# Air Quality as a Non-Communicable Disease: a primary care perspective

10:45

Phil Evans

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Joining Forces to Improve Air Quality and Health

Basic Concepts

# Air Quality as a Non-Communicable Disease: a primary care perspective

Professor Philip Evans (University of Exeter)

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**Academic GP, Associate Professor of General Practice and Primary Care, University of Exeter Medical School.**

**National Institute for Health Research (NIHR) Clinical Research Network (CRN): National Speciality Lead for Primary Care & Cluster C Specialty Lead (Kings).**

https://www.nihr.ac.uk/explore-nihr/support/clinical-research-network.htm

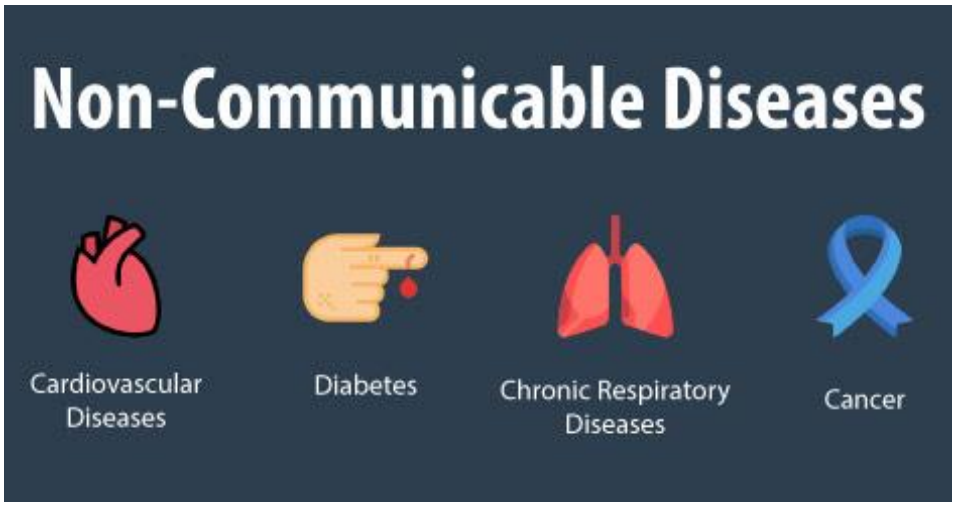
# This talk:

- What is a NCD ?
- What is primary care ?
- How does air quality impact on primary care ?
- How can primary care impact on NCDs and air quality ?
- Some examples of interventions
- Research opportunities

# Non-communicable disease

**Key fact (WHO, 2018)**

- Noncommunicable diseases (NCDs) kill **41 million people** each year, equivalent to **71%** of all deaths globally.



# NCDs and air quality

- Globally, **23% of all deaths** could be prevented through healthier environments

- Nearly **two thirds of the 12.6 million deaths** caused by the environment each year are due to NCDs

- Ambient and household air pollution caused, respectively, **2.8 and 3.7 million** NCD deaths from ischaemic heart disease (IHD), stroke, chronic obstructive pulmonary disease (COPD) and lung cancer in 2012

Worldwide, almost **one third of the cardiovascular** disease burden is attributable to ambient and household air pollution (13% and 17% respectively), second-hand tobacco smoke (3%) and exposure to lead (2%)

- Globally, **29% of COPD** deaths are attributable to household air pollution, **8%** ambient and **11%** in workplaces

**Early life exposure** to environmental risks, such as chemicals and air pollutants, might increase NCD risk throughout the life course

# NOT JUST MORTALITY – MORBIDITY

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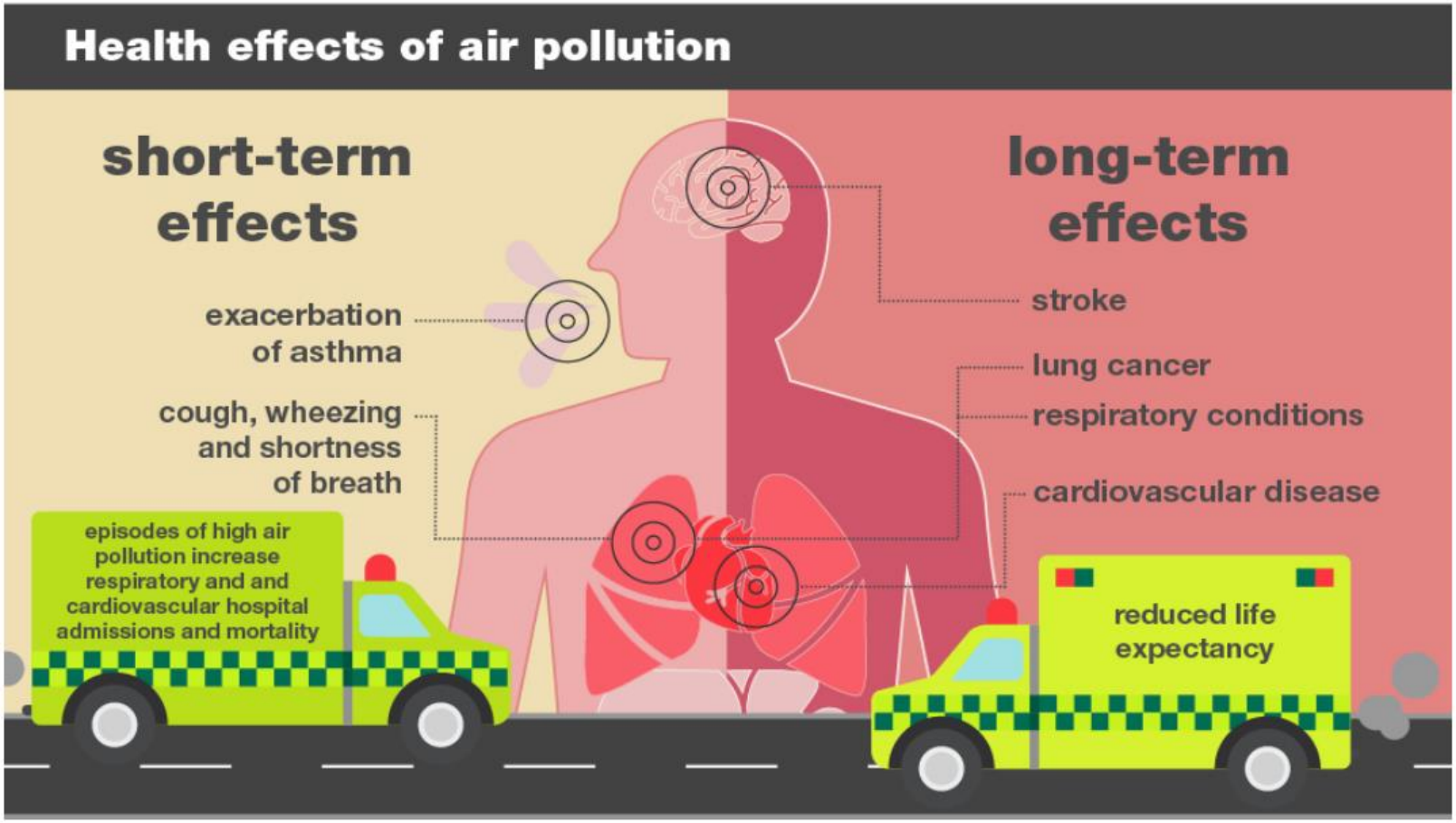
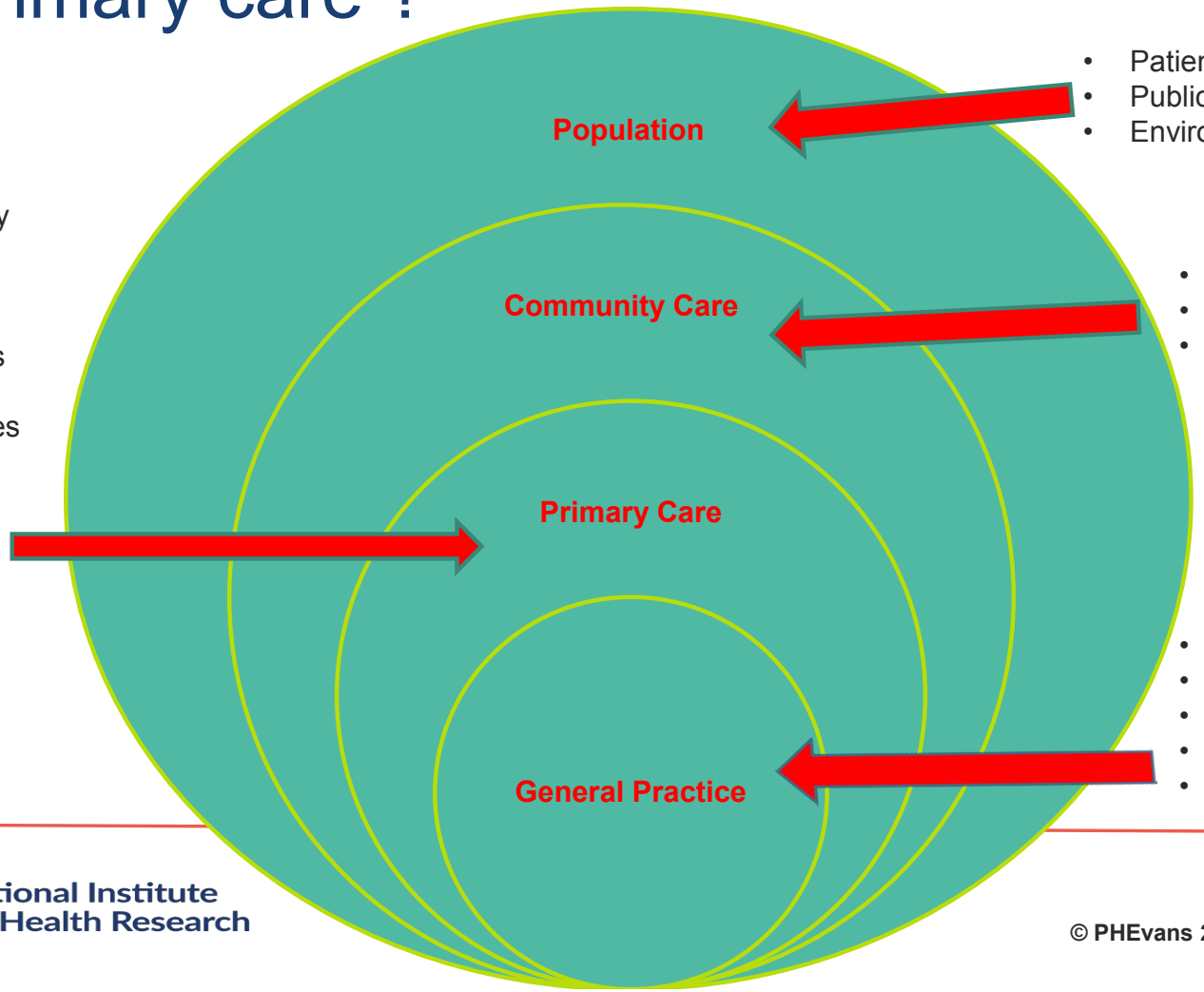
**Health** Matters



# St Leonard's Practice, Exeter

# What is primary care ?

- Community Pharmacy
- Community Nurses
- Community Physiotherapy
- Sexual Health Clinics
- Walk-In clinics
- Out-of-hours Care
- Urgent Treatment Centres
- Minor Injury Units
- Drugs and Alcohol services
- School Nurses
- Health visitors
- Community midwives
- Ambulance services
- Prisons
- Audiology




- Patients' Homes
- Public health
- Environmental health

- Care Homes
- Schools
- Community hospitals

- Single General Practice
- Primary Care Network
- GP Federation
- Super-partnership
- Mega-practice

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# What is the general practice big picture?

- England had **7012** open and active practices (Dec 2018)
- **308** million estimated appointments last year in these practices (NHS Digital)
- **> 1 million** appointments every working day
- Average consultation length is **12.2** minutes (Kings Fund, 2016)
- Average consultation rate = **5.16** per patient per year (2013/14) (Hobbs et al, 2016)
- **14%** increase in GP workload between 2007 and 2013 (Hobbs et al, 2016)
- Average **2.5** problems per GP consultation (Salisbury et al, 2013)

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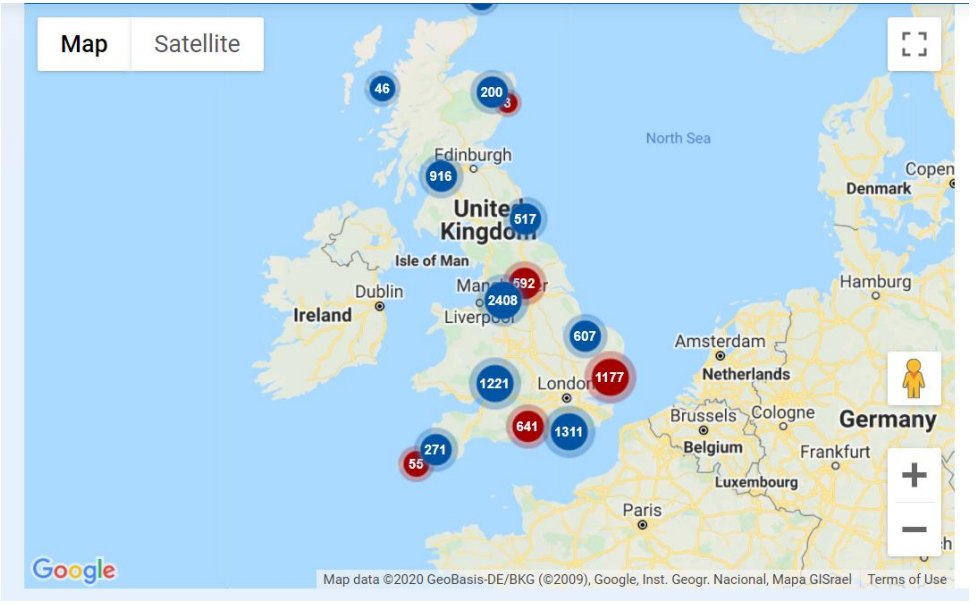
# “2,220 GP practices (1/3) are in areas where air pollution is above the World Health Organisation’s limit for fine particulate matter (PM2.5)”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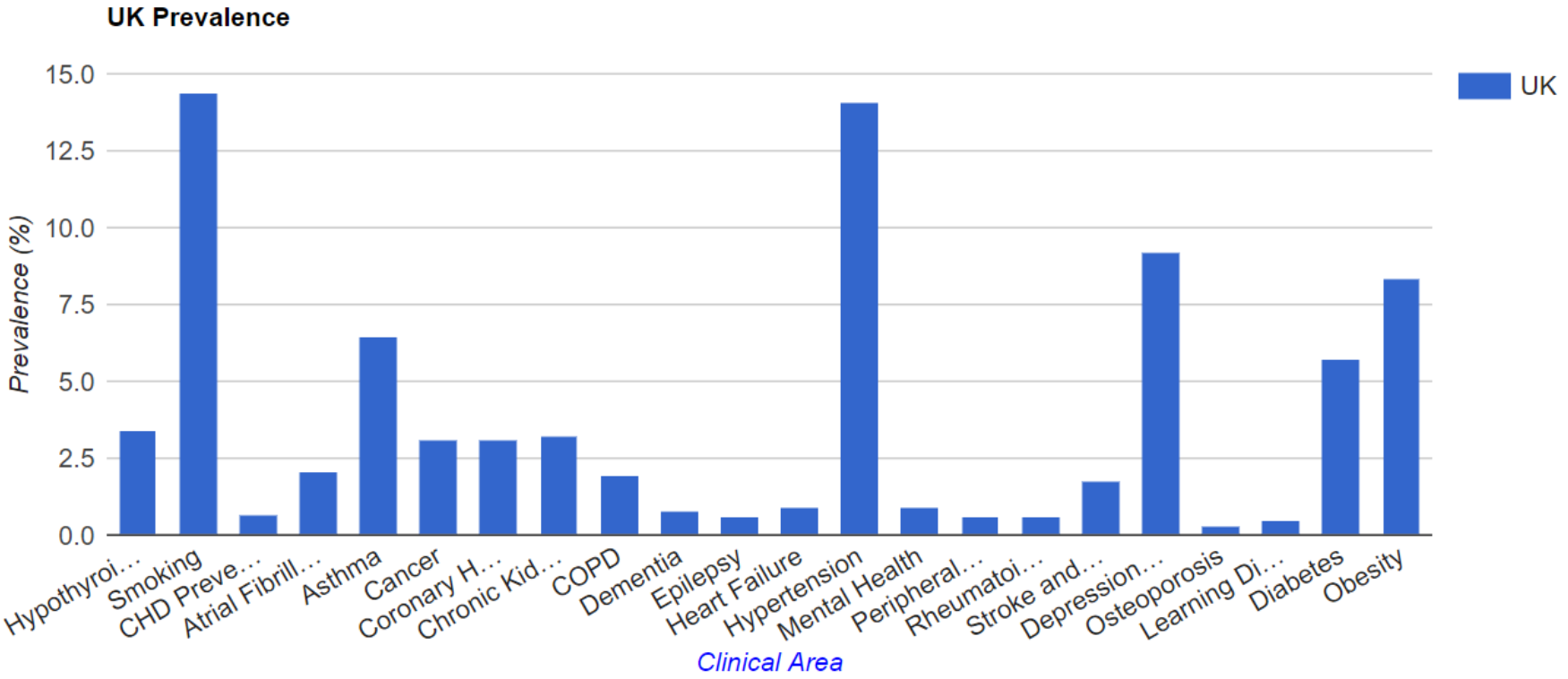
# Common conditions in primary care (QOF 2020)

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# Unique characteristics of primary care

- Expert generalists
- NCDs are core
- First contact, continuous, coordinated care (Starfield)
- Cradle to grave i.e. life course
- Care for the vulnerable (old and young)
- Regular contact
- Family doctors (and household)

# Primary care and air quality

**Respiratory:**

- Wheezy kids
- Asthma
- COPD
- Hay fever

**Cardiovascular:**

- Coronary heart disease / stroke/ TIA
- Heart failure

**Cancer**

**Diabetes**

# Primary care and air quality - “red flags”

The patient **history**:

- Recurrent disease
- Chronic disease
- Changing disease
- Excess prescriptions e.g. salbutamol scripts [1]
- Poor school attendance
- Frequent GP attendance
- Home visits observation


1. Sofianopolou et al, 2013

# How does primary care manage possible “cases”?

**Often Practice Nurse/Health visitor &  GP**

- Health promotion advice
- Smoking advice / intervention
- Referral to Council re Housing assessment
- Health Visitor home visit
- Social prescribing

**NICE guidance:**

- Indoor air quality at home (January 2020)
- Air pollution: outdoor air quality and health (June 2017)

# Using strengths of primary care to combat air pollution

- Relationship-based care (GP and Nurse )
- Continuity of care and mortality (Pereira Gray et al, 2018)
- Life course care
- Whole family care
- Repeated contact (5 a year)
- Care irrespective of SE class
- Chronic disease **ANNUAL** Review e.g. Asthma, COPD

# Primary care and air quality: making it happen

- Education / awareness raising
- Identification / attribution
- Measurement of air quality cf. BP
- Feedback to patients
- Intervention / home visits
- Primary care / public health interventions to be designed and tested


# Research potential and collaboration

**NIHR (National Institute for Health Research)**

- NIHR e.g. Health Protection Research Units (HPRUs)
- Biomedical Research Centres (BRCs) e.g. Kings
- NIHR Clinical Research Network (CRN) : Public health / Primary care / Social care /Hospital specialist care
- Big data e.g. CPRD, NHS Digital
- Public health research funding (NIHR PHR Programme)

- **"Small data"** at practice level e.g. consultation numbers/ prescriptions
- **"Big data"** : e.g. Clinical Practice Research Datalink (CPRD) – 50 million patients (https://www.cprd.com/)

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# Thank you for listening

p.h.evans@exeter.ac.uk
Twitter: @PhilEvansCRN