

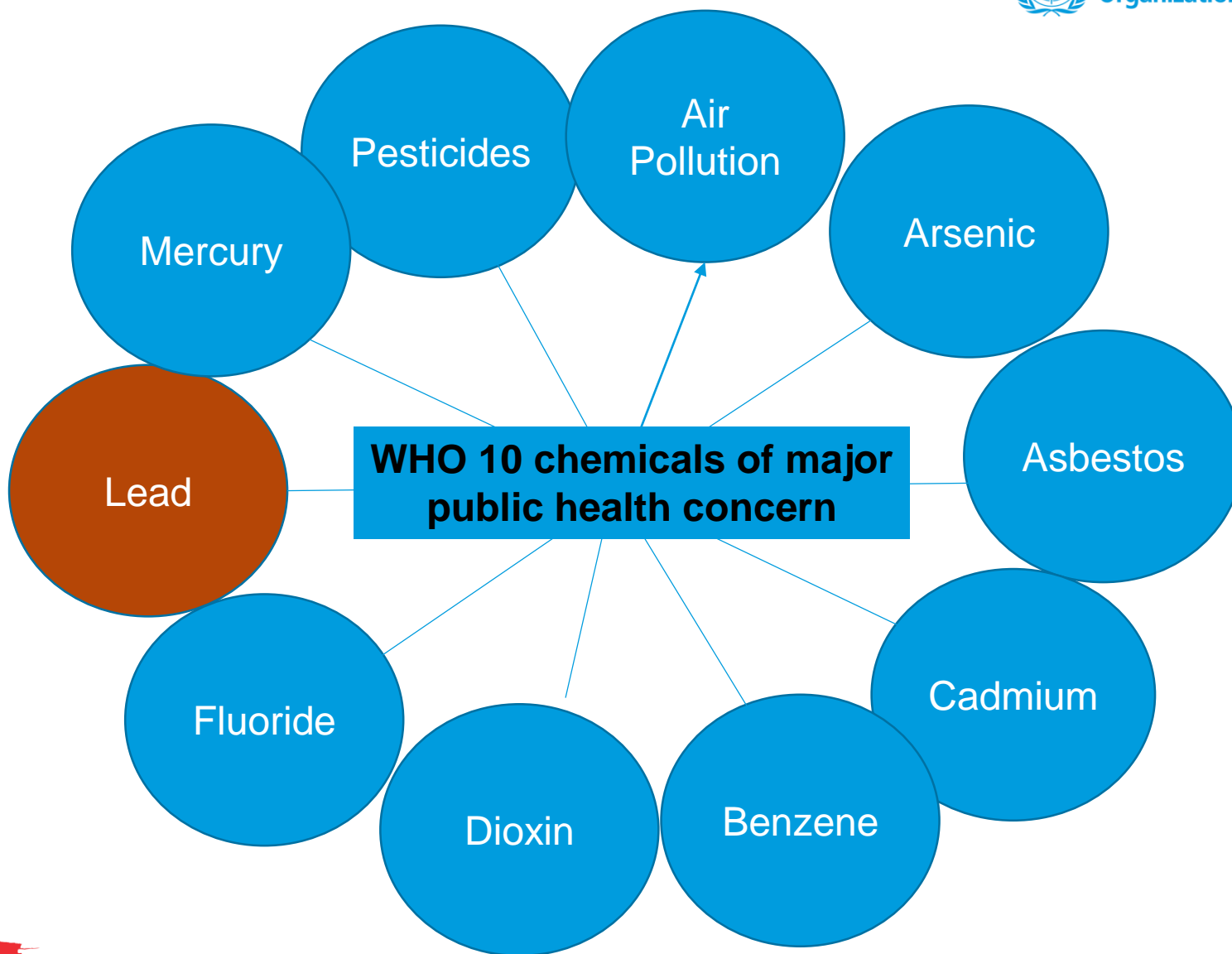
Health and economic impacts of lead exposure and global effort on lead paint



Global Alliance to
Eliminate Lead Paint

Outline

- Background
- Health effects
- Vulnerable groups
- Societal and economic impacts
- Global effort to eliminate lead paint



Background

- Lead is a versatile and widely used toxic substance
- Human activities result in environmental contamination:
 - mining & smelting; manufacturing, use, recycling and disposal of products made with lead
- Can be used in the manufacture of paint to give properties e.g. colour, rapid drying, corrosion resistance
- Lead paint is a source of human exposure to lead

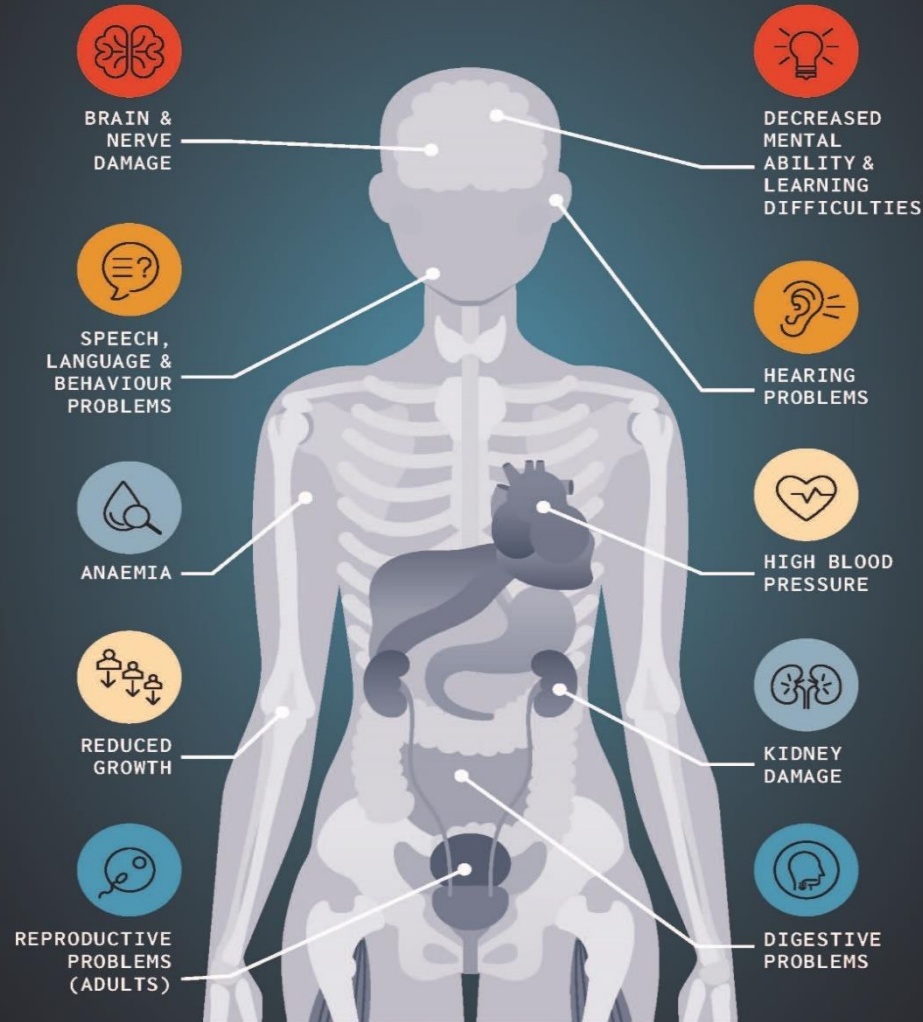
Lead persists in the environment

- Lead can be released during paint manufacture, application and removal
- Old lead paint fragments into flakes and dust that contaminate the environment
- Lead can remain in the environment indefinitely
- Lead paint creates legacy of potential human exposure for years into the future



Lead is a multi-system toxicant

- Inhalation and ingestion are main routes of exposure
- No known level of exposure without harmful effects
- Accumulates in bone
- Affects multiple body systems
- Long-term effects include reduced IQ, cardiovascular & renal disease



Children are especially vulnerable

- Greater exposure:
 - spend more time on the ground and in contact with contaminated soil and dust
 - hand-to-mouth activity, mouthing
 - absorb 4–5 times more lead from the gut than adults
- Early childhood is critical period for neurological and organ development
- Damage may be permanent
 - reduced potential for intellectual development
 - increased likelihood of behavioural disorders



Figure 2 – A large quantity of lead paint chips can be seen in this radiograph of the abdomen and pelvis of a 2-year-old boy with lead poisoning.

Pregnant women are vulnerable

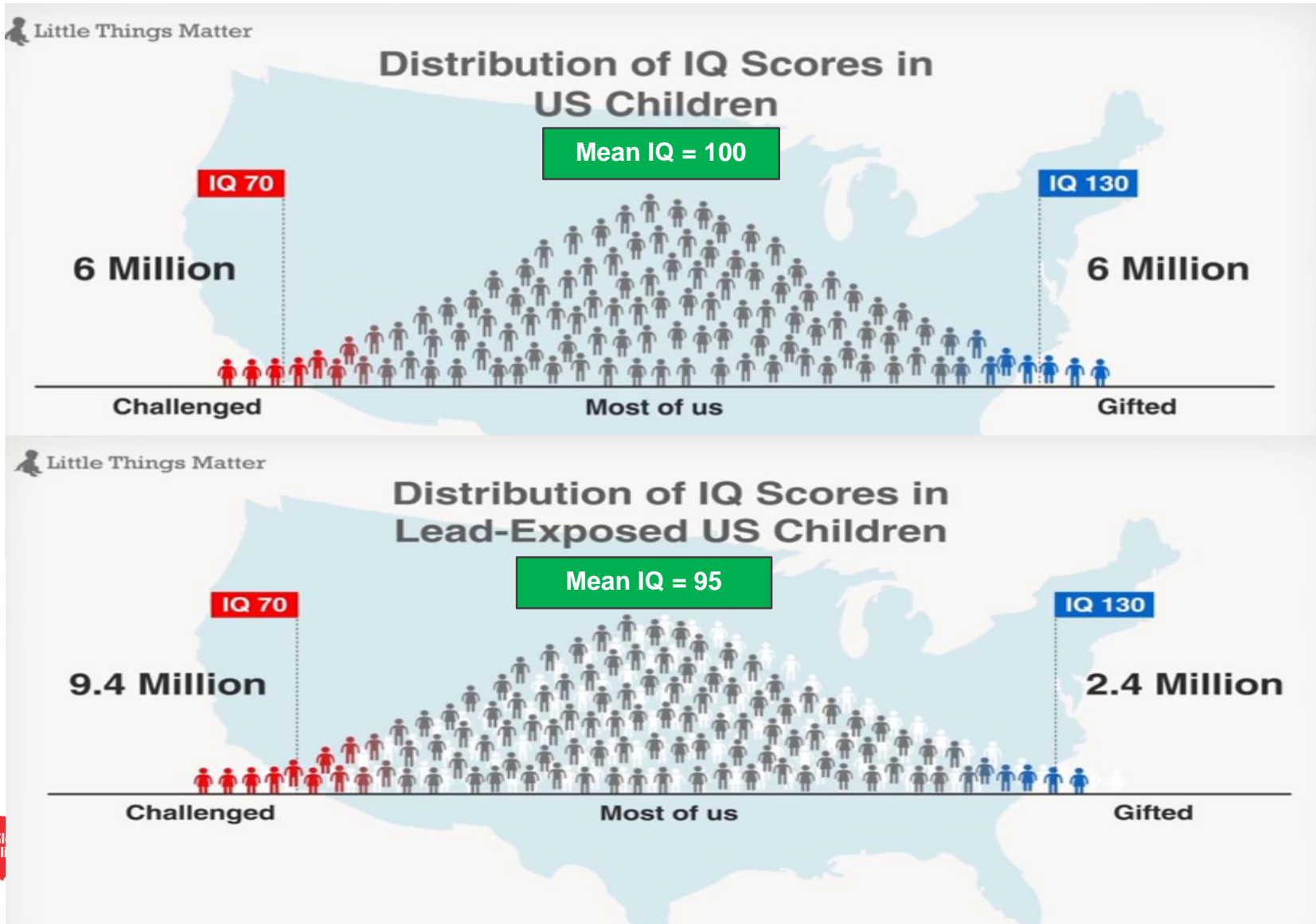
- Pregnancy mobilizes lead stored in bone, releasing it back into blood where it can be circulated to maternal tissues and the fetus
- Increased risk of hypertension during pregnancy
- Lead exposure of pregnant women results in exposure of the fetus – may cause reduced fetal growth

Lead causes significant burden of disease

Estimates from Institute for Health Metrics and Evaluation (IHME), 2017 data

- 1.06 million deaths from long-term effects
- 24.4 million years of healthy life lost (DALYs)
- 63.2% of the global burden of idiopathic developmental intellectual disability
- 10.3% of hypertensive disease
- <https://vizhub.healthdata.org/gbd-compare/>

Small IQ reduction has significant societal impact



Economic costs of lead exposure are high

- Estimated economic losses due to reduced IQ is ~1.2% of global GDP
 - 1% of Jordanian GDP
- Banning lead paint now saves future costs
 - Avoids future costs of lead exposure when lead paint used now e.g. cost of reduced IQ, cost of criminality
 - Avoids future costs of hazard controls for legacy paint e.g. remediation
 - estimated costs of remediating lead-painted homes:
 - France: US\$ 194 – 499 million
 - USA: US\$ 1 – 11 billion

Global Alliance to Eliminate Lead Paint (Lead Paint Alliance)



- Created following request from governments for action on lead paint
 - Started work in 2010
- Voluntary global partnership
 - Led by UN Environment and WHO
 - Partners: governments, NGOs, industry and academia
 - International Advisory Council chaired by US EPA
- Goal: To phase out the manufacture and sale of paints containing lead and, eventually, to eliminate the risks that such paints pose

Lead Paint Alliance supports countries to phase out lead paint



- Technical guidance materials
 - Model Law and Guidance for Regulating Lead Paint
 - Toolkit with information about health and economic impacts, alternatives to lead paint, testing
 - Brief guides to the analysis of lead in paint and lead in blood
- Awareness-raising through International Lead Poisoning Prevention Week
 - Multilingual information materials, posters, infographics, video messages

Links: www.unep.org/noleadinpaint and https://www.who.int/ipcs/lead_campaign/en/

Conclusions

- Lead is a persistent hazard – it remains in the environment, in the home and in the human body
- Lead has wide-ranging effects on health – these have personal, societal and economic impacts
- Lead paint is an important source of exposure to lead
- Prevention through banning lead paint is better (and cheaper) than cure!
- Lead Paint Alliance supports countries to phase out lead paint