Air pollution and their health effects in Mongolia

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Mongolia
Environmental pollution across the lifespan in Mongolia

Winter street scene in Ulaan Baatar
Mongolia: rapid transitions and cultural changes
Article 5.2 of the Mongolian Law on Child Rights (1996) states that a child has a right to grow up healthy, live in safe environment and be free from violence.
Children and air pollution
MONGOLIA’S AIR POLLUTION CRISIS
Tobacco Use
Living in ger districts
young maternal age
low maternal education

Air pollution
Tobacco Use
severe malnutrition

Physiological and pathophysiological causes
Pneumonia
Reduced lung function
Reduced fetal growth
Preterm birth
COPD

Outcomes
Death
Illness

Distal Socioeconomic causes
Proximal causes
Reduced fetal growth
Preterm birth
COPD

Suboptimum breast feeding
How do particles do harm?
Risk factors for childhood pneumonia

• Air pollution
  - Outdoor – fuel smoke, motor car emissions
  - Indoor – fuel smoke, tobacco

Smaller particles pass further down into lungs
What types of air pollution?

The people of Ulaanbaatar are currently exposed to annual average concentrations of fine particulate matter (PM2.5) over 7 times higher than the WHO international health-based guidelines established to minimize morbidity and mortality risk.
Air pollution affects the health of people profoundly, and of children in particular. UNICEF and partners are scaling up activities in Mongolia to address the causes and effects of the pollution.
PM2.5 and Fetal Deaths

R = 0.92

Calendar Months, January-December, 2011
A joint research team of Mongolia and Canada estimated in 2011 that 29% of cardiopulmonary deaths and 40% of lung cancer deaths in the UB city are attributable to ambient air pollution.
CONCLUSION

- Ulaanbaatar is one of the most polluted cities in the world's coldest capital city.

- The health impact of the most vulnerable populations, the mother and child, is even more harmful.

- Further studies need to be done to examine possible correlations between personal exposure to air pollutants and pregnancy loss.

- Unless major new initiatives are taken, these exposures will increase slowly over the next ten years with little progress in health impacts in total or on a per capita basis.
What should we do next?

We needed the monitoring and screening techniques it’s to help better understand how combinations of air pollutants influence human health effects and to determine which ones are the most toxic or require urgent study.
Blue sky Mongolia
БАЯРЛАЛАА
(bayar-lalaa)

THANK YOU
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