

Health strategy and priorities in India

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4th Nov 2016, NIPFP

Disease burden of India is changing

- Traditional disease burden: Poverty, malnutrition, illiteracy and poor health services related high IMR, high MMR, tuberculosis, cholera, leprosy.
- Emerging disease burden: Related to growth that is not mindful of health risks: heart disease, diabetes, lungs and respiratory track diseases, Dengue, Chikungunya.
- Risks from polluted air and water, unsafe buildings, unplanned cities, bad drainage, poor sewage, badly planned and dysfunctional garbage disposal systems.

Health strategy

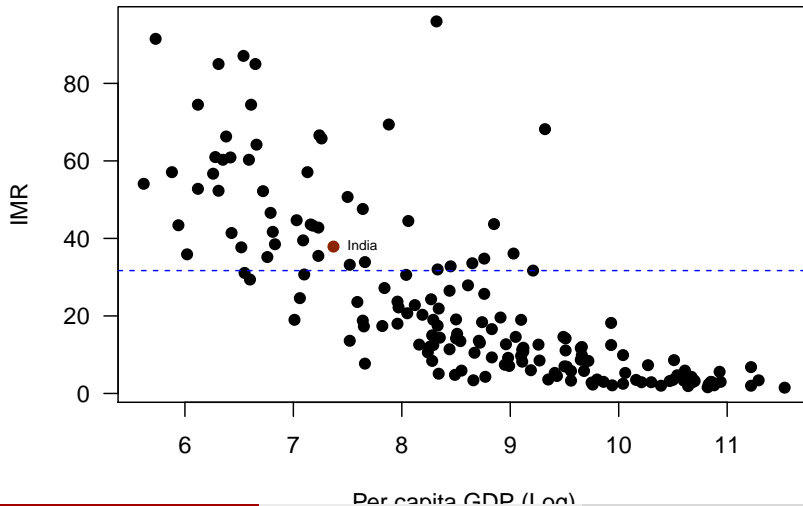
- Consequently health priorities are focused on communicable diseases, vaccination, provision of curative health care, institutional delivery.
- Failure of public health care systems is shifting expenditure to insurance. The focus of health policy is curative health care.

Poverty related health issues

- Every 4 minutes a child under 5 dies in India from preventable diseases like diarrhoea, typhoid, measles, malaria and pneumonia
- Every day 1000 Indian children die because of diarrhoea.
- Every day 160 women die in India from preventable causes related to pregnancy and childbirth.

GDP growth will improve health...

Negative correlation between IMR and Per capita GDP

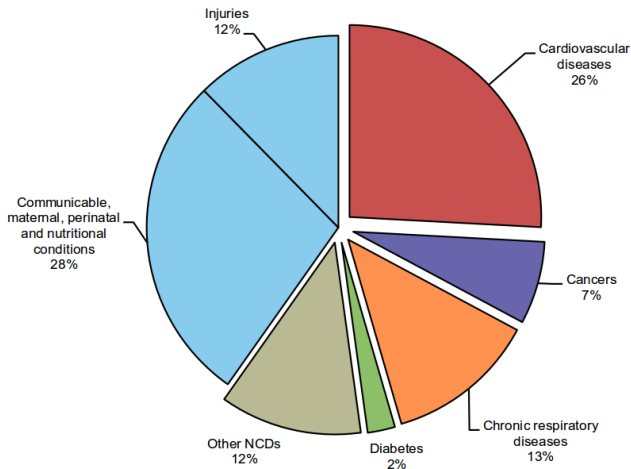


But growth can create risks

- Development is never health risk neutral. It has the potential to either increase or reduce health risk.
- Development, planning and regulation has to be mindful of health risks.

Rising burden of NCDs in India

Proportional mortality (% of total deaths, all ages)



Total deaths: 9,816,000

NCDs are estimated to account for 60% of total deaths.

Which disease causes the most deaths?

India 2015 ranking

1. Ischemic heart disease
2. COPD¹
3. Cerebrovascular disease
4. Lower respiratory infect
5. Diarrheal diseases
6. Tuberculosis
7. Diabetes
8. Chronic kidney disease
9. Neonatal pre-term birth
10. Road injuries
11. Neonatal encephalopathy

¹ Chronic obstructive pulmonary disease

Which diseases causes the most premature deaths?²

India 2015 ranking

1. Ischemic heart disease
2. Neonatal pre-term birth
3. Neonatal encephalopathy
4. Lower respiratory infect
5. COPD
6. Diarrheal diseases
7. Cerebrovascular disease
8. Tuberculosis
9. Road injuries
10. Self-harm
11. HIV/AIDS

²Deaths occurring before the age of 65.8 for males and 71.0 for females in India

Which cause the most death and disability combined?

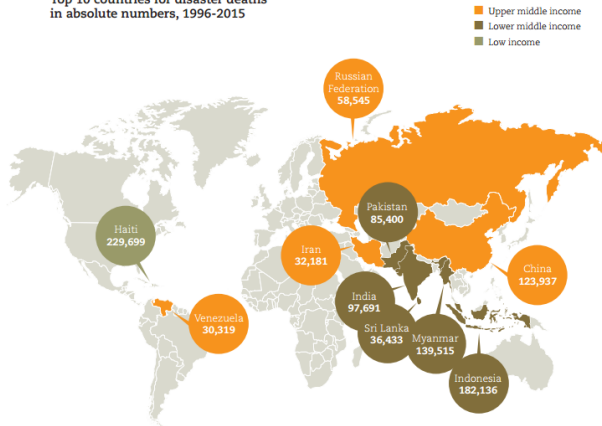
India 2015 ranking

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7. Cerebrovascular disease
8. Tuberculosis
9. Iron-deficiency anemia

Leading causes of death

Disasters

Top 10 countries for disaster deaths
in absolute numbers, 1996-2015



Leading causes of Deaths

Road accidents

India road crashes kill 146,133 people in 2015

10 June 2016 | India

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THE INVISIBLE KILLER

Air pollution may not always be visible, but it can be deadly.



36%
OF DEATHS FROM
LUNG CANCER



34%
OF DEATHS FROM
STROKE



27%
OF DEATHS FROM
HEART DISEASE

[10-25 YEARS]

Air pollution takes an early toll on heart



Even healthy young adults may suffer the ill effects of air pollution. For three consecutive years, researchers traced levels of air pollution at three monitoring sites in and near Provo, Utah. They took blood samples from 72 healthy volunteers, average age 23, all of them non-smokers. The study found consistent relationships between levels of air pollution and damage to cells in the endothelium, the inner lining of the blood vessels.

NYT

AIIMS

How 4-yr study mapped pollution-arthritis link

KAUNAIN SHERIFF M

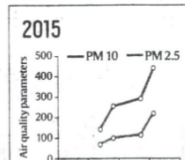
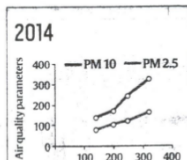
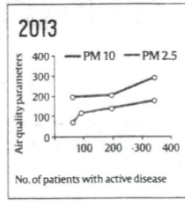
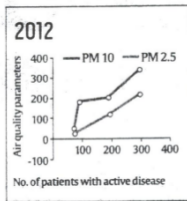
NEW DELHI, OCTOBER 28

WORRYING SYMPTOMS

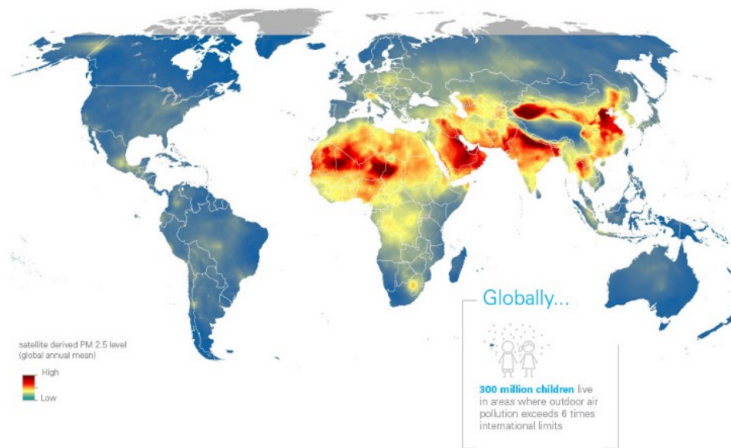
IN A study conducted by AIIMS, the symptoms of 500 persons with active Rheumatoid Arthritis was compared with air parameters in Delhi. The median age for men was 43 years and while it was 48 years for women. The disease duration was 10 years.

The study showed that as particulate matter (PM) levels increased in the air, symptoms of Rheumatoid Arthritis took a turn for the worse. This indicates that there is a significant correlation between the increase in levels of particulate matters in Delhi and a flare in arthritis symptoms.

■ In 2012, levels of PM 10 and PM 2.5 "significantly correlated with flare of disease". When PM



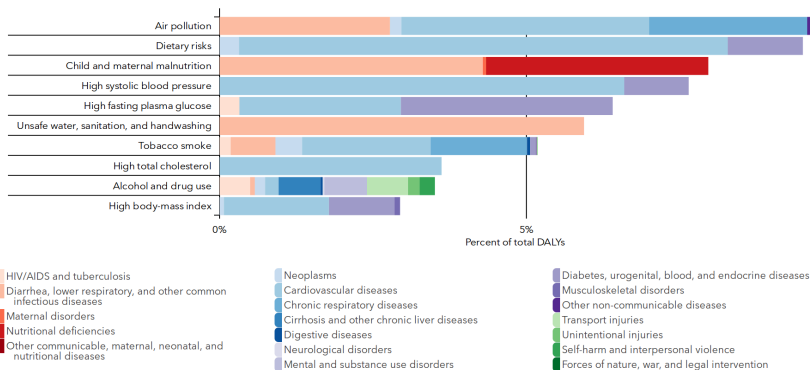
High levels of air pollution in India



Clear the Air for Children uses satellite imagery to show for the first time how many children are exposed to outdoor pollution, and where they live across the globe.

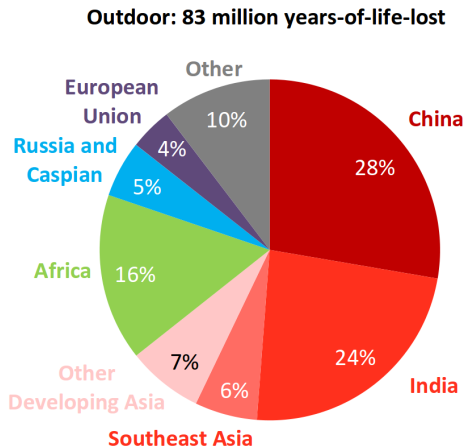
Air pollution in India drives the most death and disability combined?

India 2015 ranking



Total years-of-life-lost due to outdoor air pollution


Regional breakdown, 2012



Air pollution causes child mortality

Air pollution behind 10% under-5 years deaths: Unicef report

By TNN | Updated: Nov 01, 2016, 08.06 AM IST

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NEW DELHI: A report by the United Nations Children's agency, [Unicef](#), released on Monday has confirmed the worst fears of people living in polluted areas — that bad air is contributing to death of many children even before they celebrate their fifth birthday.

Outdoor and indoor pollution, the agency noted, are directly linked to respiratory diseases that account for almost one in 10 under-five deaths, making [air pollution](#) one of the leading dangers to children's health. "Children are more susceptible than adults to air pollution as their lungs, brains and immune systems are still developing and their respiratory tracks are more permeable. Young children also breathe faster than adults, and take in more air relative to their body weight," Unicef stated.



Impact of air pollution on lung function ³

- Reduced lung function in 43.5% schoolchildren of Delhi compared with 25.7% in the control group
- Delhi's children had increased prevalence of lung functions deficits (9.6% compared to 3.5% in the control group)
- Sputum of Delhi's children contained 4-times more iron-laden macrophages (siderophages) than controls
- Prevalence of hypertension in children was 6.2% in Delhi compared to 2.1% in the control group

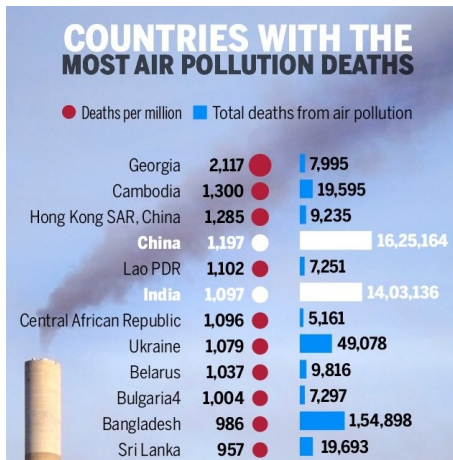
³ Central Pollution Control Board, Ministry of Environment and Forests & Chittranjan National Cancer Institute, Kolkata (2012)

World's 20 most polluted cities

Half are in India



Total deaths from air pollution in India: Second highest in the world



Delhi's air polluted more than 90 percent of the time

Jan 2013 - Oct 2016⁴

Raw PM 2.5 (24 hr average)		% of time
0-12	Good	0.00
12.1-35.4	Moderate	1.75
35.5-55.4	Unhealthy for Sensitive Groups	8.83
55.5-150.4	Unhealthy	36.54
150.5-250.4	Very Unhealthy	17.21
>250.4	Hazardous	18.38

⁴ 17.29% of time data was not available

Is it safe to go out?

**Nov 2, 2016 5:00 PM
(LT)**

**303 AQI
Hazardous
PM2.5**

Health Message

Health alert: everyone may
experience more serious
health effects

How does India look in 2040?

Projections based on current and announced policies

- SO₂ and NO_x emissions each projected to grow by about 10% to 2040
- PM_{2.5} emissions projected to grow by 7%
- The number of people expected to die prematurely from outdoor air pollution projected to grow to over 900,000

National health policy draft 2015:

“Overall, communicable diseases contribute to 24.4% of the entire disease burden while maternal and neonatal ailments contribute to 13.8%. Non-communicable diseases (39.1%) and injuries (11.8%) now constitute the bulk of the country's disease burden. National Health Programmes for non-communicable diseases are very limited in coverage and scope, except perhaps in the case of the Blindness control programme.”

Preventing and mitigating risk factors

Needs state intervention	Individual choice
Air pollution	Dietary risks
	Handwashing
	Tobacco smoke
	Alcohol and drugs
	Physical inactivity

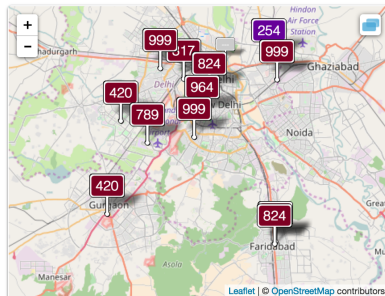
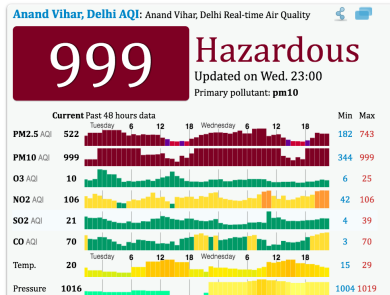
Mainstreaming health risk reduction

Mainstreaming health risk reduction into the government and regulatory process essentially will mean looking critically at each programme, activity and project that is envisaged.

This should be done not only from the perspective of reducing the existing risks health risks, but also from the perspective of minimizing its potential contribution to creation of new risks for health.

Top priority for preventing NCDs

Anand Vihar, Delhi Air Pollution: Real-time Air Quality Index (AQI)



Thank you.