Monitoring maternal and child health outcomes

Kim Mulholland

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

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
  - Pre-eclampsia
  - Antepartum haemorrhage
  - Fetal death
- Babies in utero
- Infants
- Older children

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!