

Health adaptation plan for Allergic Diseases

CLIMATE CHANGE AND ALLERGIC DISEASES

HEALTH ACTION PLAN

What actions needs to be undertaken

Action for reduction of allergic disease by climate changes

The change in climate leads to increase the severity of allergic diseases, exacerbation of stable disease and development of new allergic symptoms. This leads to increases disease burden, increases healthcare facilities and unwanted out-patients department (OPD) and emergency visit.

The various methods to reduce risk of allergic diseases are:

1. Increasing access to Health care and Medication
2. Education to public
3. Training and Research
4. Air pollution and it control

AT PRIMARY CARE LEVEL

I. Increasing Access to Health Care and Medications:

5. Access to appropriate health care and medications is central to the management of allergic respiratory diseases such as asthma. For example, every asthmatic should have a written Asthma Action Plan. All allergic patients (like allergic rhinitis and asthma) should have knowledge about changes in his/her symptoms and emergency medication during change in climate. In the case of aeroallergens, ensuring complete and equitable access to available medications will be increasingly important with climate change. This can be done by
6. Training of medical officer about climate change and allergic diseases at primary care level.
7. Early action plan for exacerbation of allergic disease during pollen season.
8. Reporting and recording of different allergic diseases monthly and seasonally.
9. Policies for introducing flu vaccine for high risk group.
10. Increase the number of health care provider and emergency services during pollen and dust storm season.

II. Education the public:

Many aspects of allergic respiratory disease education have become increasingly important. In the case of aeroallergens, stronger education programs directed at allergen avoidance are important. The trend to earlier pollen season starts should also be clearly communicated to those with allergic respiratory disease and their care takers and related health care professionals.

Following action can improve the education and awareness of climate changes and allergic diseases are:

1. General public lectures at different colleges and hospitals at regular basis on
 - a. Allergic diseases
 - b. Climate changes and it health effects
 - c. Pollen and its health effects
 - d. Air pollution
2. Poster and digital display on allergic disease symptoms, factors, prevention and treatment at public places.
3. Lectures on allergic diseases at school and colleges.
4. Drama, skit and short film show on world allergy day/ world asthma day at different places.
5. Chapter on allergic disease in school and college books
6. Videos, poster and articles on social media.
7. Website on allergic diseases and health effects.
8. Knowledge and training regarding allergic diseases, aeroallergen, allergic plants, weeds and geographic correlation.
9. Regular workshop on diagnosis and management of allergic diseases at different part of country on regular basis.
10. Different graduate and postgraduate degree/ diploma course in allergic diseases, aerobiology and climate changes and it health effect in different university and colleges.
11. Department of allergy diseases in every medical college.

A. Content for IEC

Content should emphasize on

1. Common signs and symptoms allergic diseases
2. Risk factors and triggers of allergic diseases
3. Methods of allergen avoidance
4. Precautions during climate change
5. Effect of air pollution and pollens on allergic diseases
6. Importance of action plan

B. Time to release such awareness material

1. During transitions between seasons
2. During major changes in weather variables like temperature, humidity, wind speed etc.
3. Before major festivals
4. During and after floods and natural disasters

AT TERTIARY CARE LEVEL

III. Training and Research:

Training is important part of any programme. There is limited training programme on allergic diseases and climate changes in the country. For the early and better management of

allergic diseases and prevention of harmful effect of climate change, there should be regular training to health care provider. The research on allergic diseases is also limited at few institutes in our country. There should be separate fund for research on climate changes and its effect on allergic diseases. There should be involvement of different institutes from different parts of the country for research. As India is a large country with different geographical areas with fauna and flora. So the climate change over different parts of the country varies and its effect on health and allergic diseases also differs according to the area.

Following actions can improve the training and research section of climate changes and allergic diseases are:

1. Training of medical officers and primary health care providers about climate change and allergic diseases from all primary care levels at regular intervals from every state according to their fauna and flora.
2. Research on changes in the pattern of allergic diseases with climate change.
3. Training regarding heating, ventilation, and air conditioning.
4. Multicentric research on allergic diseases.
5. Research on different aeroallergen concentrations and major air pollutants in different parts of India.
6. Involvement of different departments for research and training programmes.
7. Formulation of national guidelines for diagnosis and management of different allergic diseases.

IV. Air pollution and its control:

A change in air pollution is commonly seen after climate change. The climate change leads to changes in both indoor and outdoor air pollution. The change leads to increases in allergic diseases or exacerbation of stable allergic disease. The control of air pollution is one of the important steps in allergic disease prevention and control. There is no standard air pollution policy in our country.

Following actions can be taken for air pollution control and its effect on allergic diseases are:

1. Multi-sectorial committee
2. To develop guidelines for reduction of toxic substances and air pollutants, building codes, and allocate economic incentives.
3. Data on aeroallergen concentrations and major air pollutants
4. Amended air quality and emissions standards
5. Indoor air quality standards issued
6. Draw plans to replace allergenic trees with non-allergenic trees on street sides
7. Shifting to hybrid system vehicles
8. Measures to reduce ground level ozone and other air pollutants
9. Strengthen inspection of car exhaust emissions
10. Promote and encourage solar energy applications
11. Long-term aeroallergen monitoring system
12. Real-time air quality monitoring system
13. Identify vulnerable areas and groups with increased levels of air pollution

When to initiate the actions

Action should be initiated

1. **Prior to commencement of pollen season which have been defined in various parts of India**

Area	Pollen season
Northern India	Feb.-April and Sept.-Nov
Eastern India	August and March-July
Southern India	Aug-Nov and Feb.-April
Central India	March-mid May, Sept.-Nov. and Dec.-Feb.

2. **During transitions between seasons**

Each season brings with it specific allergens.

During winter, indoor, rather than outdoor, allergies are usually an issue.

As winter turns to **spring**, grass and tree pollens becomes more abundant, and spores begin being released by outdoor molds.

When **summer** rolls around, grass pollen is problematic, and mold spores peak in warm regions

3. **When humidity levels change**

Heat and humidity usually occur together. Humidity can make air quality worse

Humidity can increase levels of mold and dust mites. They are known to be asthma triggers.

Ozone levels can rise along with humidity, triggering asthma symptoms.

4. **Measures should be taken before major festivals**

Known cases of allergic diseases like asthma should confine outdoor activities during major festivals like Diwali.

5. **During and after floods and natural disasters**

Changes in meteorological parameters substantially increase allergic morbidity and mortality. Extreme heat and high humidity trigger asthma symptoms. Cyclones have also been related to asthma. Thunderstorms occurring during the pollen season have been observed to induce severe asthma attacks in pollen sensitive patients.

Actions to be undertaken by SNO-CC

- I. **Customized medication plans** for ones who suffer allergy symptoms at different times of year that includes

Increasing certain medications during the times of year when they tend to experience allergies

Increasing certain medications when they are traveling to areas where they are likely to be exposed to the allergens that affect them.

- II. **Ensuring availability of the drugs during increased demand particularly**

1. Emergency drugs
2. Anti-histaminics

3. Nasal sprays
4. Inhalation medications
5. Vaccines

III. Increase public awareness on climate change and allergic diseases

Educate about

1. Secondary prevention of allergy
2. Maintaining adequate humidity levels at home
3. When to restrict outdoor activities

Involved departments in the communication channel and for operational coordination

S.No	Stakeholder	Task/activities	Probable time/ duration for initiate actions	Responsibilities
1.	Ministry of health and family welfare	Ensuring implementation monitoring, supervision & evaluation of activities.		Coordination with other stake holder government departments of Govt. of India and states/UTs
2.	Ministry of environment, forest and climate change	Ensuring plantation of non-allergenic trees Avoidance of deforestation Identifying allergenic plants in areas with high prevalence of allergy		Coordination with other stake holder government departments
3.	Meteorological department	Ensuring recording, maintaining and broadcasting of important weather variables		Coordination with other stake holder government departments
4.	Ministry of agriculture	Communication with meteorological department to ensure the favourable climatic conditions for crop burning. Providing early information of rains and other climatic conditions		Coordination with other stake holder government departments
5.	Ministry of information and broadcasting	Providing early information of rains and other climatic conditions Broadcasting of important weather variables		Coordination with other stake holder government departments
6.	National medical	Early diagnosis of allergic		Coordination with

	commission	diseases Primary and secondary prevention of allergy		other stake holder government departments
7.	Academic institutions	Conducting trainings Formulating guidelines for diagnosis and management of allergic diseases Research activities		Co-ordination with all above mentioned stakeholders

Intervention proposed

Aeroallergen Monitoring:

There is a need of improvement in the surveillance or monitoring of atmospheric pollen and mould spore concentrations. Installation of pollen monitoring station is important factor for reduction in allergic diseases. There is lack of aeroallergen monitoring in India expect one pollen count public display in VPCI Delhi. The aero allergen monitoring system can be increased by:

1. Increase pollen monitoring station at public places in Delhi
 - a. Hospitals
 - b. Colleges
 - c. Schools
 - d. Metro-station
 - e. Railway/ bus station
 - f. Airport
2. Installation of minimal one pollen monitoring station in each metro cities and state capitals.
3. Display of allergen avoidances techniques
 - Digital display or poster at public places
 - Advertisement via TV and radio
 - Short audio or video on social media
4. Identify the vulnerable area of allergic diseases

Aeroallergen Forecasting:

Aeroallergenforecasting currently limited to some parts of developed countries. There is lack of aeroallergenforecasting in our country. Local aeroallergen monitoring and forecasting potential is required so that management and prevention of allergic respiratory symptoms can occur.Increase the Aeroallergenforecasting by

- Display of forecast at different public places (like hospital, school, metro station etc)
- Forecasting daily through local TV and radio
- Early warning system for pollen season and dust storm through
 - Through local TV and radio during these season
 - Short audio or video clip, notice and picture on social media
 - Advertisement and article in local newspaper during season

- Display on digital monitor or poster at public places.

Planting policies and practices

Allergenic plant management

Training and research

Air pollution and its control