

## Experience to Action Surat city Climate Change and Health Vulnerability

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### Introduction of PPP

“Public Private Partnership (PPP)” is one of the major pillar of Surat Urban health System . PPP here is a partnership between a local self government / government on one side and private practitioners and professional associations on the other side with a goal of “Healthier Surtis in Healthier Surat”.

Journey of formal PPP started with “Urban Malaria project” (1997-2000) supported by DFID in which 15 associations representing private sector including IMA, FPA, IAP, Consultants, Pathologists-Microbiologists , Pharmacists as well as regional associations of doctors, academic facilitator Preventive Medicine Department of Government Medical College Surat and Health department of SMC (public sector) underwent a process of partnership. Subsequently Health department of SMC and all private sector partners strengthened and sustained it, not only during emergency and epidemics but in routine also.

Area of PPP in Surat is preventive and curative health services, disease surveillance as well as academic deliberations.

Undoubtedly PPP is a win-win situation for both Public and Private sector. Sustenance of partnership needs a link , an academic institution as a facilitator and the same role is effectively played by medical colleges as well as a new academic institution Urban health and Climate Resilience Centre (UHCRC)

This is the second article in PPP series and its publication in IMA bulletin is a reflection of on PPP in Surat city.

Surat city rapidly industrialized , fourth fastest growing city<sup>1</sup>, hosts highest percentage of migrant population in India<sup>2</sup>, second rank city of India with highest per capita vehicles. City geography, temperature , humidity , socio demographic profile and rampant construction activity is conducive to vector born diseases and there are early indicators that it is also conducive to climate change influence on health .

As per public health history Surat city was on the top rank for Filariasis ( till sixties ) , Malaria, Falciparum malaria (till nineties) and the only city in Gujarat with a record of resurgent infections like Plague and Leptospirosis linked to floods.

Climate change is an upcoming challenge for the city. In last thirty years maximum temperature have increased by 0.70C, increasingly summer days are in a caution category, Humidity is increasing , season schedule is getting disturbed.

In medical practice changing trend of diseases have been documented as well as well perceived by doctors.

With this background brain storm workshop was organized with IMA members as a part of Health perspective study of “Urban Health And Climate Change In Surat City” under Asian City climate Change Resilience Network of Rockefeller Foundation.

This experience sharing through participatory process of all those knowing and experiencing health and medical problems in the city is a valuable part of city adaptation plan under making by UHCRC.

(Analysis of the workshop deliberations is presented in this paper with request that if readers want to add on some more points they can write to UHCRC on [uhcrsurat@gmail.com](mailto:uhcrsurat@gmail.com))

### 1. Observation in practice about changing profile of disease trend in Surat city

|                             | Declining trend   | Rising trend     |
|-----------------------------|---|------------------|
| Vector born diseases        | Malaria, Filariasis, Plague   | Dengue           |
| Gastro intestinal infection | Cholera, Gastro enteritis, Typhoid, Polio, Hepatitis A, Worm infestations | Viral infections |



|                              |  |  |
|------------------------------|--|--|
| Respiratory infection        | Tuberculosis , Diphtheria              | Viral infections   |
| Skin and venereal diseases   | Syphilis, Gonorrhoea, Scabies, Leprosy | Allergic dermatitis  |
| Non communicable diseases    | Malnutrition                           | Diabetes mellitus, Hypertension, COPD, Asthma, Cancer, Obesity, Arthritis, Accidents, Cataract |
| Mental health problems       | -                                      | Depression, Anxiety, Psychiatric Illness   |
| Surgical                     | Hydrocele, Peptic ulcer                | Injury related   |
| Reproductive health problems | -                                      | Menstrual Disorder, Infertility  |

There is a close match between doctors experience and vector born disease surveillance records of SMC health department showing decline in slide positivity rate of malaria (33% in 1992 to less than 2% since 2000) and PF positivity rate from 56% to less than 20% since 2008), MF rate from 32.2 in 1956 to <0.5 since 2000. Trend of Dengue positive cases in vector born disease surveillance records is matching to this observation. Rising trend of Non communicable diseases like Diabetes, Hypertension, Asthma, Cancer, Accidents is in agreement to the fact that proportionate contribution of deaths due to these health problems to total deaths has increased by more than six times in Surat in last two decades (Source SMC Death registration)

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| 2. Health risks due to climate change in Surat city                        |
| Vector born diseases (Malaria, Dengue, Chikungunya, Plague, Leptospirosis) |
| Respiratory problems (Viral infections, URTI, Asthma, TB)                  |
| Allergic problem   |
| Non communicable diseases  |
| Mental health problems (Depression, Alcoholism, Suicide)                   |
| Gastro intestinal problems (Viral infections)                              |
| Viral infections   |
| Resurgent and new infections   |
| Nutritional problems (Malnutrition, anemia)                                |
| Skin problems  |

Opinion of the Doctors that climate shall increase Vector born diseases (almost all locally prevalent) and respiratory viral infections and Asthma, is in agreement to the national and international literature. Association of deaths due to Hypertension, heart diseases, Diabetes during heat wave is documented in literature. Preliminary analysis of all cause mortality during extreme Heat Index days also reveals significant increase in average number of deaths/ day with two days lag. Association of extreme weather and disaster with mental health problems is well established. Surat doctors did not miss risk of resurgent infections which they have dealt with in 1994 and 2006 floods in the city.

|            |           |           |          |            |
|------------|-----------|-----------|----------|------------|
| Udhna      | Bapunagar | Adajan    | Old city | Khadi area |
| Rander     | Katargam  | Pandesara | Slums    | Sachin     |
| Mithikhadi | Varachha  | Amroli    | Hajira   | Umarvada   |

Doctors list of High Health risk area due to Climate change and community groups reflects the focus area of high malaria incidence in past, affected due to resurgent infections during floods and industrial area.

Doctors listed out the health high risk groups in the city. Majority mentioned are as per Occupational group like diamond workers and textile workers, Migrants from Orissa, Bihar and UP, socio economically vulnerable like Schedule cast, schedule tribe, below poverty line family, and Children.

Suggestions of IMA doctors for designing climate resilient urban health system prioritized Disease surveillance. The same have been emphasized by WHO and other organizations working in the subject of health climate resilience. Suggestions of practicing doctors about surveillance like are standardized formats, participation of private practitioners like disease wise and region wise monitoring IT based system, disease forcast mechanism and feedback to private practitioners are already included in the UHCRC activity "strengthening and upscaling disease surveillance system in the city".



Second suggestion towards resilience was Media participation for which group have suggested use of Radio, Local TV channel, Internet and Social media.

Third suggestion towards resilience is to form a multi organizational group to work towards resilience may be named as health resilience team/ taskforce/ health disaster management group, inclusion of social science experts , social workers and local leaders in the team. UHCRC is proposing formation of consortium of organizations for the same.

Fourth suggestion was Community awareness programs , for disaster and health forecast system through process of group counseling by community organizations and a display units like Museum.

Doctors emphasized on the multi stakeholders convergence for risk reduction to climate change. Their enlisting included professional associations like Builders, Doctors , Social workers, Teachers, Lawyers and politicians. Public sector departments like Police, Pollution Control board, Agriculture and Forest Department, Weather Forecast Dept, Municipal corporation, PWD and SUDA. Academic institutions like Engineering Colleges, Medical colleges, Schools and Colleges. Community organizations and corporate like local NGOs, co operative societies, business corporate, Chamber of commerce and industries. Social organizations like Religions Groups, NGO, students, Community leaders, Lions club, Rotary club, Mahilamandals/ Labour organizations.

Amongst 8 broad Suggestions for adaptation to health and climate change by doctors mentioned steps for evidence based planning, community participation and personal protection, flood adaptation measures, water and environmental sanitation , pollution control and energy conservation.

| Recommendations to Surat Municipal Corporation for climate change and health |  |
|--|--|
| Effective use of Media   | <ul style="list-style-type: none"> <li>● Radio/ TV/ local news channel</li> <li>● News paper/ articles and columns</li> <li>● Mobile van/ SMS</li> </ul>   |
| School education programs  | <ul style="list-style-type: none"> <li>● Empowering students as a change agents</li> </ul>   |
| Public transport   | <ul style="list-style-type: none"> <li>● Better public transport facility</li> <li>● Popularizing it through Schools, youth clubs, Women's organization, social organization</li> </ul>  |
| Personal transport   | <ul style="list-style-type: none"> <li>● Promoting shared use of two / four wheelers</li> <li>● Designing bicycle safe roads</li> <li>● Popularizing cycling it through schools, youth clubs, Women's organization, social organization</li> </ul> |
| Basic life support training  | <ul style="list-style-type: none"> <li>● To doctors , paramedics , college students, community volunteers</li> <li>● Maintaining region wise list of trained members</li> </ul>  |
| First aid trainings  | <ul style="list-style-type: none"> <li>● Schools/ youth clubs/ Women's organizations/ social organizations</li> </ul>  |
| Health action plan   | <ul style="list-style-type: none"> <li>● Preparation and regular updating of emergency health action plan and dissemination of same</li> </ul>   |
| PEs network formation  | <ul style="list-style-type: none"> <li>● For out of school in slums and university. Adolescents and Youngsters for community support</li> </ul>  |

IMA group also made suggestions to SMC for risk reduction and adaptation for Climate changes on Health in Surat city. Their suggestions include various actions and process for the same like effective use of Media, School education, public and private transport management, Dissemination of information and messages, Trainings of basic life support and first aid, team formation, Health action plan, Community awareness, PEs network and effective NGO contribution.

49 IMA members participated in this workshop organized on 13-10-09, at conference room of Mahavir Cardiac Hospital in collaboration with IMA Surat branch. All valuable inputs and suggestions emerged out of this participatory process has become part of designing process of Surat city health and climate change adaptation and resilience under preparation by UHCRC.

This contribution of IMA members to research and policy for Surat city health and climate resilience is one of the unique area of contribution of Public Private Partnership.

