Update on benefits assessments

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Updates

- NO_2 and health
- Updated UK damage costs
  - https://www.gov.uk/guidance/air-quality-economic-analysis
- Update of damage per tonne pollutant estimates from the European Environment Agency

NO_2 and health

- HRAPIE study (WHO, for DG ENV, 2013)
  - http://www.euro.who.int/en/health-topics/environment-and-health/air-quality/publications/2013/health-risks-of-air-pollution-in-europe-hrapie-project.-recommendations-for-concentrationresponse-functions-for-costbenefit-analysis-of-particulate-matter,-ozone-and-nitrogen-dioxide
- DG ENV funded study (2017)
  - http://ec.europa.eu/environment/air/publications/models.htm
- COMEAP (UK Committee on the Medical Effects of Air Pollutants)
  - Final statement: https://www.gov.uk/government/publications/nitrogen-dioxide-effects-on-mortality

COMEAP NO_2 study

- Systematic review of cohort studies
- Challenging read! Divergent views within the committee
  - The majority favoured quantification
  - Some did not
- No evidence for thresholds
- Lower central value for risk coefficient than HRAPIE

COMEAP NO_2 study

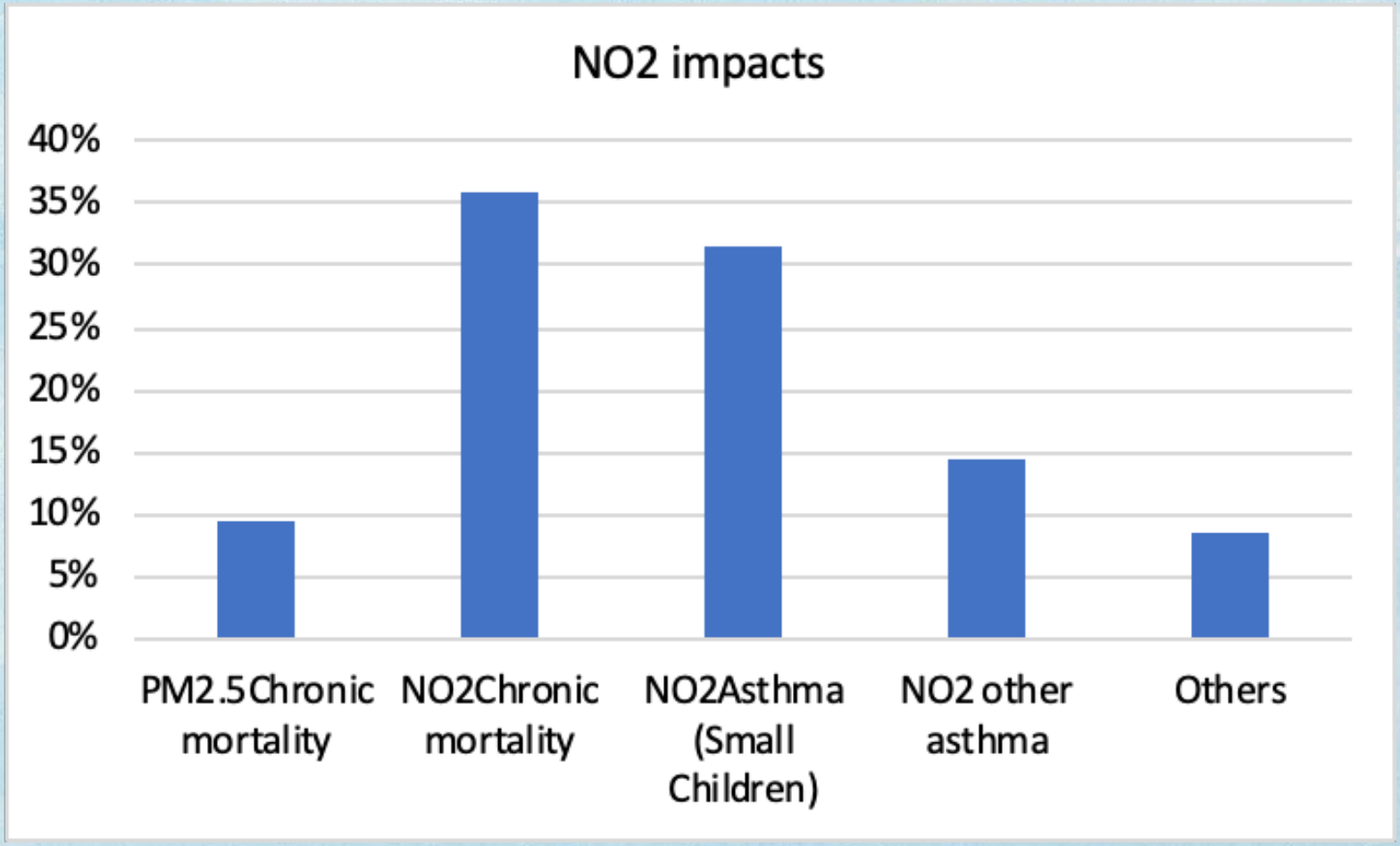
- Separate recommendations for quantification of effects of:
  - Interventions that target traffic pollution
    - Apply unadjusted NO_2 coefficient (1.023 (95% CI: 1.008, 1.037 per 10 µg/m^3 annual average NO_2)
  - Interventions that primarily target NO_2
    - Apply reduced coefficient within the range of 1.006 to 1.013 per 10 µg/m^3 of NO_2 (noting dissenting view)
- Effects of secondary nitrate formation considered additive in both cases

Revised Defra damage costs

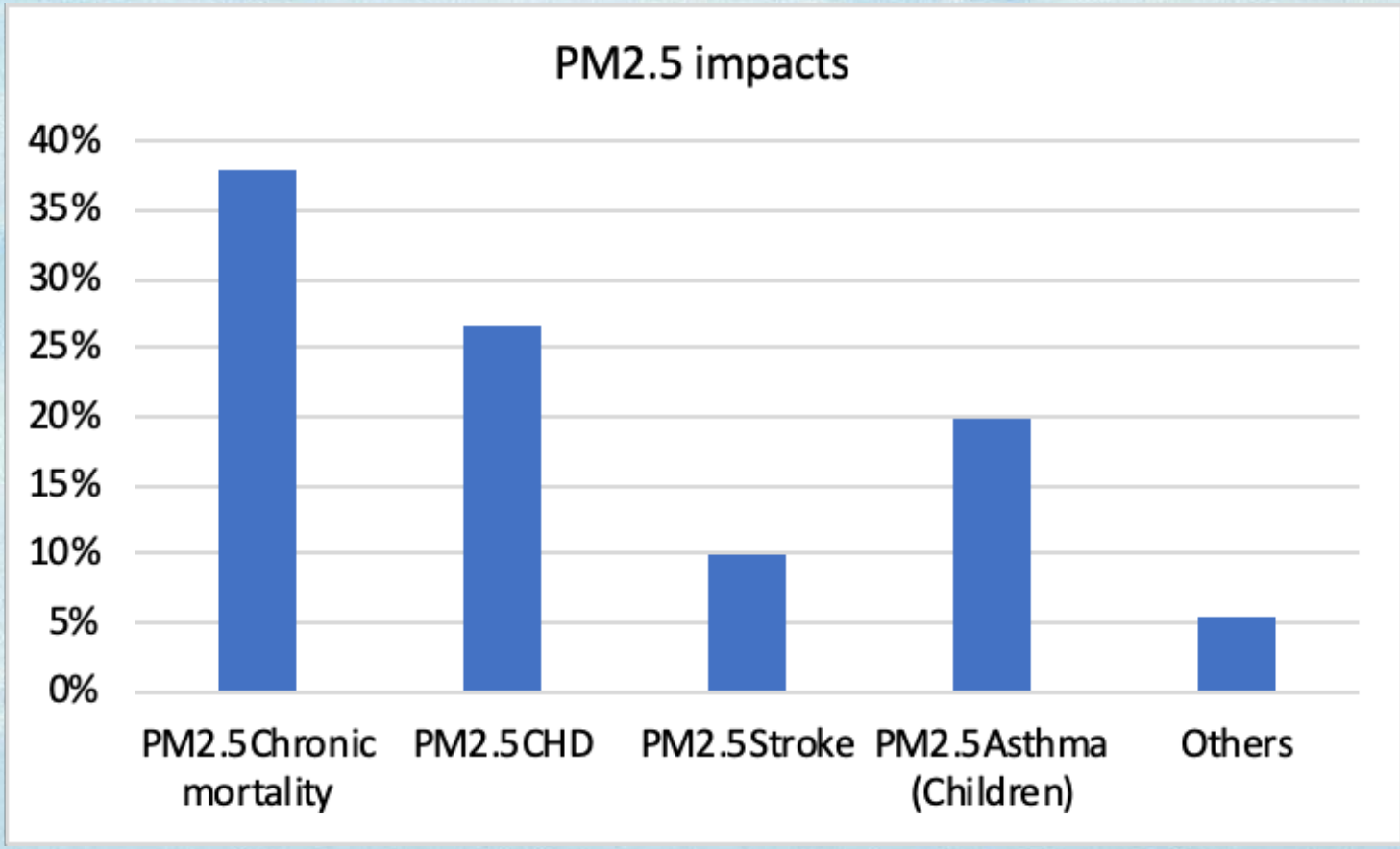
- Central case estimates
  - Significant differences to earlier estimates and those made elsewhere

Central case	£(GBP)/tonne
NOX National	6,199
SO2 National	6,273
NH3 National	6,046
VOC National	102
PM2.5 National	105,836

Revised Defra damage costs



Revised Defra damage costs



Update of EEA damage costs

- Previous estimates provided in:
  - https://www.eea.europa.eu/publications/costs-of-air-pollution-2008-2012
- Update underway
  - 2019: review of current practive
  - 2020: revised modelling and calculation
- Issues being considered
  - Better account of sectoral differences
  - Need for regionalization of damage costs
  - Updates on response functions, etc.

External costs and the polluter pays principle

- PPP: the party responsible for pollution is responsible for associated damage
- No national dimension: responsibility extends to wherever damage arises
- Climate change: principle is well accepted
- Air pollution: principle is increasingly not being applied, e.g. in estimation of damage costs per tonne pollutant. Why not?