



# Monitoring maternal and child health outcomes

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# 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 19<sup>th</sup> 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?

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- › Babies in utero
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- › Pre-eclampsia
- › Antepartum haemorrhage
- › Fetal death

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

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- › Bronchiolitis/asthma
- › Cardiomyopathy
- › Leukaemia, other cancers
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# What are the health effects?

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- › 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

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

**Thankyou for your attention!**