



Monitoring maternal and child health outcomes

Kim Mulholland

- Murdoch Children's Research Institute, Melbourne
- London School of Hygiene and Tropical Medicine
- University of Melbourne

This is not an ADB material. The views expressed in this document are the views of the author/s and/or their organizations and do not necessarily reflect the views or policies of the Asian Development Bank, or its Board of Governors, or the governments they represent. ADB does not guarantee the accuracy and/or completeness of the material's contents, and accepts no responsibility for any direct or indirect consequence of their use or reliance, whether wholly or partially. Please feel free to contact the authors directly should you have queries.



Conflicts of Interest

- › None



Why monitor health effects?

- › Current winter pollution exposures in Ulaanbaatar unprecedented in modern times *anywhere*
 - UK smog 1952 – lifelong risk of chronic respiratory disease
- › Health effects of high levels of coal smoke unknown
- › Average toddler in UB inhales 1-2 mg of hydrocarbon per month – effects unknown
- › We need to know:
 - How pollution is affecting women and children
 - How interventions affect health outcomes

Widnes, England, late 19th century



- Maternal mortality high
- Fetal death common
- Child mortality around 200/1000 live births
- Chronic respiratory illness very common
- Childhood bronchiectasis, cancer rates unknown



What are the health effects?

- › Pregnant women
- › Babies in utero
- › Infants
- › Older children



What are the health effects?

- › Pregnant women

- › Babies in utero

- › Infants

- › Older children

- › Pre-eclampsia

- › Antepartum
haemorrhage

- › Fetal death



What are the health effects?

- › Pregnant women
- › Babies in utero
- › Infants
- › Older children

- › Congenital malformations
- › Prematurity
- › Poor fetal growth
- › Spontaneous miscarriages
- › Fetal distress



What are the health effects?

- › Pregnant women
- › Babies in utero
- › Infants
- › Older children

- › Pneumonia
- › Bronchiolitis/asthma
- › Cardiomyopathy
- › Leukaemia, other cancers
- › Poor growth



a
cancers

What are the health effects?

- › Pregnant women
- › Babies in utero
- › Infants
- › Older children

- › Pneumonia
- › Bronchiolitis/asthma
- › Cardiomyopathy
- › Leukaemia, other cancers
- › Poor growth

What are the health effects?


- › Pregnant women
- › Babies in utero
- › Infants
- › Older children

- › Acute respiratory infections
- › Asthma
- › Chronic lung disease
- › Poor growth
- › Cancer
- › Cognitive development
 - School performance
- › Poor respiratory function




All can be monitored, but how to analyse impact? – routine data

- › Committee to standardize definitions
- › Basic exposure data – address, housing type
- › Include regional hospitals
- › Establish standardized PM2.5 monitoring in all sites



All can be monitored, but how to analyse impact? – accurate scientific data

- › Establish a cohort of pregnant women from a range of settings
- › Monitor exposure during pregnancy
- › Evaluate fetal and maternal health
- › Monitor infant health
- › Monitor child development



All can be monitored, but how to analyse impact? – accurate scientific data

- › Establish a cohort of pregnant women from a range of settings
- › Monitor exposure during pregnancy
- › Ev
- › M
- › M

In my opinion this can and *should* be done.

Thankyou for your attention!