

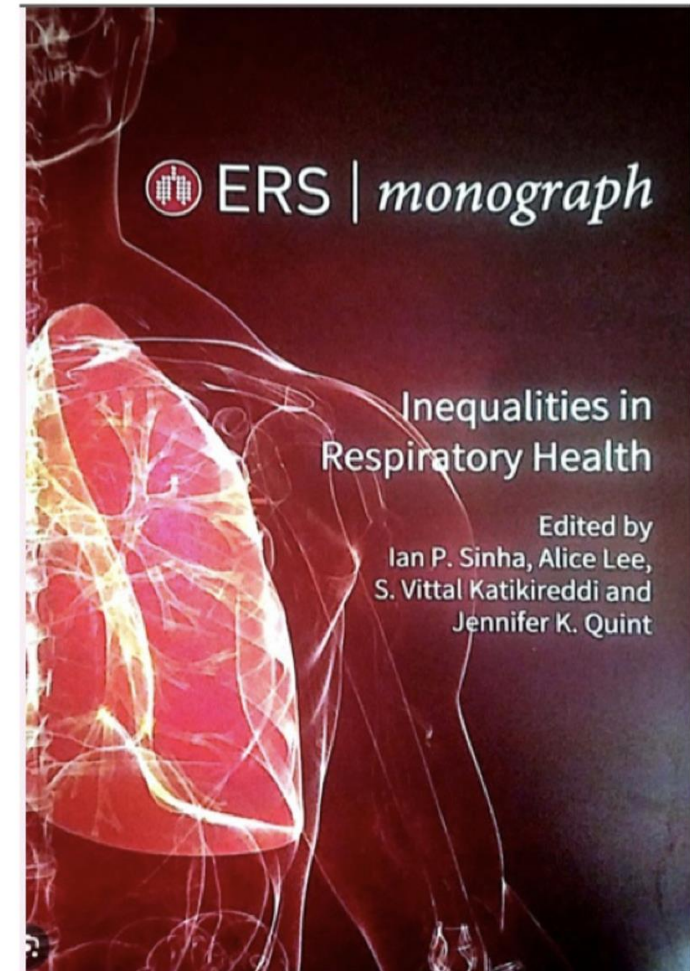
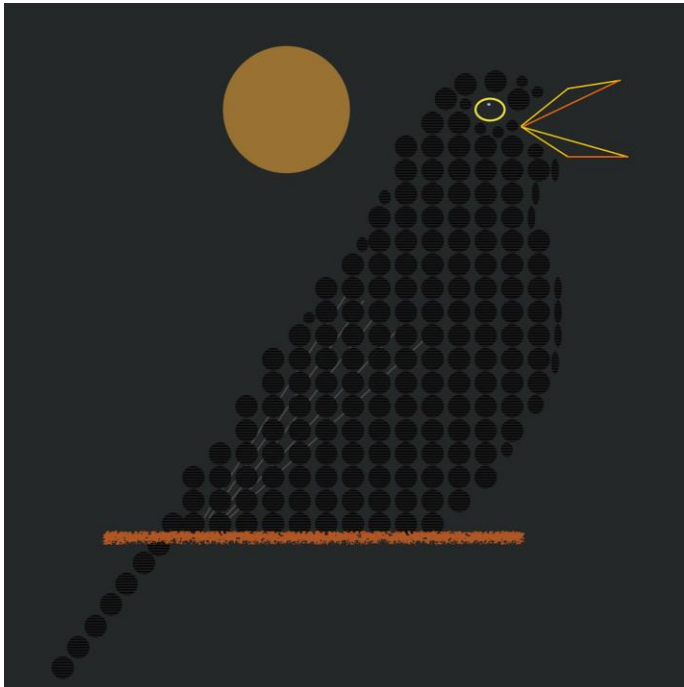
Poverty and Respiratory Health

Ian Sinha

Alder Hey Children's Hospital

Aims

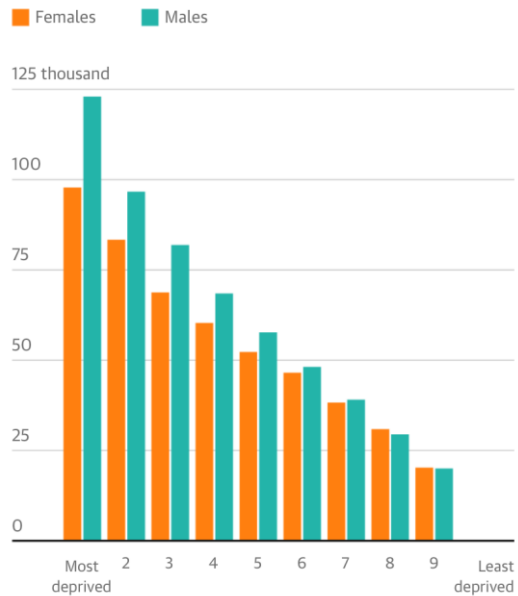
- Discuss how poverty impacts on the respiratory system
- Consider fresh approaches to the problem



...dramatically worse by
 austerity, is a shocking political
 failure. The worse health of the more deprived
 90% of the population, compared to the best-off
 10%, means that health inequalities involve the

Excess deaths in England, 2011 to 2019

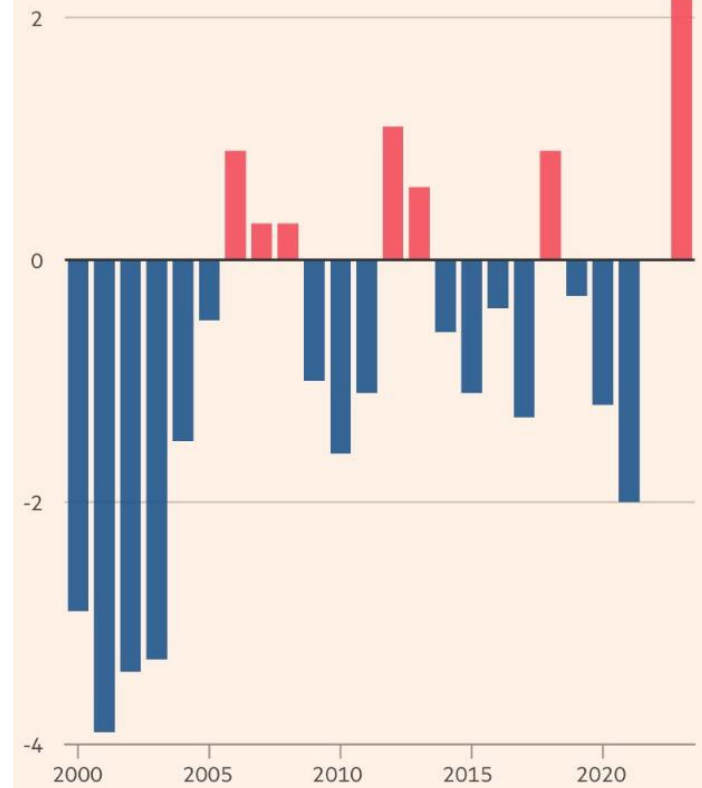
Number of people who died earlier than they would have done if they had lived in areas with the same age and sex-specific death rates as the least deprived area decile



Guardian graphic. Source: Institute of Health Equity. Note: based on the Index of Multiple Deprivation 2019

Record increase in the absolute child poverty rate in 2022-23

Annual percentage point change in the UK's absolute child poverty rate



©FT

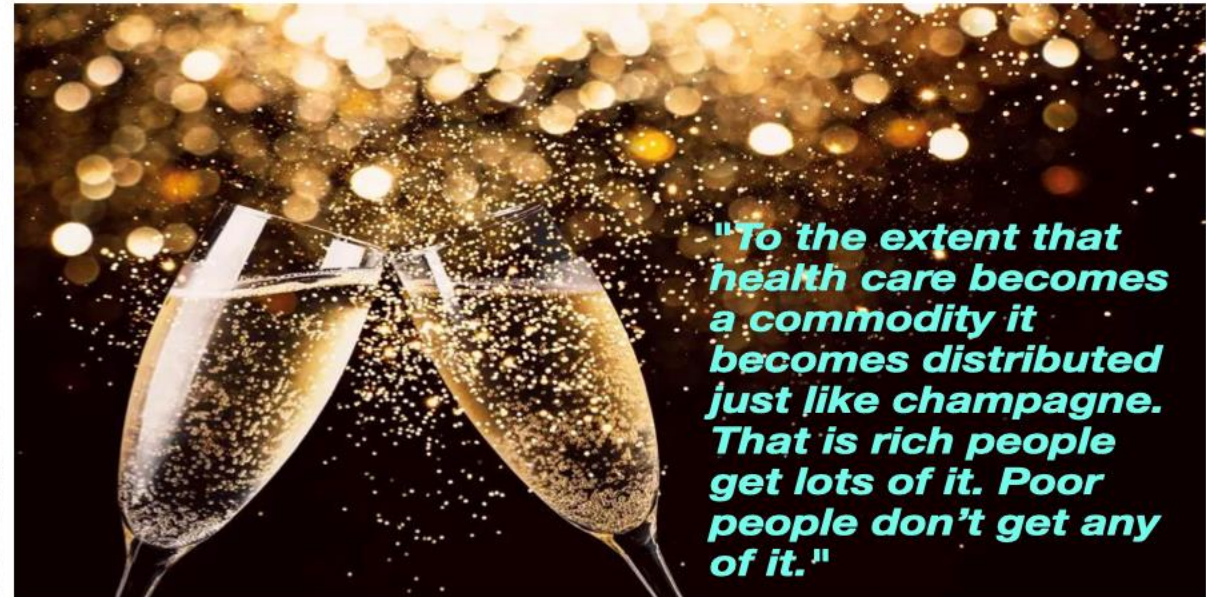
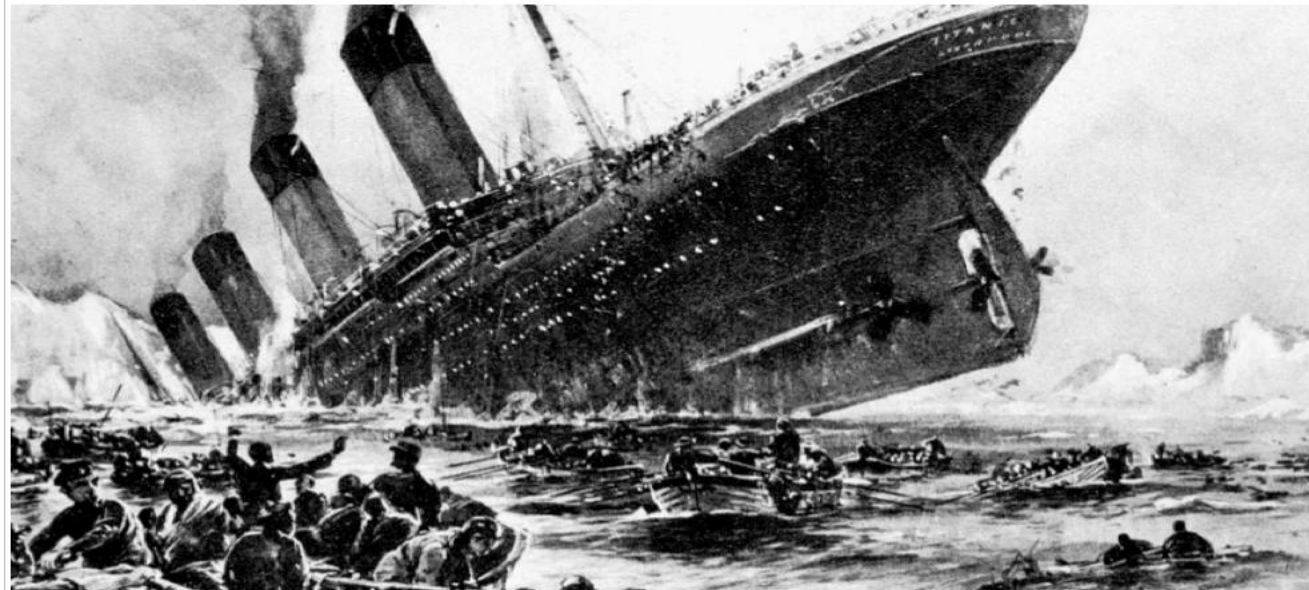
Source: DWP • Financial year ending in year shown. Absolute poverty threshold: 60% of 2010-11 inflation-adjusted median income after housing costs. Data in 2021 and 2022 affected by the pandemic

Two key points around determinants of health

**History tells us that vulnerable people
lose out most**

**The 'Inverse Care Law'
(Julian Tudor Hart, 1971)**

"The availability of good medical care tends to vary inversely with the need for it in the population served."



"To the extent that health care becomes a commodity it becomes distributed just like champagne. That is rich people get lots of it. Poor people don't get any of it."

The Inverse Care Law: Poverty is pervasive

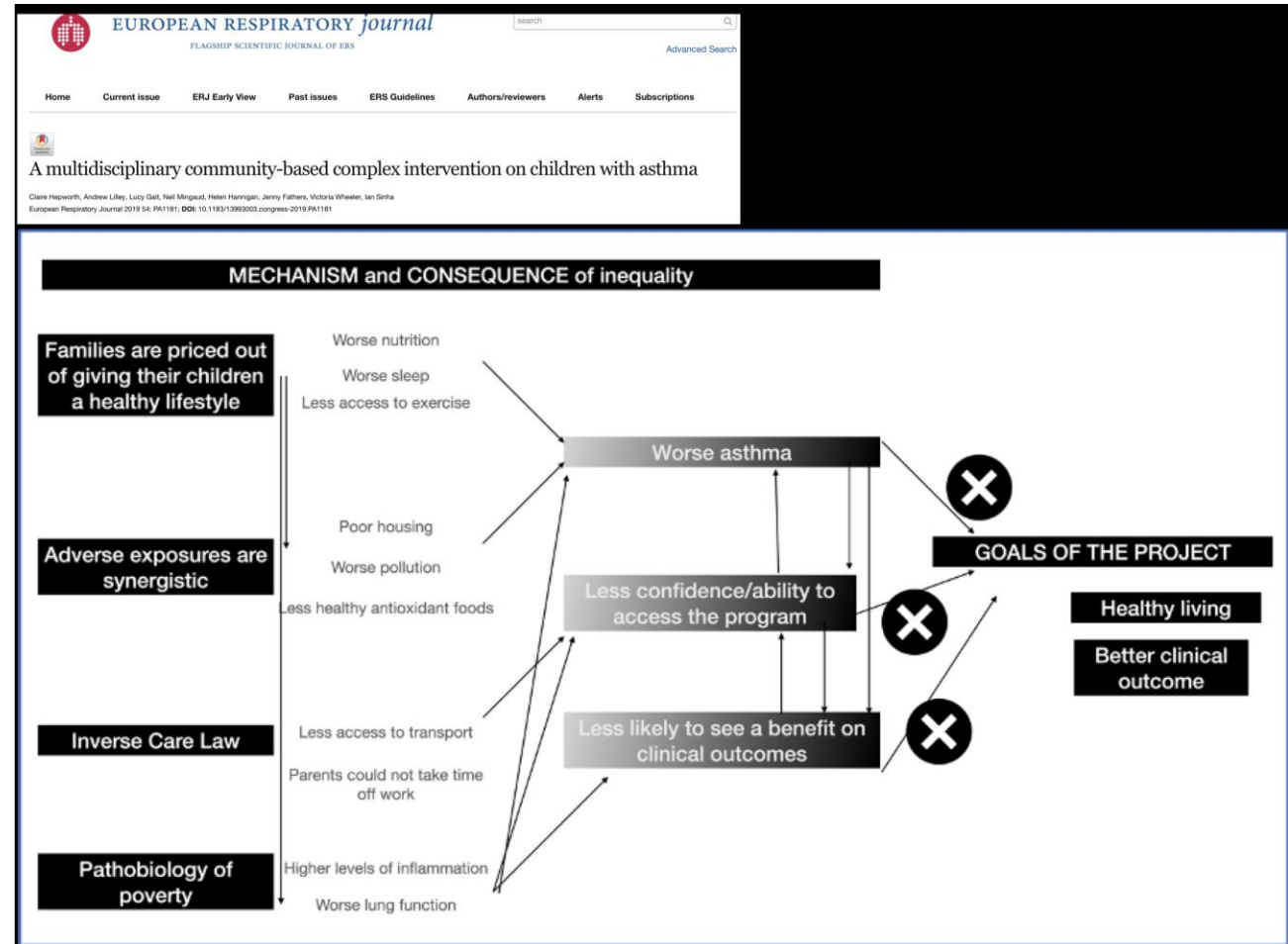
Review

Empowering children and young people who have asthma

Ian P Sinha^{1,2}, Lynsey Brown,¹ Olivia Fulton,¹ Lucy Gait,¹ Christopher Grime,¹ Claire Hepworth,¹ Andrew Lilley,¹ Morgan Murray,¹ Justus Simba^{1,3}

Arch Dis Child 2021;106:125–129. doi:10.1136/archdischild-2020-318788

The aim of empowering young people with asthma is to give them control over their health and their lives. Socioeconomic deprivation is disempowering because it limits the lifestyle choices that people are able to make. Families living in poverty may have reduced access to healthy foods and resources to enable physical exercise. When promoting healthy lifestyles, professionals should be sensitive to the barriers that limit peoples' choices when they live in poverty. At a wider level, national and

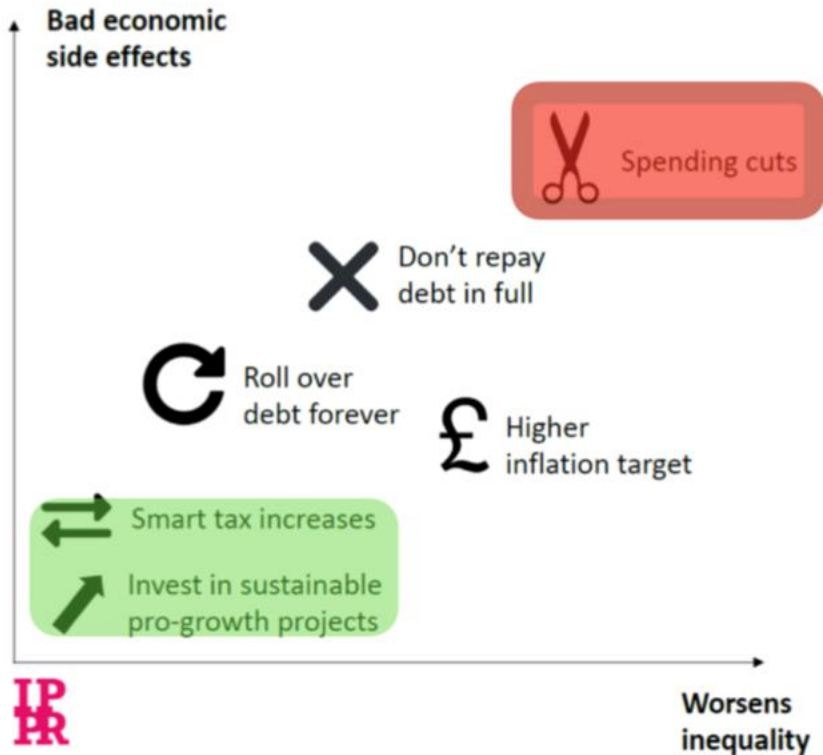




Austerity is not the answer



Policy options for keeping debt sustainable post Covid-19

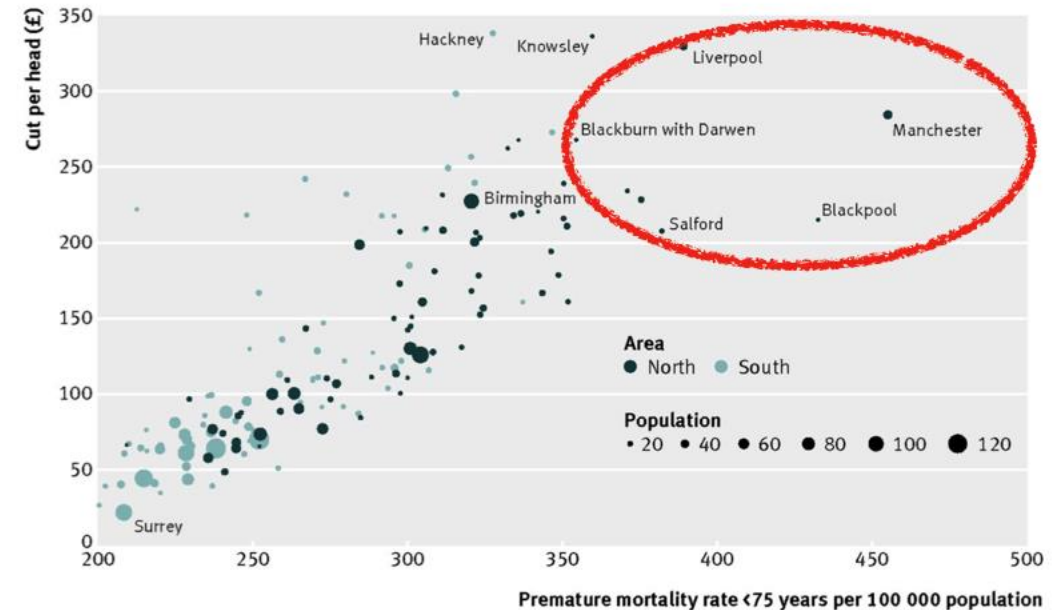


LETTERS

PREMATURE DEATHS ACROSS ENGLAND

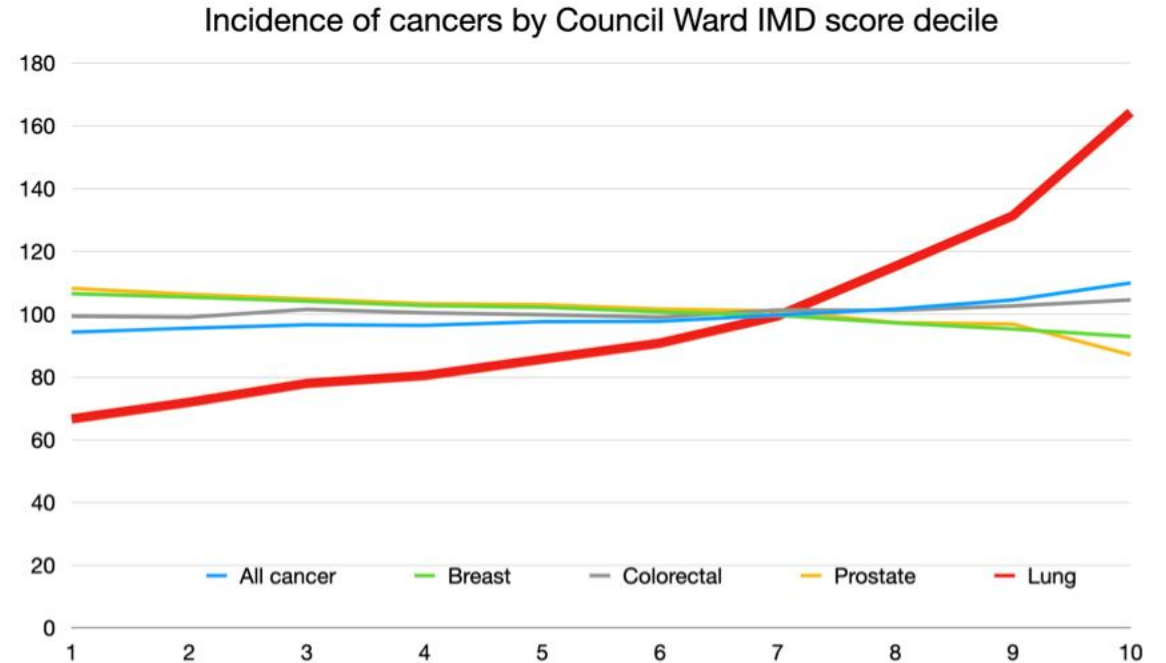
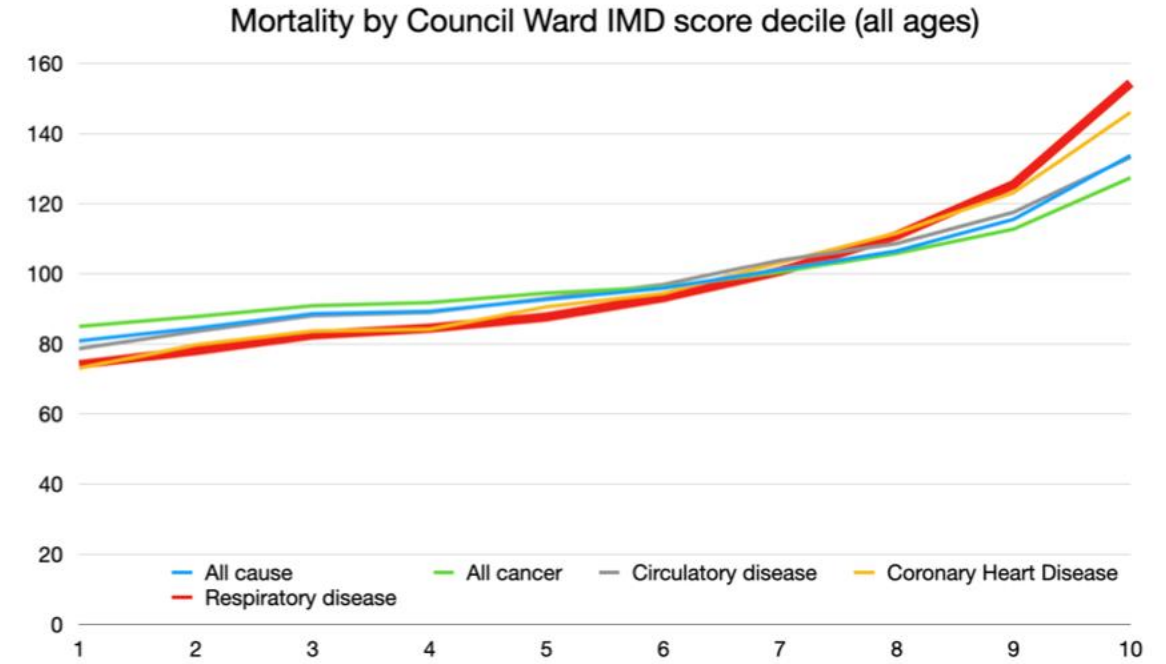
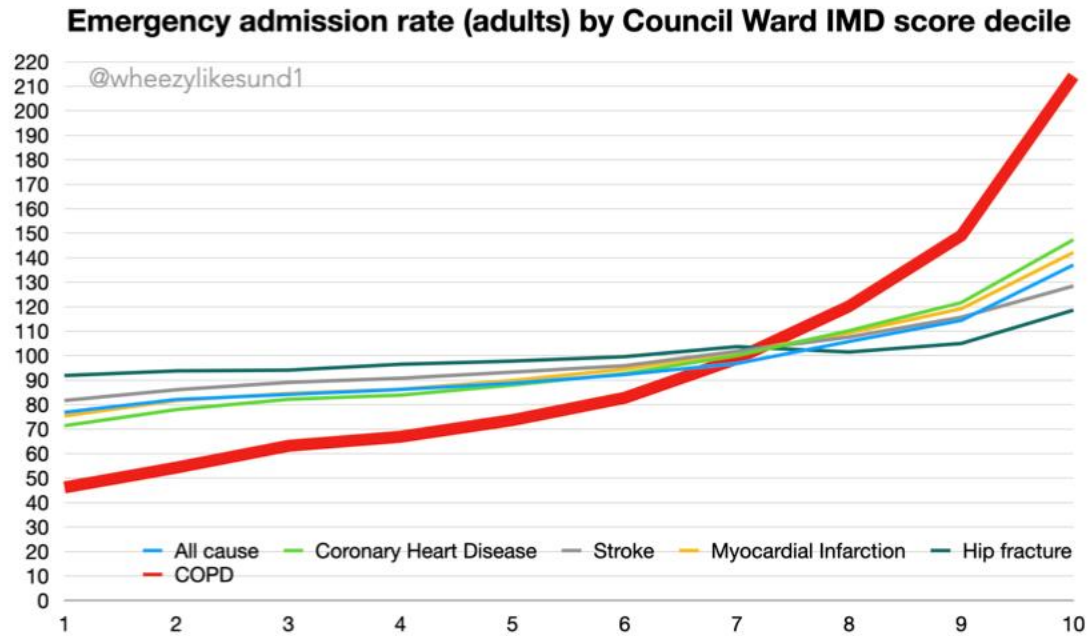
Austerity measures hit the sickest hardest

David Taylor-Robinson *Medical Research Council population health scientist*¹, Rachael Gosling *consultant in public health*², Dominic Harrison *director of public health*³, Mohammed Khan *deputy leader and executive member for health and adult social care*³, Ben Barr *senior clinical lecturer in applied public health*¹



The respiratory system is PARTICULARLY vulnerable to poverty

Data from Lee et al 2022; presented at ERS





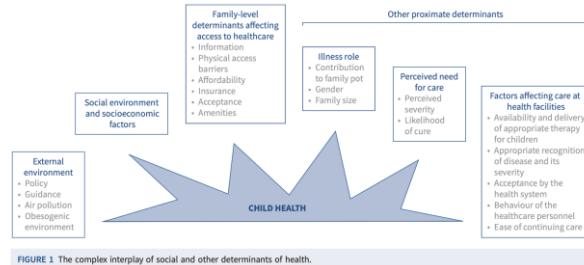
Social determinants of respiratory health from birth: still of concern in the 21st century?

Andrew Bush¹, Catherine A. Byrnes², Kate C. Chan³, Anne B. Chang⁴, Juliana C. Ferreira⁵, Karl A. Holden⁶, Stephanie Lovinsky-Desir⁷, Gregory Redding⁸, Varinder Singh⁹, Ian P. Sinha^{6,10} and Heather J. Zar¹¹

Number 2 in the Series "Environment and lung health in a rapidly changing world"

Edited by Sara de Matteis, Catherine M. Greene, Zorana Jovanovic Andersen and Renata L. Riha

The key themes are societal, governmental and corporate vectors of respiratory disease, with fatal consequences. There is a rich economy in the UK, but this does not counteract the aforementioned policy failures, which will have consequences for decades to come, especially in the poorest communities.



Child poverty and health inequalities in the UK: a guide for paediatricians

Alice R Lee,^{1,2} Camilla C Kingdon,³ Max Davie,⁴ Daniel Hawcutt^{5,6} and Ian P Sinha^{1,2}

Insufficient financial income



Inadequate National Living Wage

Gender imbalance in employment and pay - including drop in earnings related to motherhood

Inadequate worker's rights and protections

Insufficient benefits

Mothers are at particular risk of the drivers of poverty, and children bear the brunt

Lee et al 2022

High financial outgoings



Accommodation
Food
Childcare
School provisions
Connectivity
Fuel

Low financial resilience



Inadequate money for savings
Inability to call on family and friends

Acute shocks to the system



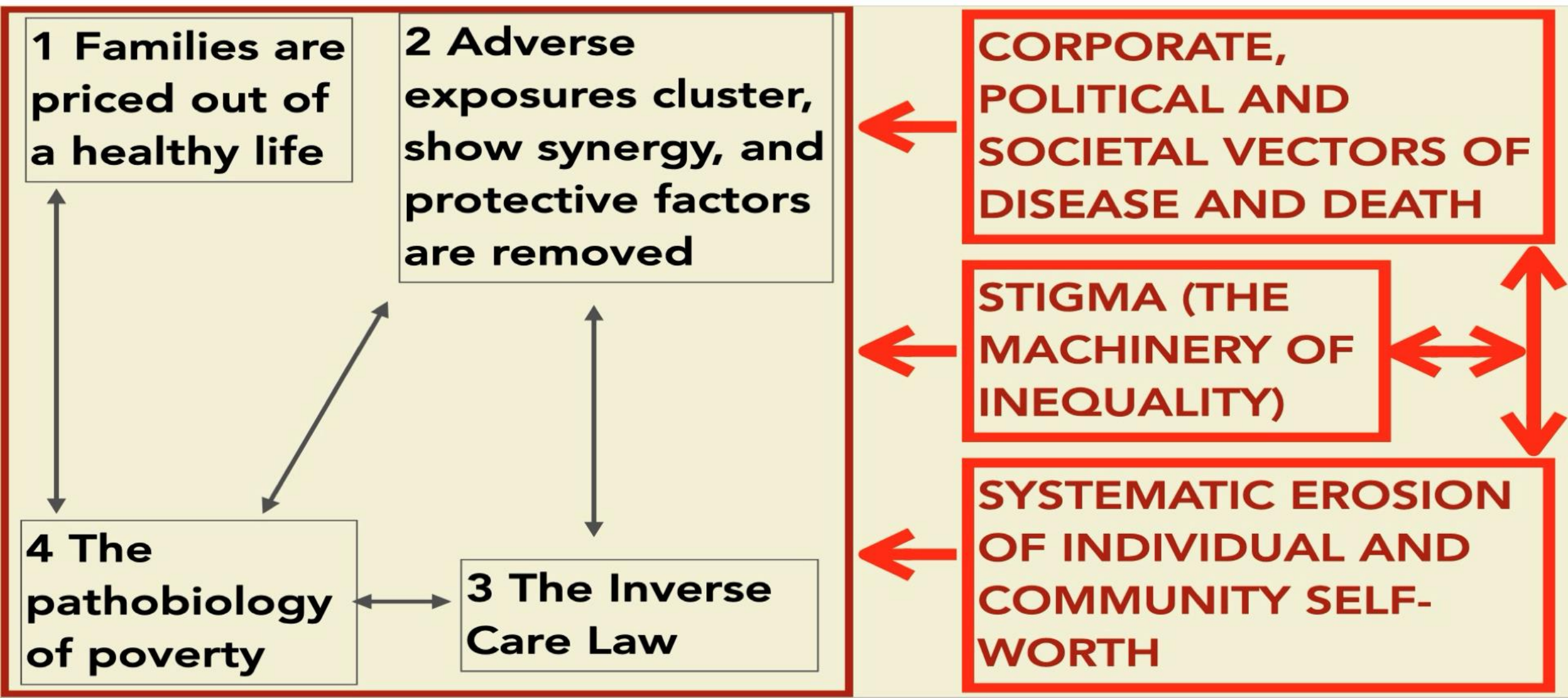
Loss of earnings
Benefits sanctions
Unexpected urgent costs



Debt

Less opportunities for children





SOME CHILDREN HAVE RESTRICTED OPPORTUNITIES TO THE RIGHT TO BE HEALTHY

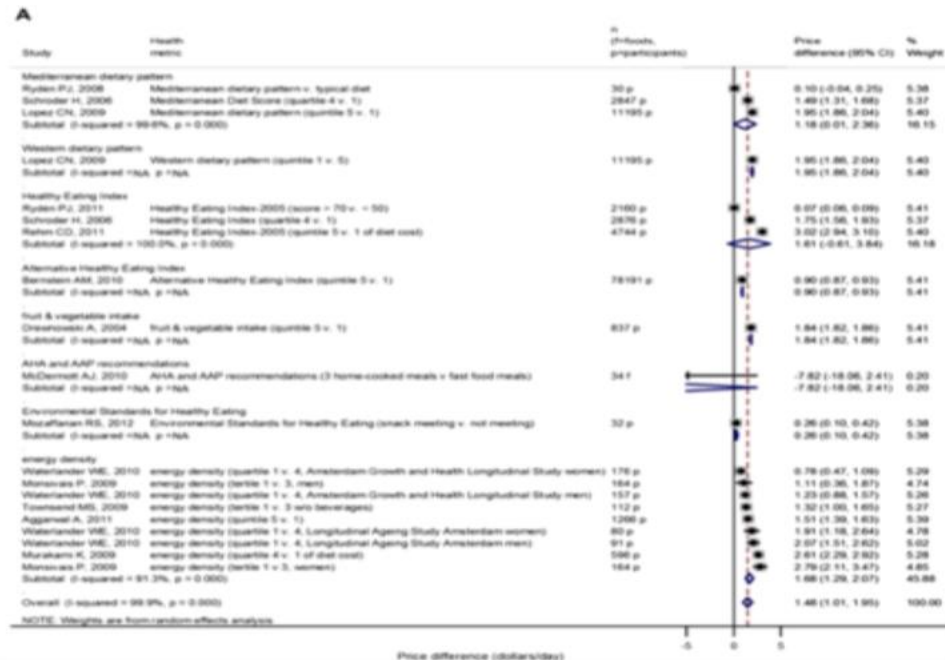


Harvard School of Public Health: Healthy food \$1.48 more expensive/ day

Open Access Research

BMJ Open Do healthier foods and diet patterns cost more than less healthy options? A systematic review and meta-analysis

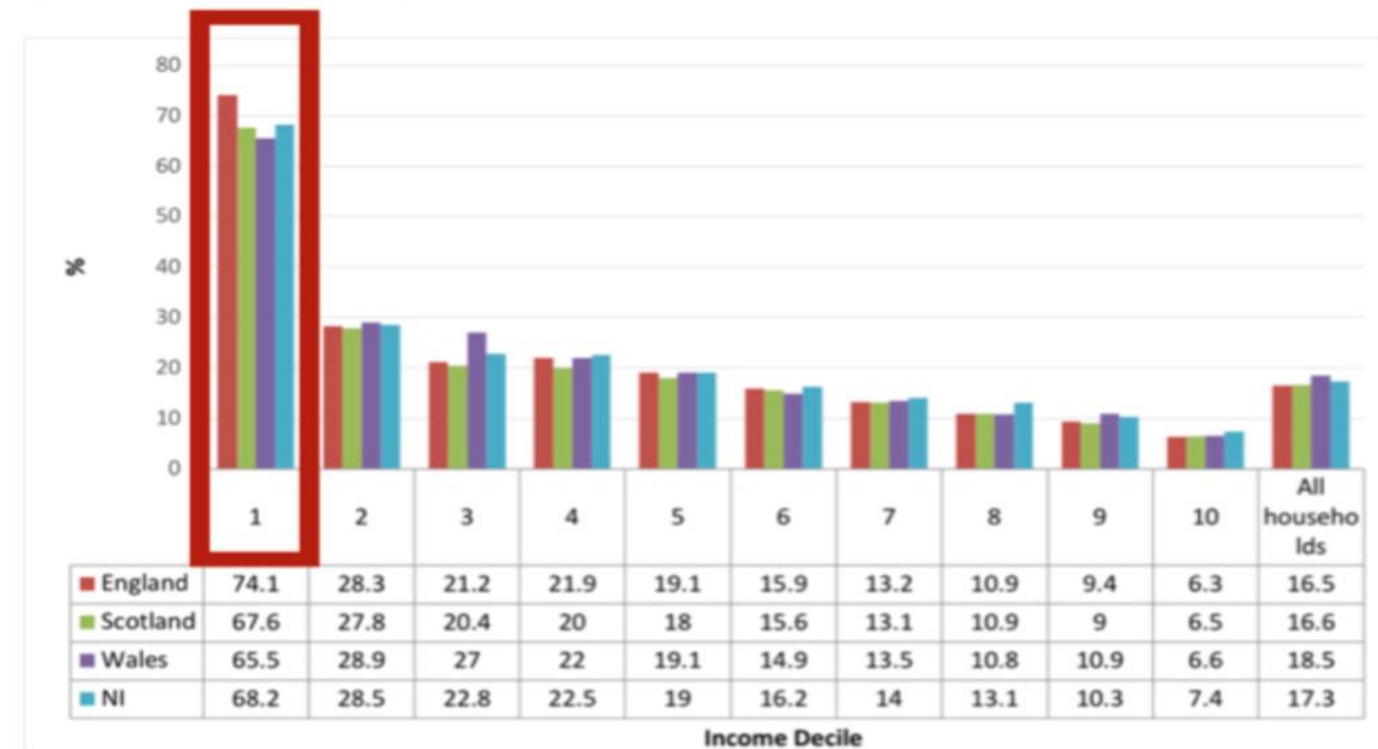
Mayuree Rao,^{1,2} Ashkan Afshin,² Gitanjali Singh,³ Dariush Mozaffarian^{2,3,4}



Affordability of the UK's Eatwell Guide

Courtney Scott, Jennifer Sutherland, Anna Taylor
September 2018

Figure 1: Median percentage of disposable income AHC used up if Eatwell guide cost was spent, by income decile and country



A Toolkit for Child Health Inequalities

Review

Child poverty and health inequalities in the UK: a guide for paediatricians

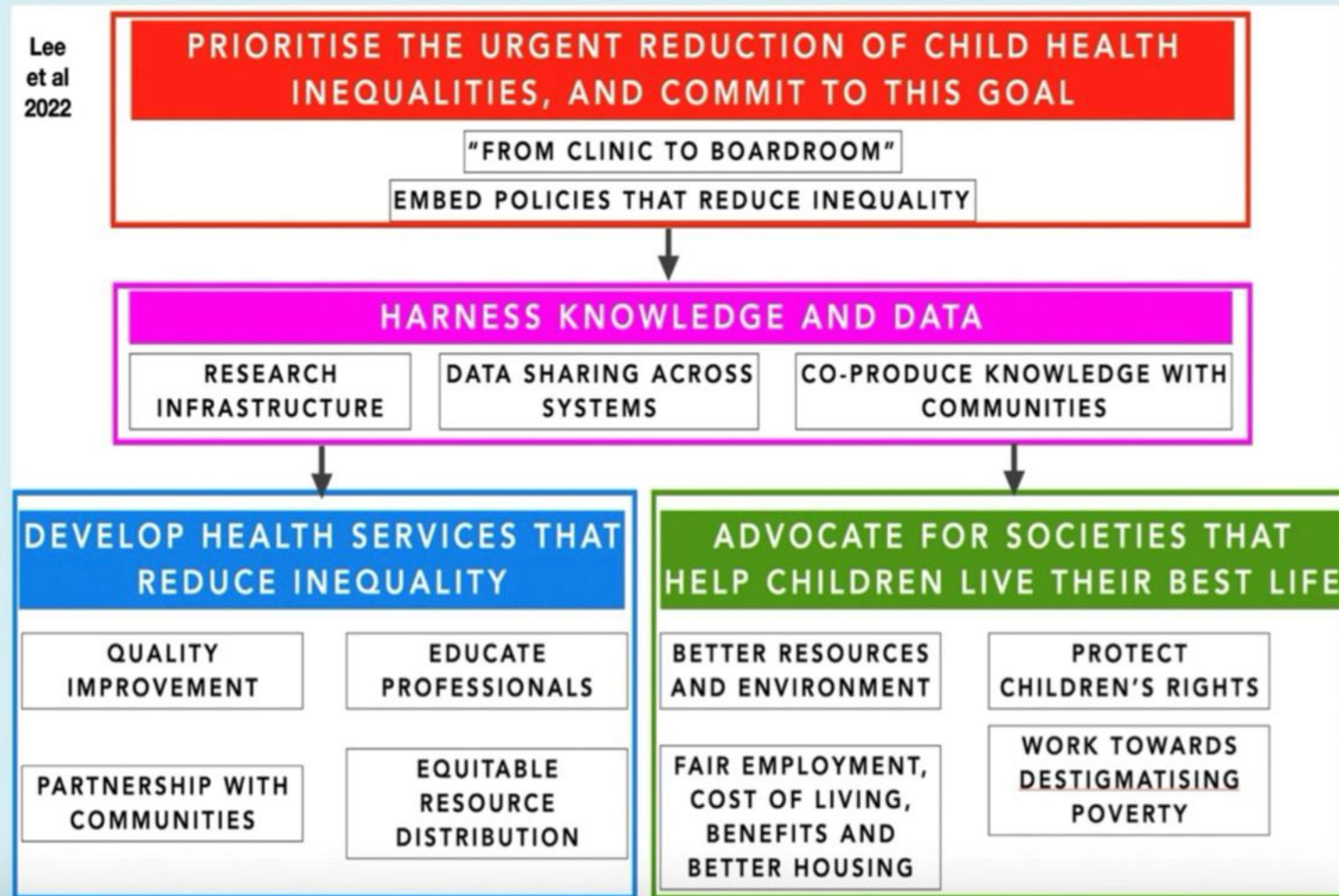
Alice R Lee,^{1,2} Camilla C Kingdon,³ Max Davie,⁴ Daniel Hawcutt,^{5,6} Ian P Sinha^{1,2}

ADC 2023;108:94-101.

Alice.lee@alderhey.nhs.uk



Lee et al 2022



Reducing asthma inequalities with Evidence-based, Data-driven, Person-Centered Care

ERS CONGRESS | 2024

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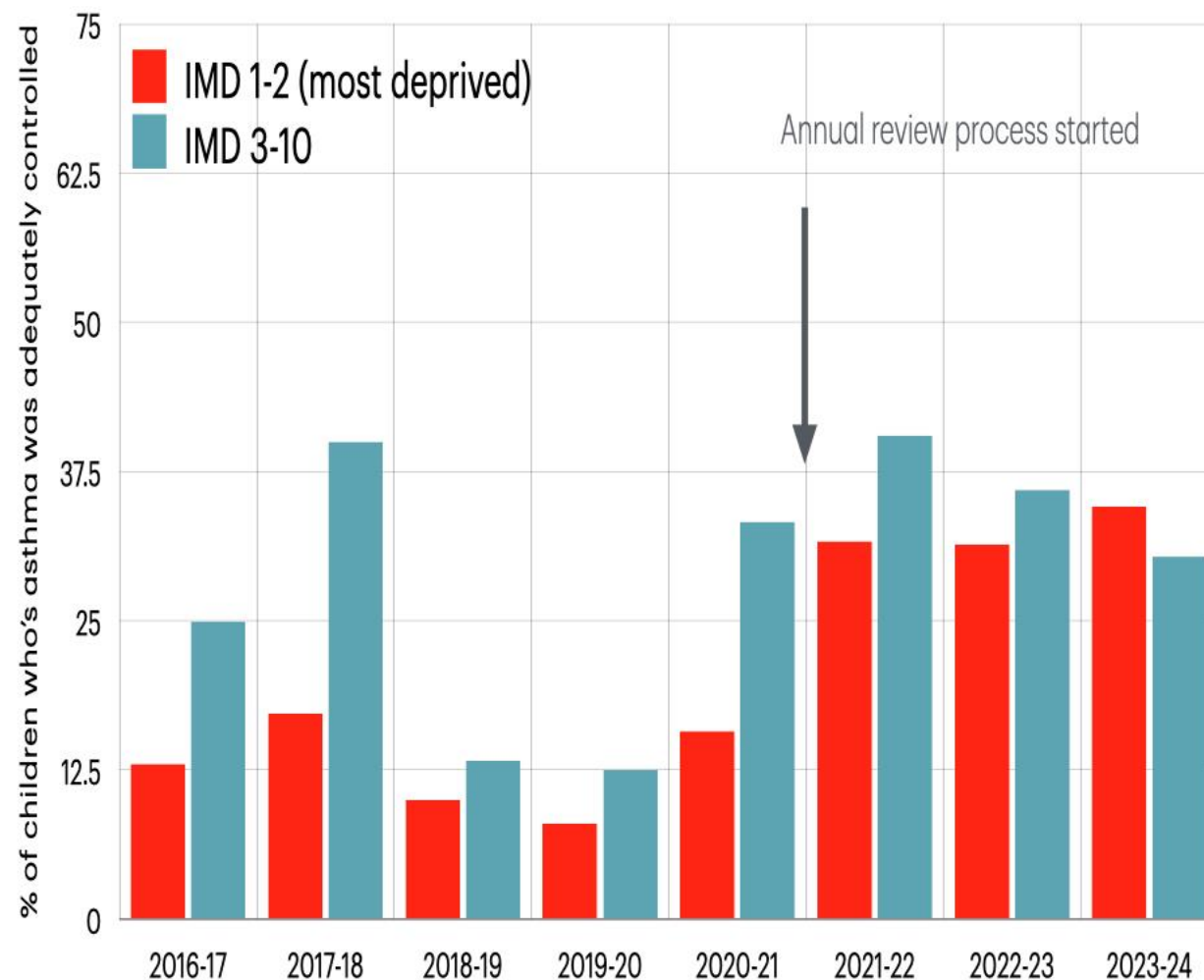
MDAS@alderhey.nhs.uk



Being empowered (Sinha et al , ADC 2020):

- Tailor the condition around your life
- Ability to self-manage
- Making shared decisions

% of children achieving asthma control each year



Our "Clean Air Clinic"

EVIDENCE BASED

DATA-DRIVEN

PERSON-CENTERED ADVOCACY

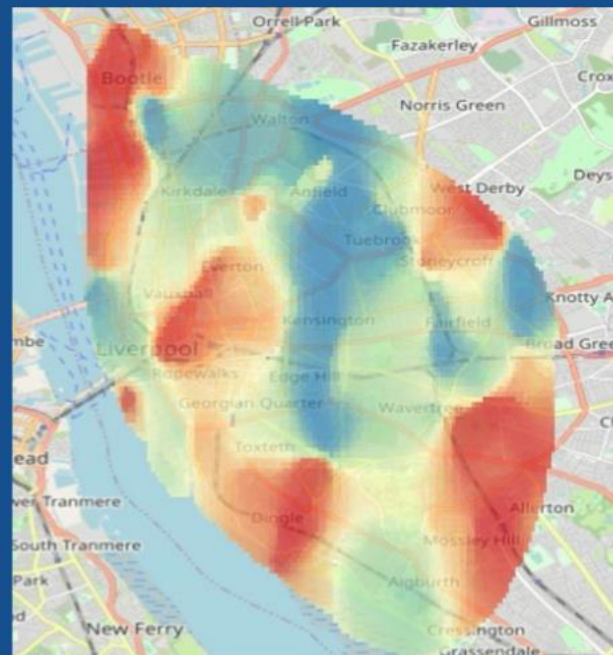
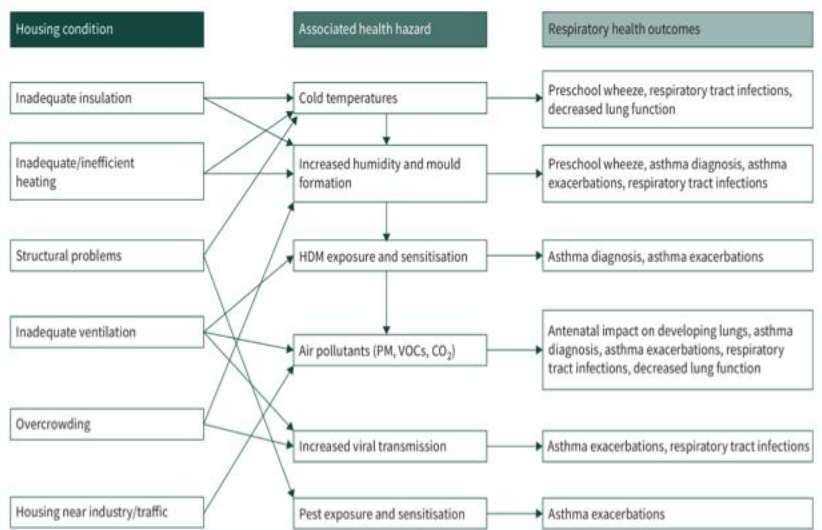


BREATHE
REVIEW
K.A. HOLDEN ET AL.

The impact of poor housing and indoor air quality on respiratory health in children



Karl A. Holden^{1,2,5}, Alice R. Lee^{1,2,5}, Daniel B. Hawcutt^{2,3} and Ian P. Sinha^{2,4}



Asthma vs PM2.5 Geographical Pearson Correlation Coefficient



PA3147

Use of air purifiers in the home to improve asthma outcomes in children and young people (CYP): pilot study follow-up
Karl Holden (Liverpool, United Kingdom), Daniel Hawcutt, Ian Sinha

POVERTY-PROOFING HEALTH SERVICES

The screenshot shows the website for Children North East. At the top, there is a navigation bar with 'Donate', 'Volunteer', and 'Contact' buttons. Below this is a banner with the text 'Supporting you to understand and mitigate the impact of poverty'. The main content area is titled 'Poverty Proofing© Services' and features three cards:

- Poverty Proofing the School Day**: A nationally recognised tool, supporting
- Poverty Proofing Healthcare Settings**: Supporting healthcare settings to minimise
- Poverty Proofing© Culture**: Supporting inclusive access to arts.

The screenshot shows a preprint article on medRxiv & bioRxiv. The title is 'Poverty Proofing health care: a qualitative study of barriers to accessing health care for low income families with children in Northern England'. The authors listed are Elaine Bidmead, Louise Hayes, Emma Leggott, Josephine Wildman, Judith Rankin, Luke Bramhall, Liz Todd, and Laura Mazzoli-Smith. The DOI is https://doi.org/10.1101/2023.10.04.23296541. The article was posted on October 16, 2023.

- Pressures of living in poverty
- Hidden costs (transport, subsistence during hospital attendance, discharge from hospital, parking costs, impact on income)
- Securing appointments (digital, GP, dental, navigating and negotiating appointments, appointment times, childcare)
- Relationships with healthcare providers
- Awareness of financial assistance for health-related costs

“Human rights are the greatest human invention in history”

Predrag Stakic, Serbian Human Rights Activist

- Rights are universal, inalienable, indivisible
- Rights evolve
- Rights confer responsibilities





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on a healthy planet

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Secretary-General

Secretariat

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History

Emblem and Flag

Universal Declaration of Human Rights

Article 25

1. Everyone has the right to a **standard of living** adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control.
2. Motherhood and childhood are entitled to **special care and assistance**. All children, whether born in or out of wedlock, shall enjoy the same social protection.



ARTICLE 6 (life, survival and development)
Every child has the right to life.
Governments must **do all they can** to ensure that children survive and develop to their **full potential**.

ARTICLE 24 (health and health services)
Every child has the right to the best possible health. Governments must provide good quality health care, clean water, **nutritious food**, and a clean **environment** and education on health and well-being so that children can stay healthy. **Richer countries** must help poorer countries achieve this.

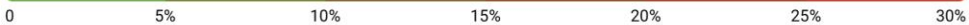
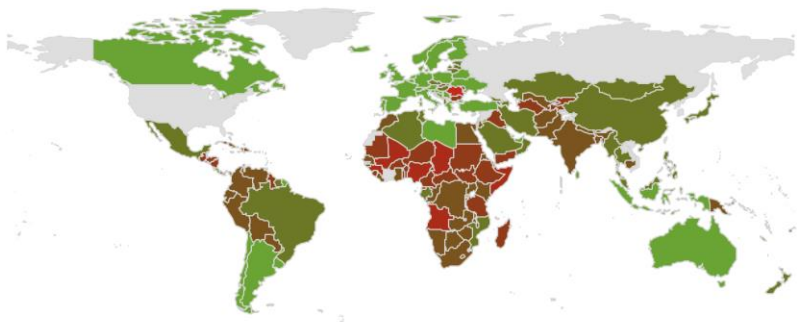


Pneumonia

Last update: November 2023 | Next update: November 2024

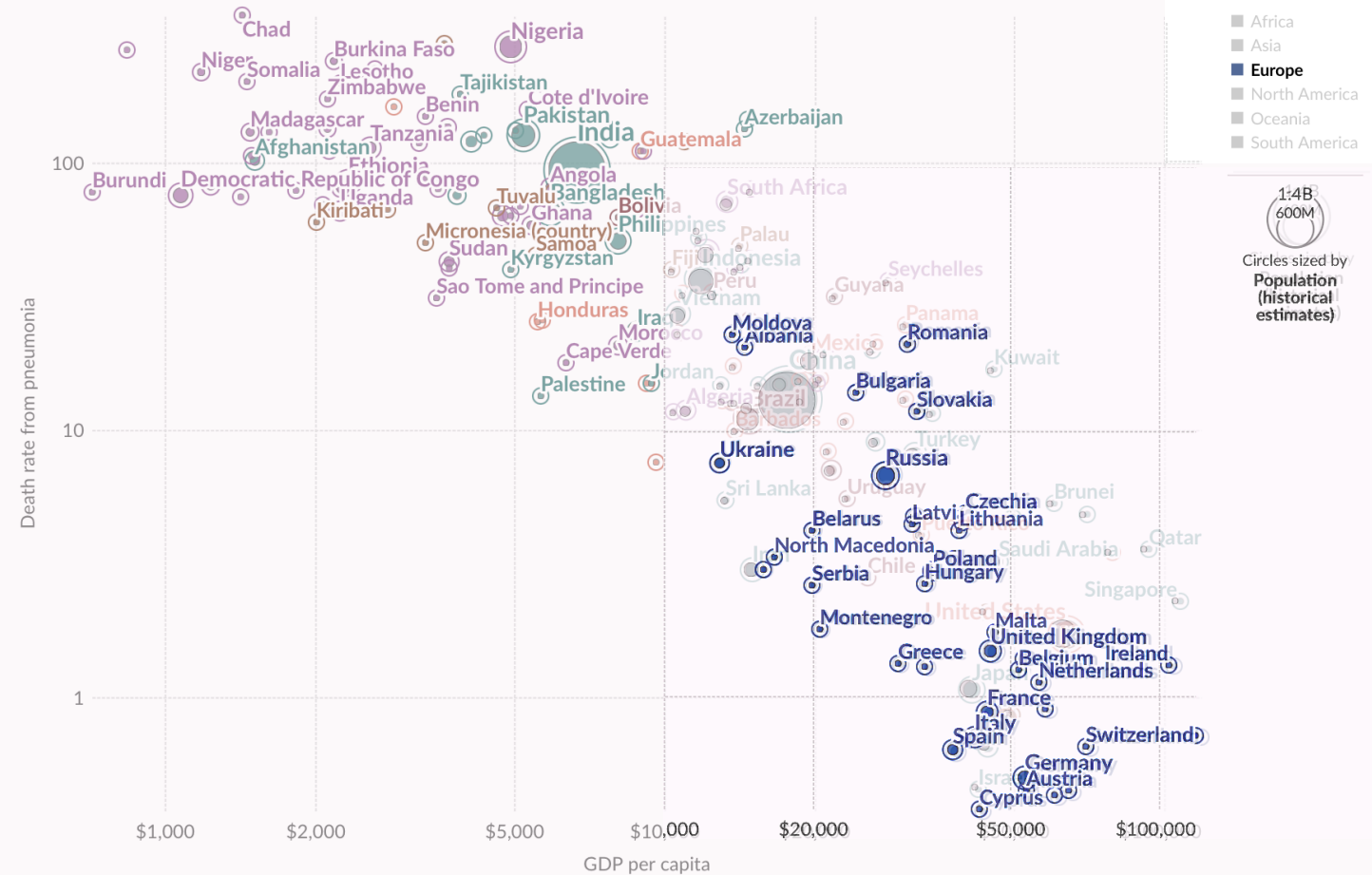
A child dies of pneumonia every 43 seconds

Percentage of deaths caused by pneumonia in children under 5 years of age (2021)



Death rate from pneumonia in children vs. GDP per capita, 2021

The estimated annual death rate from pneumonia and other lower respiratory diseases in children under five years old per 100,000. GDP per capita is adjusted for inflation and differences in the cost of living between countries.



Data source: IHME, Global Burden of Disease (2024); World Bank (2023) - [Learn more about this data](#)

Note: GDP per capita is expressed in international-\$ at 2017 prices.

OurWorldInData.org/pneumonia | CC BY



INDUSTRIAL WASTE AND THE RIGHT TO LIFE



Watchdog must do more to protect boy, 5, from landfill fumes, court rules

Doctors say Mathew Richards' life expectancy has been shortened due to exposure to hydrogen sulphide fumes

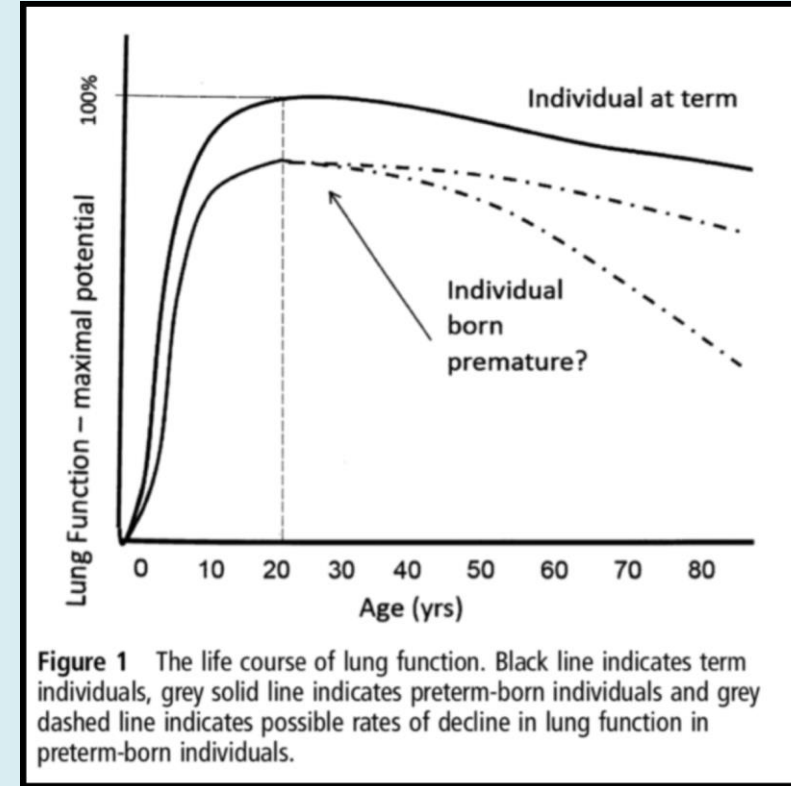


Rebecca Currie with her son, Mathew Richards, five, who live near the landfill site in Silverdale, Staffordshire. Photograph: Julian Hamilton/Mirrorpix

The high court has ruled the [Environment Agency](#) must do more to protect a five-year-old boy from landfill fumes that doctors say are shortening his life expectancy.

In a landmark judgment on Thursday, a high court judge said he was not satisfied that the EA was complying with its legal duty to protect the life of Mathew Richards, whose respiratory health problems are being worsened by fumes from a landfill site near his home in Silverdale, near Newcastle-under-Lyme.

The court accepted evidence from Dr Ian Sinha, a paediatric respiratory consultant at Alder Hey children's hospital, who said exposure to hydrogen sulphide fumes from the site "will have a lifelong detrimental effect on Mathew's future respiratory health" and would reduce his life expectancy.



Translating national ambition into local change

Place-Based Approaches to Inequality

- Understand the ethos, assets, and difficulties of a place
- Empower the voice of the community
- Develop links and data-driven approaches
- Parent champion models of care

Marginalised or high-risk groups

- Areas of deprivation
- Areas of high levels of non-white-British children
- Travelling communities
- Migrant/refugee/asylum-seeking children

Parent champion models

Components of the Population Intervention Triangle



Figure 5. The Population Intervention Triangle model (PIT).

Tying it together: Place-Based Approaches

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Barrow in
Furness,
UK



Integrated health/housing Taskforce
Asthma champions programme
Cultural and social approaches

- Data-informed
- Co-created
- System-wide
- Rights-based
- Evidence-based
- Poverty-proof

Summary

- The respiratory system is inextricably linked to poverty
- Poverty is a systemic problem which requires systemic change
- Place-based, rights-based, evidence-based, person-centred approaches

