

Health impacts of lead exposure



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Outline

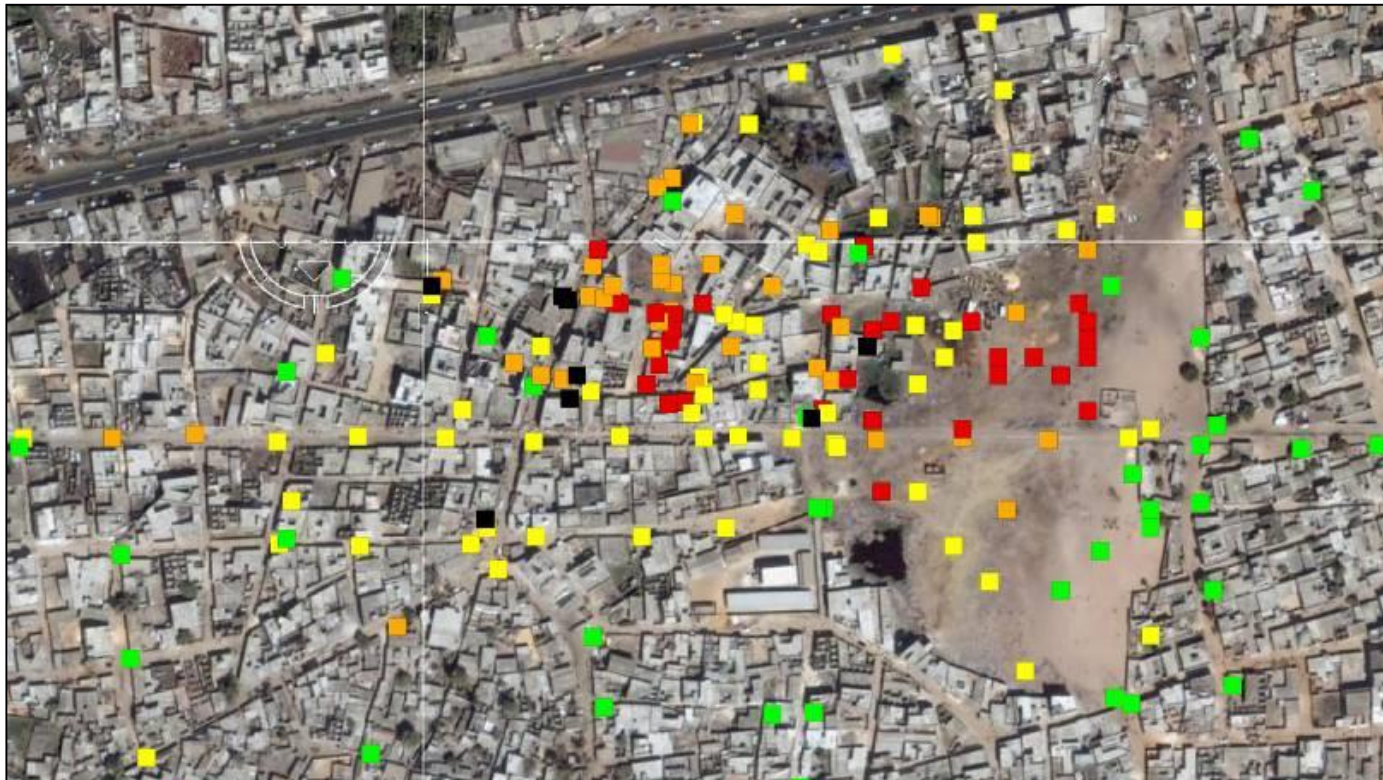
- Sources and routes of exposure
- Health effects
- Social and economic impacts

Lead persists in the environment

- Lead is released as particles and fumes during recycling and deposited on ground and other surfaces
- Lead can remain in the environment indefinitely
- Lead contamination creates a legacy of potential human exposure for years into the future



Environmental contamination can kill (Thiaroye sur Mer, Senegal)



Lead in soil (surface)

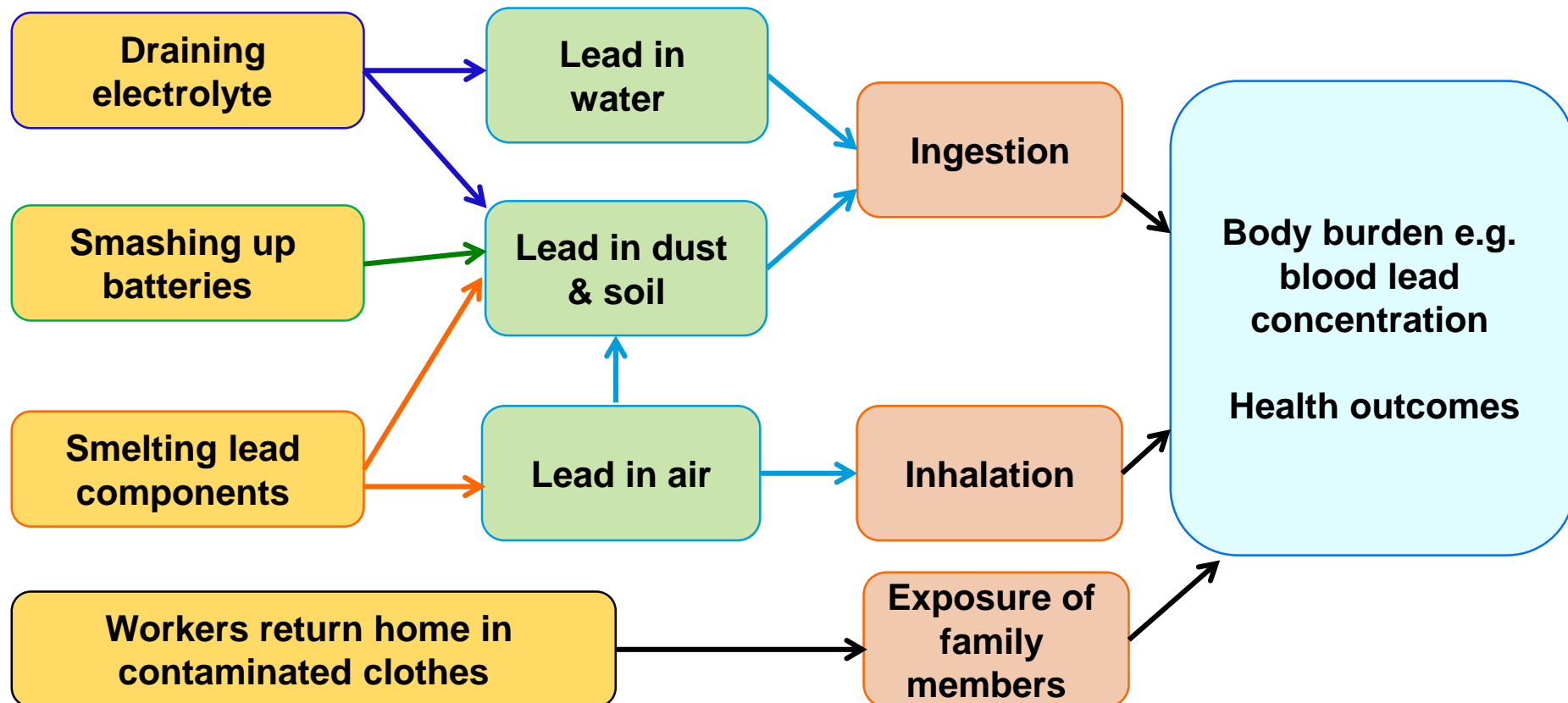


 French limit for residential areas

 French limit for industrial areas

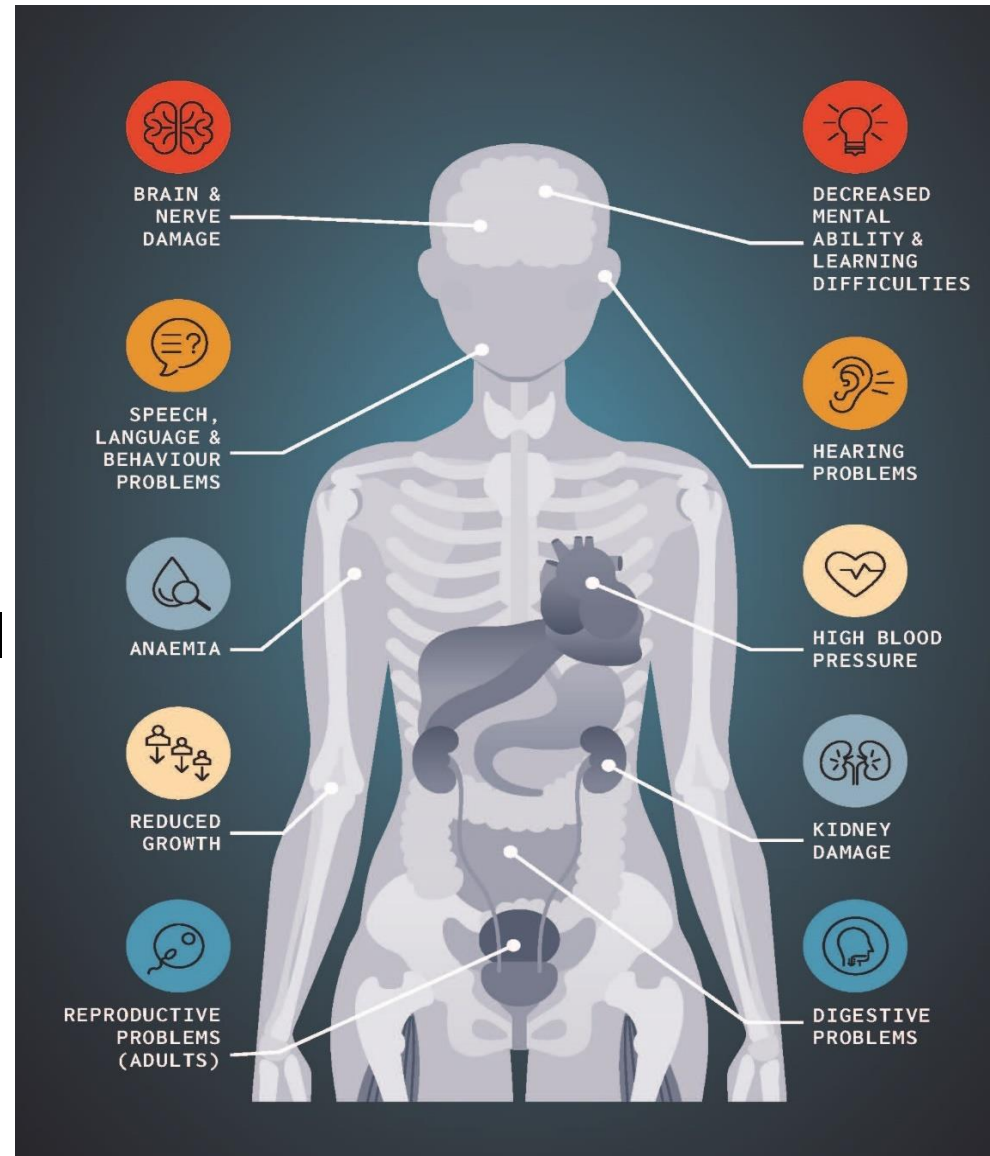
- 18 children died
- 47 required treatment for lead poisoning
- 27 had life-threatening poisoning, some with permanent neurological damage

Multiple sources and pathways of exposure to lead from ULAB recycling



Lead is a multi-system toxicant

- Accumulates in bone
- Affects multiple body systems
- Long-term effects include reduced IQ, cardiovascular & kidney disease, anti-social behaviour
- No known level of exposure without harmful effects

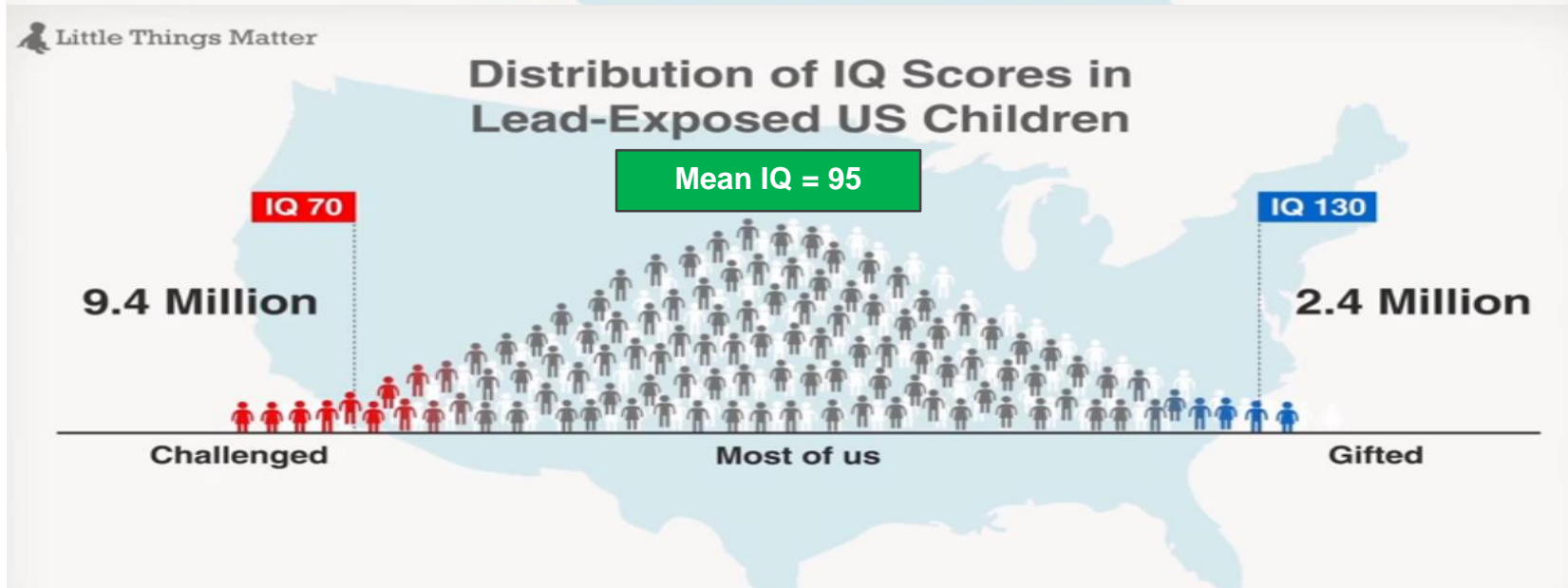
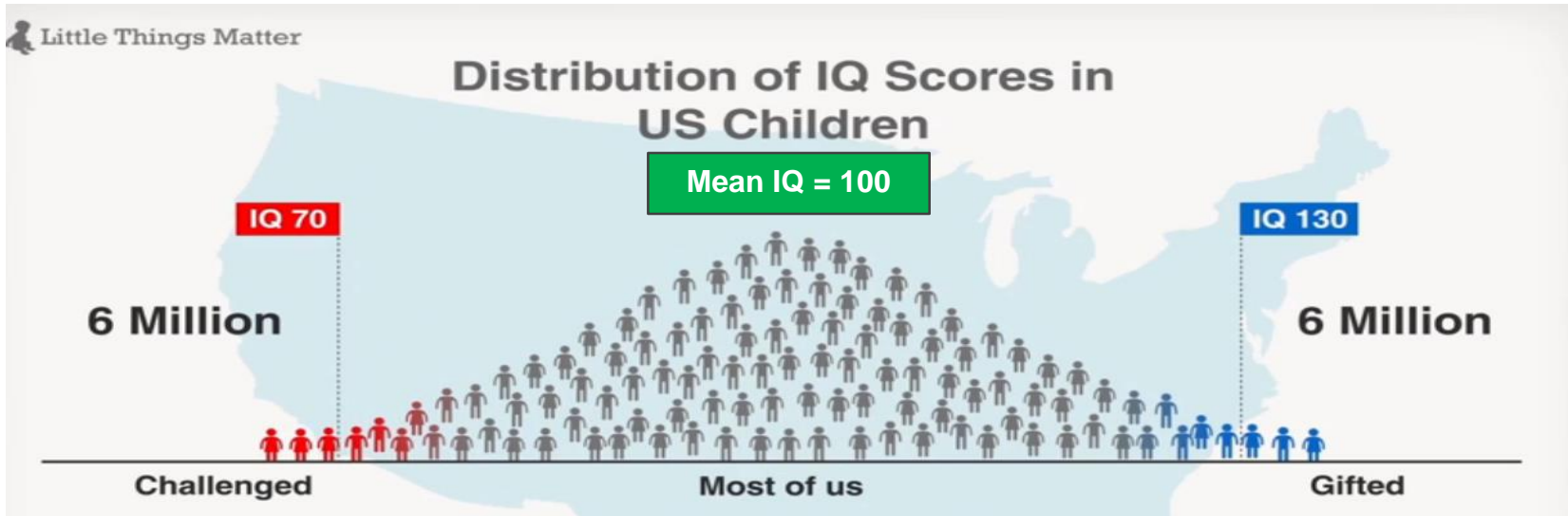


Children are especially vulnerable

- 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



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
 - Largest economic burden is borne by low and middle income countries
- Prevention of lead exposure now saves future costs
 - Avoids future costs of lead exposure e.g. cost of reduced IQ, cost of anti-social behaviour
 - Avoids future costs of hazard controls for contaminated areas e.g. remediation

Conclusions

- Lead is a persistent hazard – it remains in the environment and in the human body
- ULAB recycling is an important source of lead exposure
- Lead has wide-ranging effects on health – these have personal, societal and economic impacts
- Prevention of exposure is essential

Recycling used lead-acid batteries:
health considerations



Reciclaje de baterías de plomo-ácido usadas:
consideraciones sanitarias



回收
废旧铅酸电池

对卫生部门公布的简要信息



Recyclage des batteries au plomb usagées :
considérations sanitaires



Переработка отработанных
свинцово-кислотных
аккумуляторных батарей

Краткая информация для
сектора здравоохранения



إعادة تدوير بطاريات
الرصاص الحمضية المستعملة:

معلومات موجزة مقدمة
للقطاع الصحي

