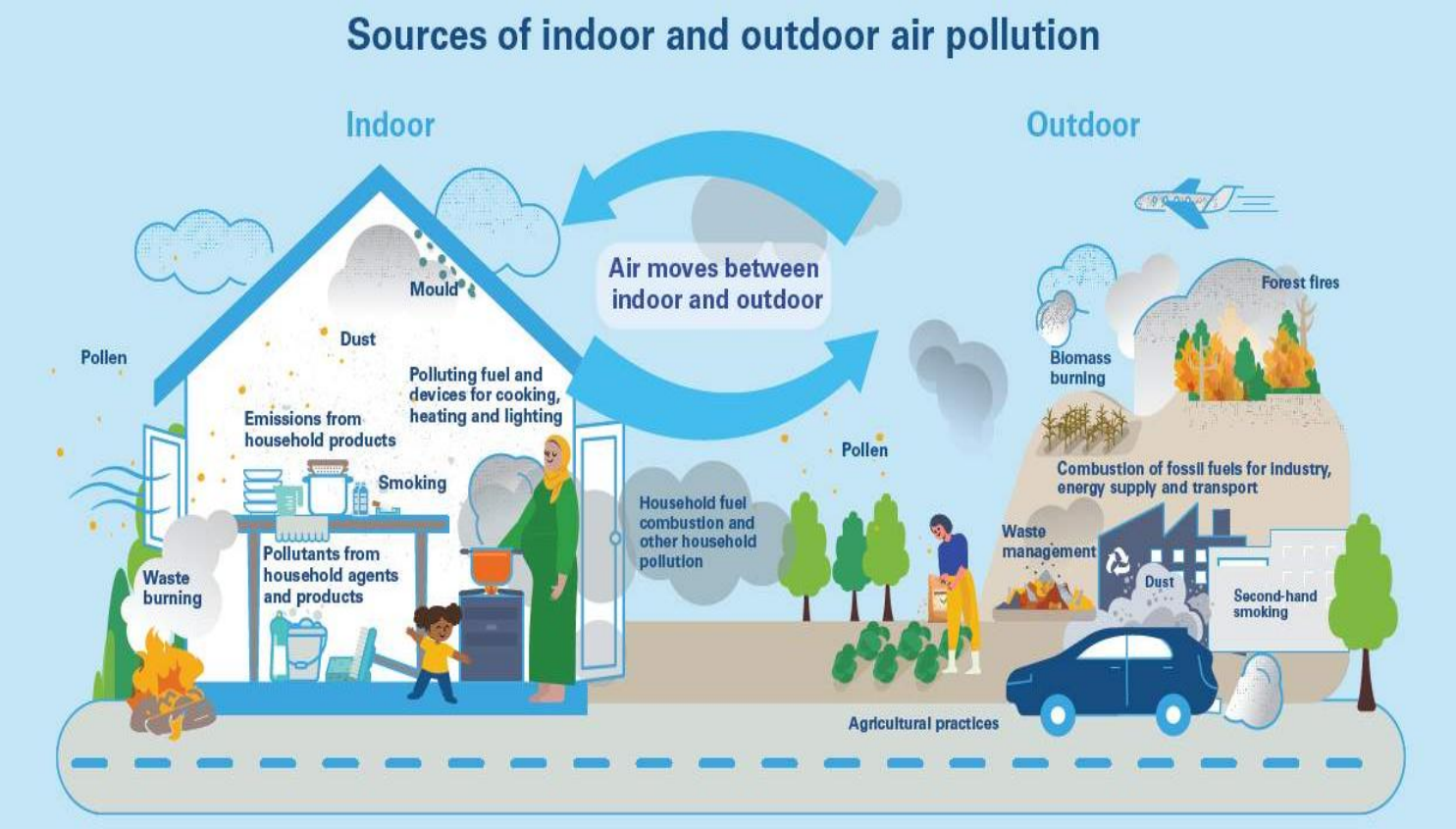
I. Potential Sources of Air Pollution



Source- Introduction to Children's Environmental Health by UNICEF and WHO (available on Agora)

II. ICD Code for documenting Air Pollution exposure

Condition	ICD version	ICD Code
Asymptomatic with exposure to air pollution (Description- Asymptomatic case with Contact with and (suspected) exposure to air pollution)	10	Z77.110
Symptomatic with exposure to air pollution (Description- Symptomatic with suspected or confirmed Exposure to air pollution)	10	Z58.1
Problems associated with exposure to Air Pollution	11	QD 70.1

For further information on use of ICD Code, refer to WHO's Classification of diseases (https://www.who.int/classifications/classification-of-diseases)

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III. Format 1- Standard Questionnaire for screening patients for exposure to Air Pollution:

Name of Individual/Patient:_____ Gender: Male/Female Age: ____
Address: _____ City: _____
District: _____

1	Habit of Smoking	○ Never ○ In the past ○ Sometimes ○ Daily ○ Second Hand
2	Type of Fuel used for cooking/heating	Firewood/ Crop Residue/ Cow Dung Cake/ Coal/ Kerosene/ LPG/ Electric/ Solar
3	Indoor pollutants (incense, mosquito coils) used in the home/school/workplace?	○ Yes ○ No
4	Lack of proper ventilation at place of residence/study/work	○ Yes ○ No
5	Occupational Exposure	○ Crop Residue burning ○ Mining/Smelter ○ Burning of Garbage- leaves ○ Traffic Police ○ Brick kiln workers ○ Glass factory worker ○ Construction workers ○ Manufacturing
6	Exposure at the place of residence/study or at work due to	○ Affected By Forest Fires ○ Has Frequent Dust Storms ○ Has Thermal Power Plants ○ Heavy Industries ○ Landfills ○ Unpaved Roads/Major Road/Highway ○ Known For Poor Air Quality or Frequent Smog
7	Family history of Cardio-pulmonary conditions	○ Yes ○ No
8	Protective behaviours 1. Do you monitor/follow updates on Air quality through an app/website 2. Do you avoid outdoor activities during poor air quality 3. Do you use N95 or equivalent masks during high pollution periods	○ Yes/ No ○ Yes/ No ○ Yes/ No

9	Provisional/Confirmed Diagnosis	
10	ICD Code of provisional/confirmed diagnosis	
11	ICD 10/11 code applicable for exposure to air pollution (circle appropriate)	○ Z77.110: **Asymptomatic** with exposure to air pollution ○ Z58.1: **Symptomatic** with exposure to air pollution ○ QD 70.1: Problem associated with exposure to air pollution ○ None
12	Risk Counselling provided by Doctor	○ Yes/ No
13	Referred for Risk Counselling to counselling cell	○ Yes/ No

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V. Format 2- Line list of individuals accessing services

(to be maintained as a register at Facility Level)

Name of the Hospital: _____ Date: _____

City: _____ District: _____ State: _____

Sl. No	Name of Individual/Patient and Phone #	Age	Gender	Village	Block	ICD Code for Provisional/confirmed diagnosis	ICD code for exposure to Air Pollution
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
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20							

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VI. Format 3- Facility level Summary reporting (Daily)

From October to February, this is to be sent to District Nodal Officer, NPCCHH daily by 5pm.

Name of the Hospital: Date:

Type of Facility: DH/Medical College/Others (Specify):

City: District: State:

	Paediatric		Adult		Total
	M	F	M	F	
No. of patients visited Chest Clinic today:					
Cumulative no. of patients (both old and new) visited Chest Clinic (in current FY)					
No. of patients with history of exposure to Air Pollution (today)					
Cumulative no. of patients with history of exposure to Air Pollution (in current FY)					
No. of patients today visited with history of exposure to air pollution admitted for treatment					
Cumulative no. of patients with history of exposure to air pollution admitted to treatment (in current FY)					
No. of patients provided risk-based counselling to reduce exposure					
Cumulative no. of patients provided risk-based counselling (in current FY)					

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VII. Format 4: District and State level reporting format for Chest Clinic (Daily)

Date: _____

Name of District: _____ Name of State: _____

Name of District Nodal Officer: _____

Sl. No	Particular	#
1.	No. of Chest Clinics Functional in the District	
2	No. of patients visited Chest Clinics today:	
3	Cumulative no. of patients (both old and new) visited Chest Clinic (in current FY)	
4	No. of patients with history of exposure to Air Pollution (today)	
5	Cumulative no. of patients with history of exposure to Air Pollution (in current FY)	
6	No. of patients today visited with history of exposure to air pollution admitted for treatment	
7	Cumulative no. of patients with history of exposure to air pollution admitted to treatment (in current FY)	
8	No. of patients provided risk-based counselling to reduce exposure	
9	Cumulative no. of patients provided risk-based counselling (in current FY)	
10	Remarks if any	

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VIII. Indicative list of Drugs required in the Chest clinic.

1. **Bronchodilators-** Salbutamol (inhaler, syrup, tablet), Ipratropium Bromide (Inhaler)
2. **Inhaled/Systemic Steroids-** Budesonide (Inhaler), Prednisolone (Tablet/Syrup), Hydrocortisone (Injection), Dexamethasone (Tab/Inj)
3. **Antihistaminic-** Levocetirizine (Tab/Syp), Pheniramine (Inj)
4. **Antibiotics-** Amoxicillin-Clavulanate, Azithromycin, Levofloxacin, Anti-TB Drugs,
5. **Hypoxia management**- Oxygen (Medical Gas)
6. **For anaphylaxis-** Adrenaline (Inj)
7. **Antipyretic-** Paracetamol (Tab/Syp)
8. **For Interstitial Lung Disease Management at the tertiary level-** Pirfenidone/Nintedanib
9. **Pulmonary Embolism Management-** Low Molecular Weight Heparin

IX. Indicative list of Devices/Equipment required in the Chest Clinic

Stethoscope	Nebuliser Machine	ECG Machine	Autoclave
BP Apparatus	Ambu Bag (Adult and Paediatric)	X-ray Unit	Ventilator (Adult and Paediatric)
Thermometer	Suction machine	Spirometer	ECG
Pulse Oximeter	Oxygen Concentrator	ABG Analyzer	Non-invasive Ventilation like CPAP and BiPAP
Oxygen Cylinder (B type)	Inhaler, Spacer Devices	Defibrillator	

For medical management of the cases- access the ICMR Standard Treatment workflow for Cardio-pulmonary diseases through the following link- https://www.icmr.gov.in/standard-treatment-workflows-stws

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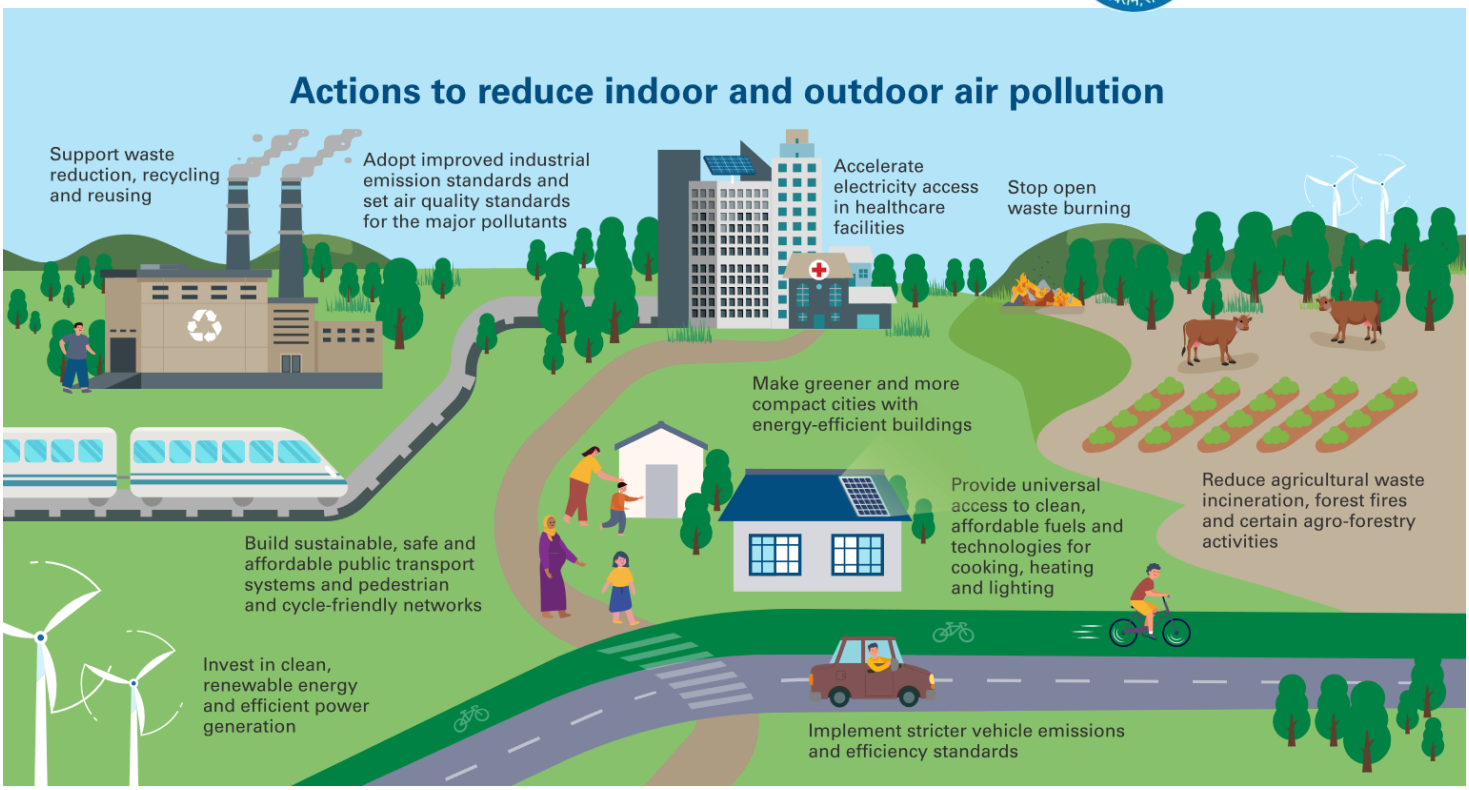
X. Potential actions to reduce Air Pollution



Source- Introduction to Children's Environmental Health by UNICEF and WHO (available on Agora)

XI. Strategies to reduce Air Pollution that clinicians can promote during their engagement with patients, caregivers and local officials.

1. **Smoking cessation:**
   - Communication with patients to change habits like smoking cigarettes, bidis and related tobacco products

2. **Behaviour change on lifestyle**
   - Avoid outdoor morning and late evening walk. run, jog and physical exercise
   - Reschedule outdoor activities as per AQI, and remain indoors on days with poor to severe AQI.
   - Do not open doors and windows during morning and late evening hours, it may ventilate if necessary, between l2 p.m. to 4 p.m. in afternoon (on days with poor to severe AQI)
   - Avoid burning wood/ charcoal in 'Anghiti' during winters, in closed and confined condition which may be fatal due to Carbon monoxide and dioxide build up.
   - Practice wet mopping instead of sweeping or vacuum cleaning inside homes.

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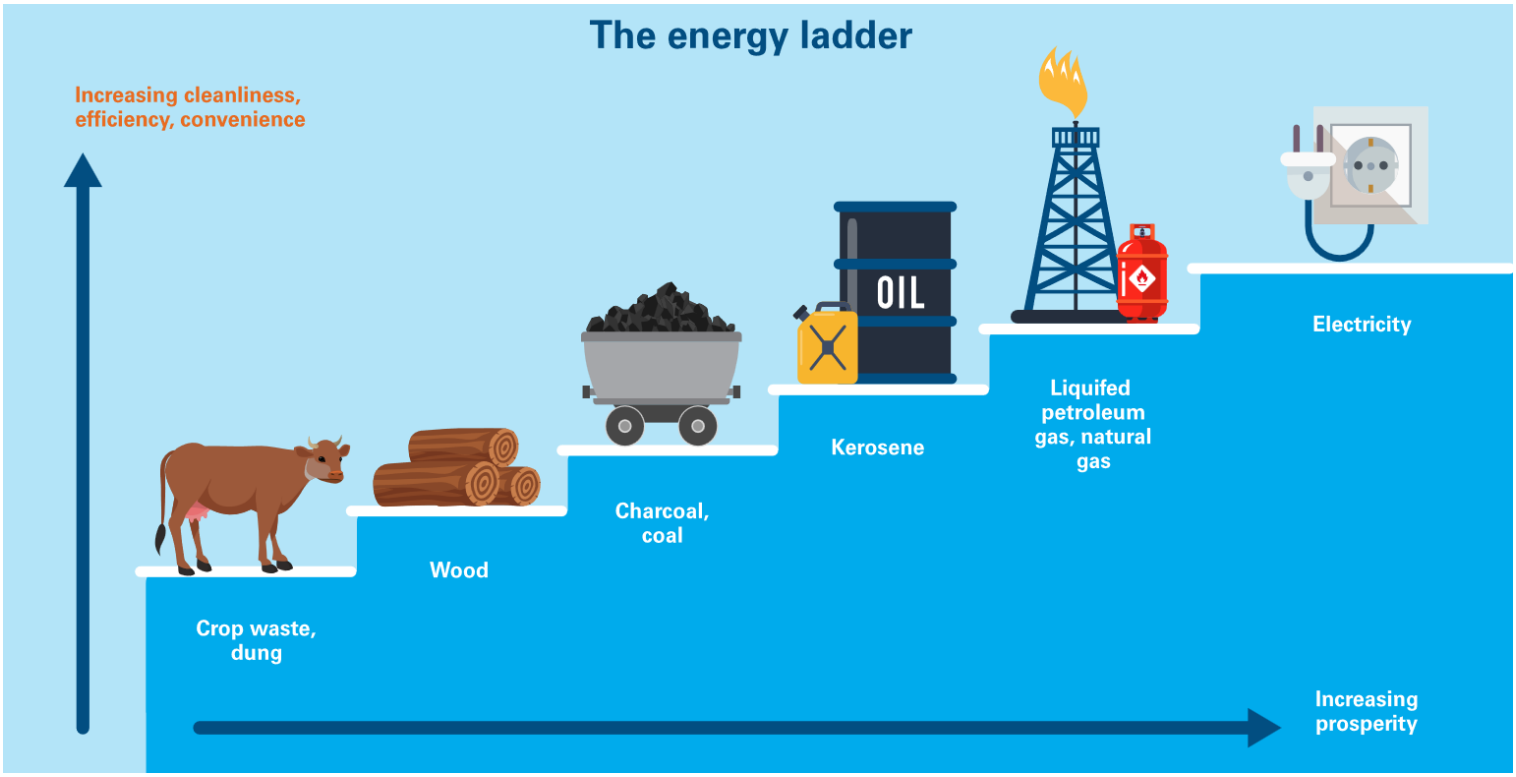
3. **Fuels for heating, cooking and lighting**
    - **Shift** from wood, animal dung, charcoal, crop wastes, coal and kerosene **to cleaner fuels such as biogas, ethanol, liquefied petroleum gas (PM Ujjwala Yojana), natural gas and electricity.**
    - **Use efficient stoves and technologies**, including advanced biomass stoves, as an interim measure.

The most important prevention measure for household air pollution is scaling up access to cleaner household energy for cooking, heating and lighting.



Source- Introduction to Children's Environmental Health by UNICEF and WHO (available on Agora)

4. **Personal protection (Face Mask. Air Purifiers. Air Conditioners)**
    - The disposable N95 or N99 is useful provided user instructions are followed. These masks may help provided the period of exposure is short. Masks should have proper fitting on users' mouth and nose. Ensure to replace the masks after usage as instructed. Paper masks, handkerchief, scarvess and cloth are not effective.
    - If using air purifier, follow manufacturers' guidelines, however it may be advised to have expert's consultation on suitability, positioning, technology selection and cleaning capacity (area coverage). Ensure to replace and clean filters as instructed. Avoid using an air purifier that works by generating ozone as it increases pollution inside rooms.
    - When operating air conditioners in buildings or vehicle, use in "re-circulate" mode to avoid contact with outside air.

Continued: Strategies to reduce Air Pollution that clinicians can promote during their engagement with patients, caregivers and local officials.

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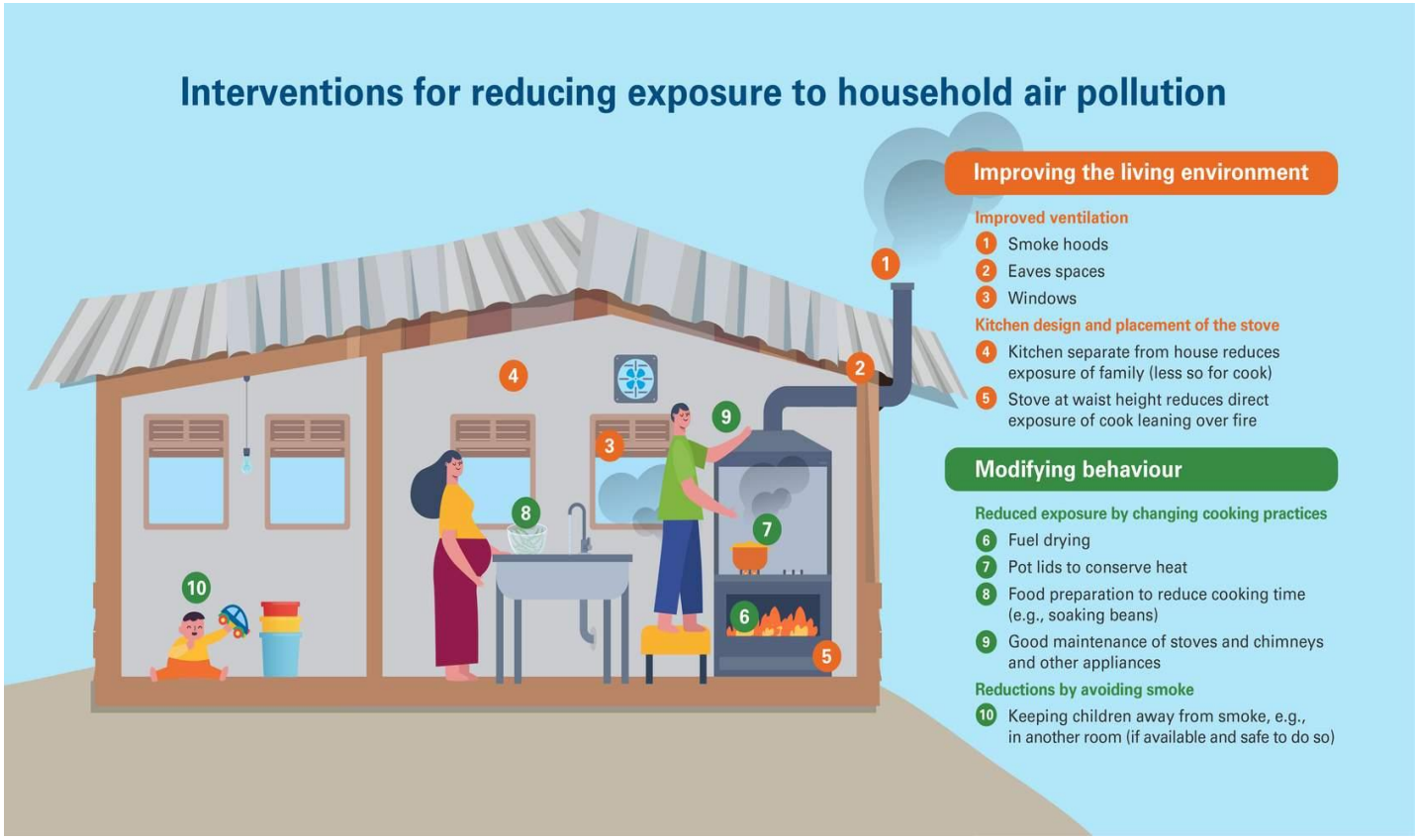

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Continued: Strategies to reduce Air Pollution that clinicians can promote during their engagement with patients, caregivers and local officials

5. **Cleaner energy sources**
   This could include promotion of renewable sources of energy like household solar power for lighting, heating, cooling and cooking.

6. **Agricultural practices**
   - Use of waste management technologies that can be applied to produce biogas by anaerobic digestion.
   - Avoid crop residue burning.

IEC material available on NPCCHH website (click here) could be used to raise public awareness and promote behaviour change on these issues

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