

@The EDCOstudy1

The EDCO study and the importance of the Emergency Department in diagnosing CO Poisoning

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Chief Investigator, EDCO studies

**ED
CO**
Screening for Carbon
Monoxide Exposure in
Emergency Departments

**ED
CO-M**
Carbon Monoxide Alarm
Use By Emergency
Department Patients

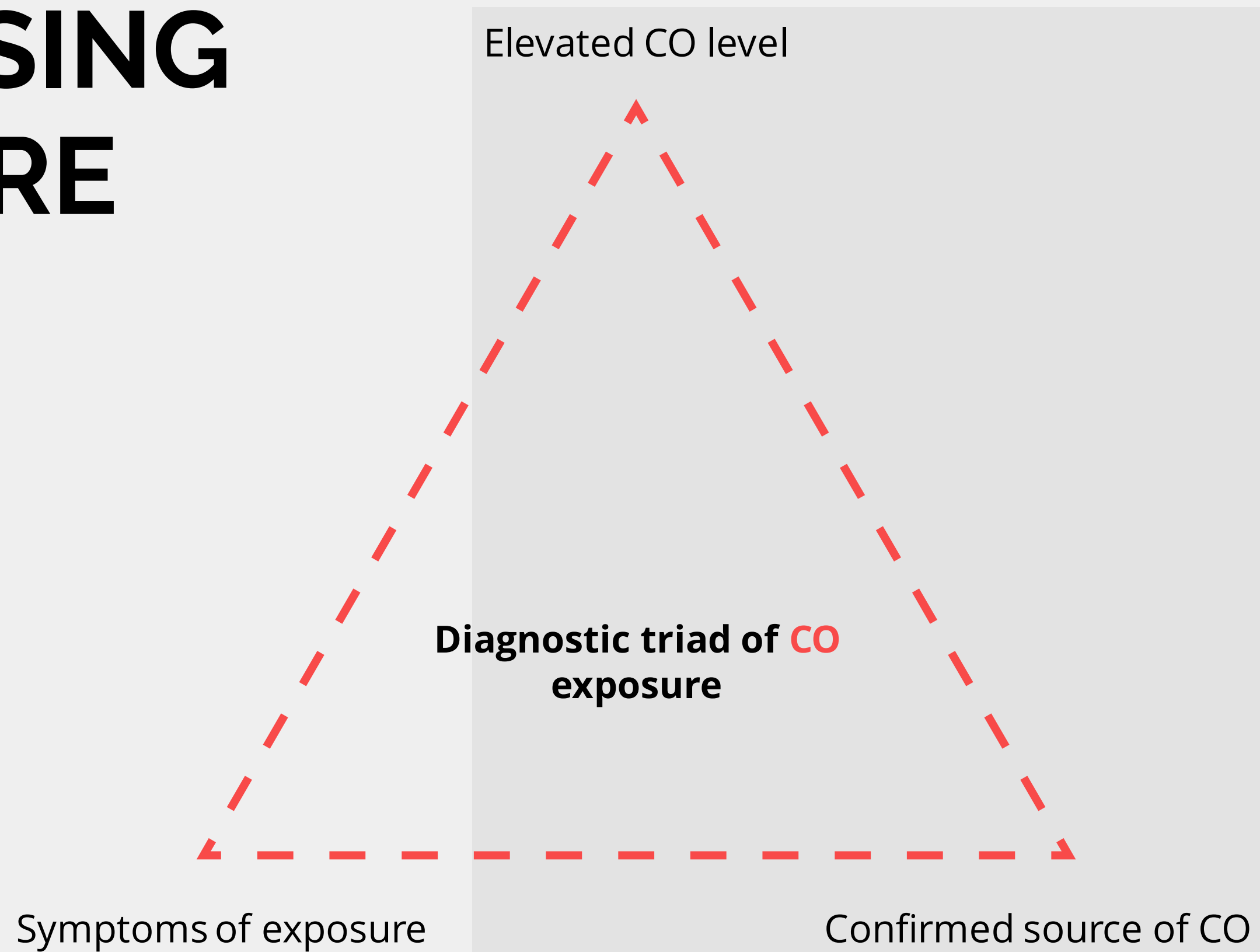
Topics


- 1 Challenges in the ED diagnosis of carbon monoxide (CO) exposure
- 2 Results of the EDSCO study

DIAGNOSIS IN THE EMERGENCY DEPARTMENT



DIAGNOSING EXPOSURE





Patients are unaware that they have been exposed

Symptoms of CO exposure are usually something else

Diagnostic test results are difficult to interpret in a clinical setting

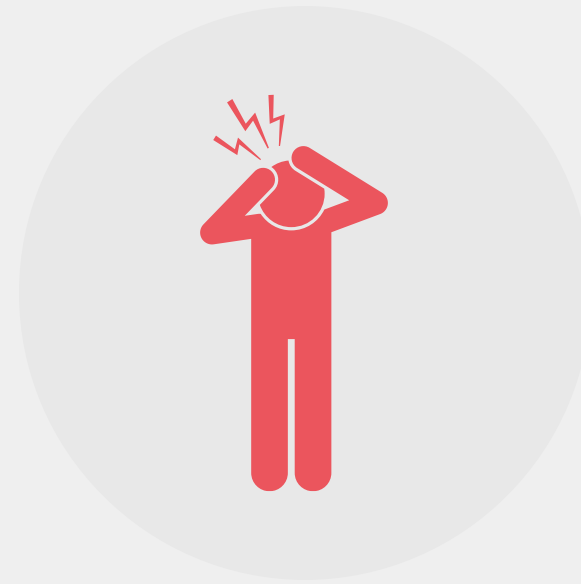


Dr Phil Moss

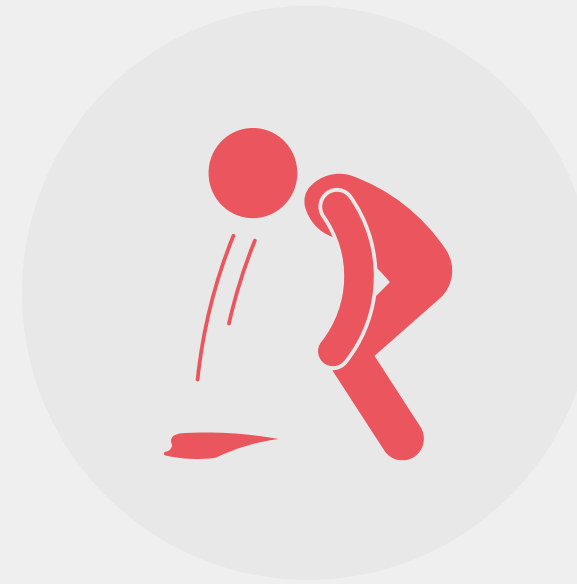
Consultant, Emergency Department
St George's Hospital, London

SIGNS OF CO EXPOSURE

Headache



Nausea



Chest pain



Dizziness



Collapse



Breathing difficulty



25.0m

UK ED attendances
2019/20

230*

Hospital admission for
unintentional CO
exposure

**Roca-Barcelo et al. Temporal trends and demographic risk factors for hospital admissions due to carbon monoxide poisoning in England. Preventative Medicine. 2020.

0.00092%

ED attendances with
unintentional CO
exposure

DIAGNOSIS

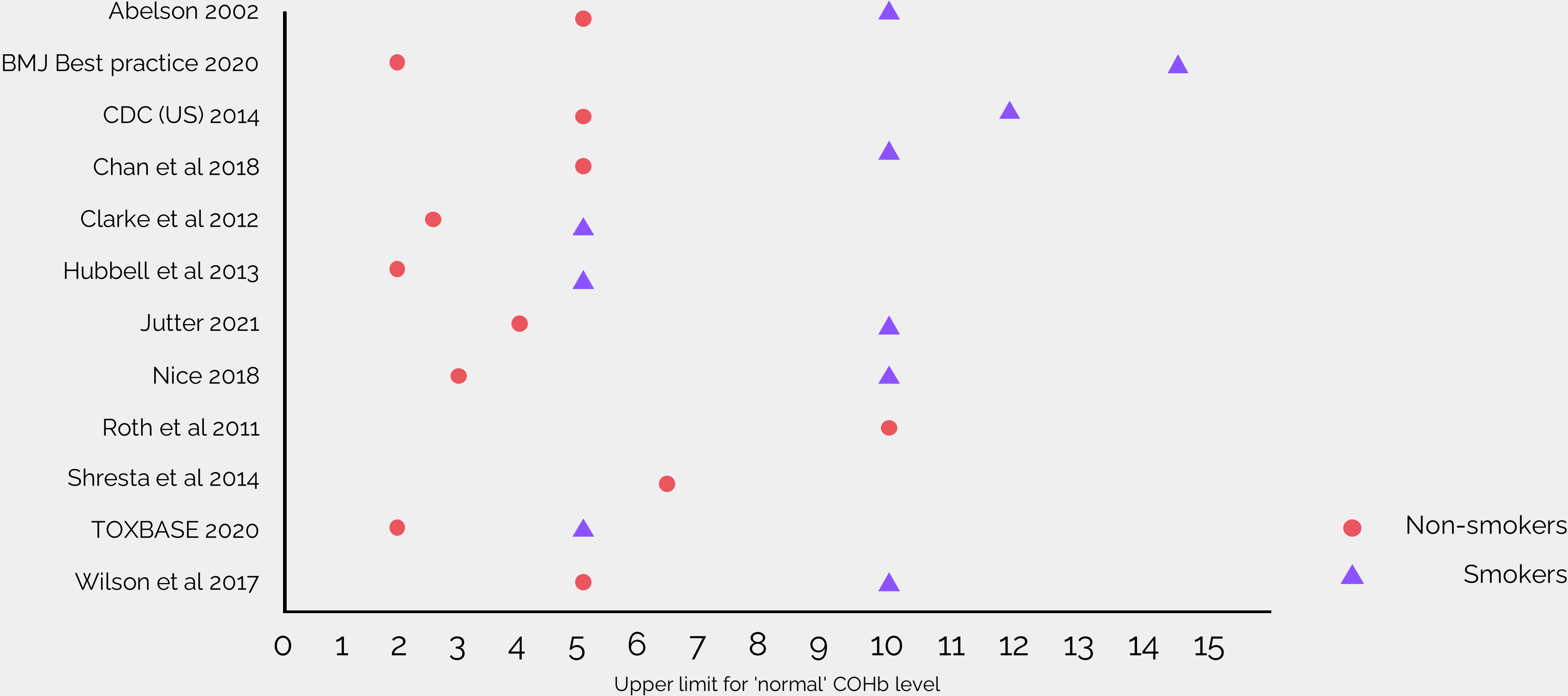
Methods for diagnosis

Limitations to use of COHb



Clinical and research cutoffs for CO

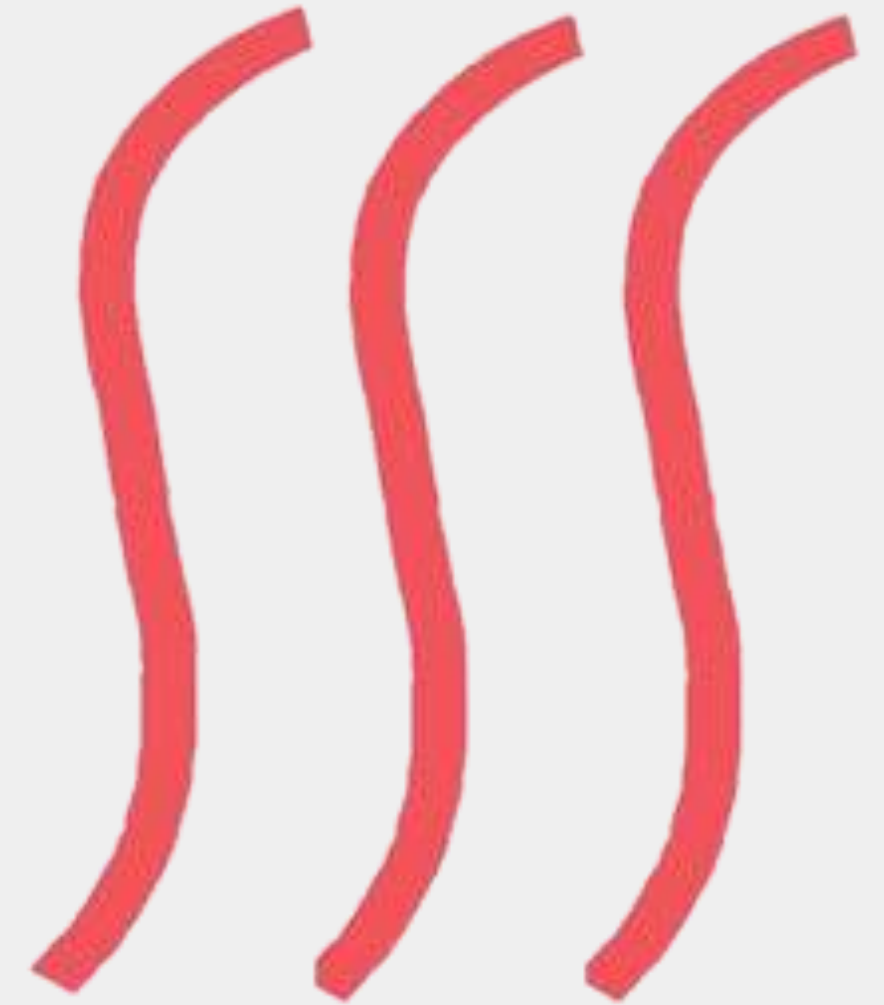
Babu A, Moss P, Reid S, Jarman H. Methods to diagnose carbon monoxide exposure: a scoping review 2022 [in review]



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Sponsorship and Funding



Sponsorship

St George's University Hospitals NHS
Foundation Trust

Funding

Carbon Monoxide Research Trust

St George's University Hospitals 
NHS Foundation Trust



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STUDY TEAM

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Desislava Baramova, Study coordinator

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UK Health Security Agency

Andrew Morley, Policy and Investigation Officer, HomeServe

Isabella Myers, Consultant on Health, Policy and the
Environment

Shirley Price, Professor of Toxicology, University of Surrey





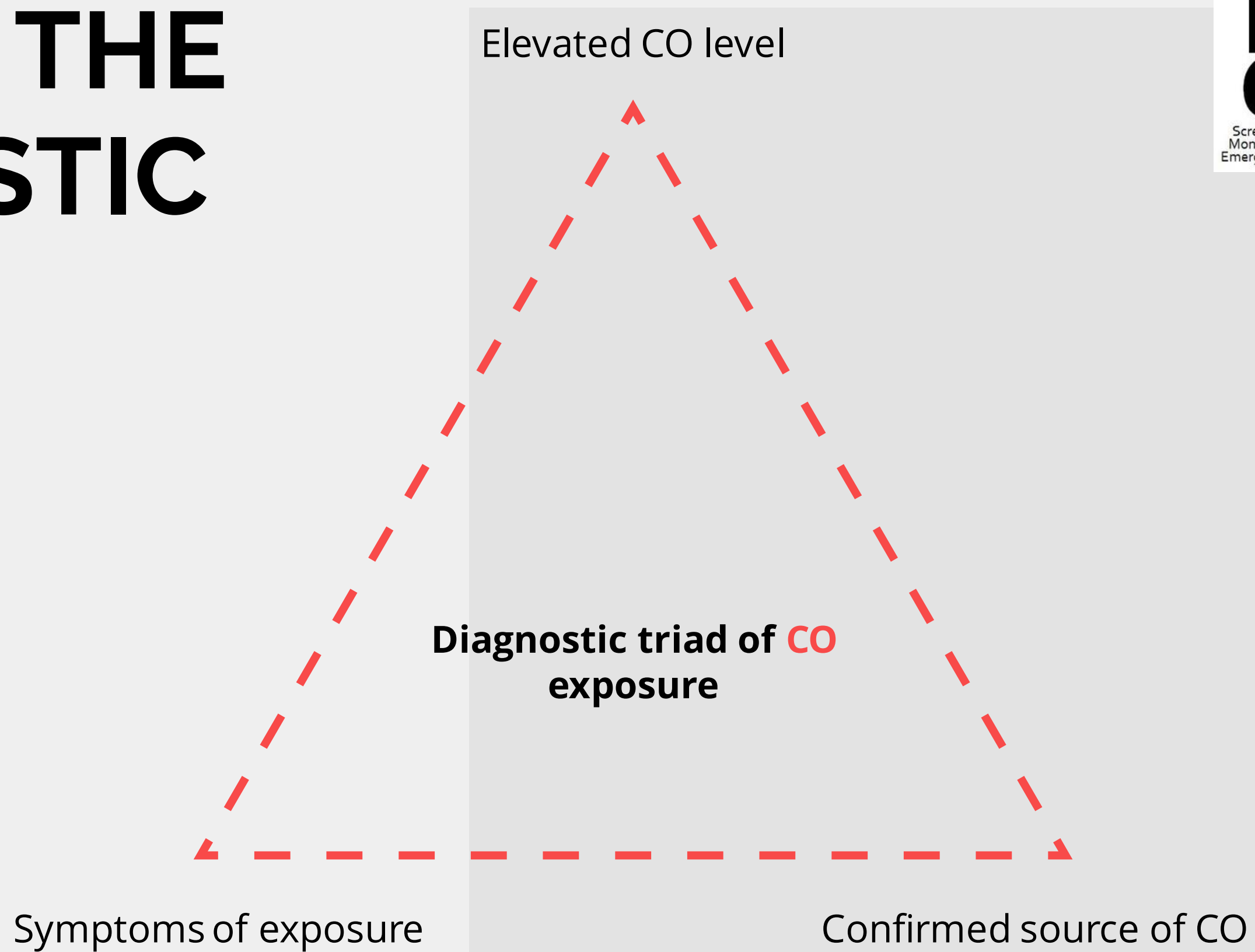
OBJECTIVE

To ascertain the proportion of patients presenting the Emergency Department with symptoms suggestive of carbon monoxide (CO) exposure with a raised COHb that have a source of CO identified from a domestic or occupational source.

How commonly are people presenting to emergency departments with symptoms of CO poisoning are actually exposed to CO?

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LINKING THE DIAGNOSTIC TRIAD





TRIAL DESIGN

Multi-centre cohort study

4175 participants

CASE DEFINITIONS

Suspected

Symptoms suggestive of CO exposure
AND

COHb levels >2% (non-smokers) or >10% (smokers)
and/or

Self-report 'Yes' to C or O on the COMA screening tool
AND

No environmental source identified

Probable

Symptoms suggestive of CO exposure
AND

COHb levels >2% (non-smokers) or >10% (smokers)
and/or

Self-report 'Yes' to C or O on the COMA screening tool
AND

Environmental report of the possible presence of CO (faulty or potentially faulty appliance)

Confirmed

Symptoms suggestive of CO exposure
AND

COHb levels >2% (non-smokers) or >10% (smokers)
and/or

Self-report 'Yes' to C or O on the COMA screening tool
AND

Environmental report of the presence of CO

0.62%

26 cases

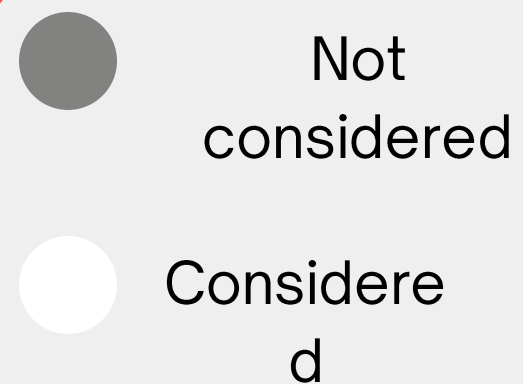
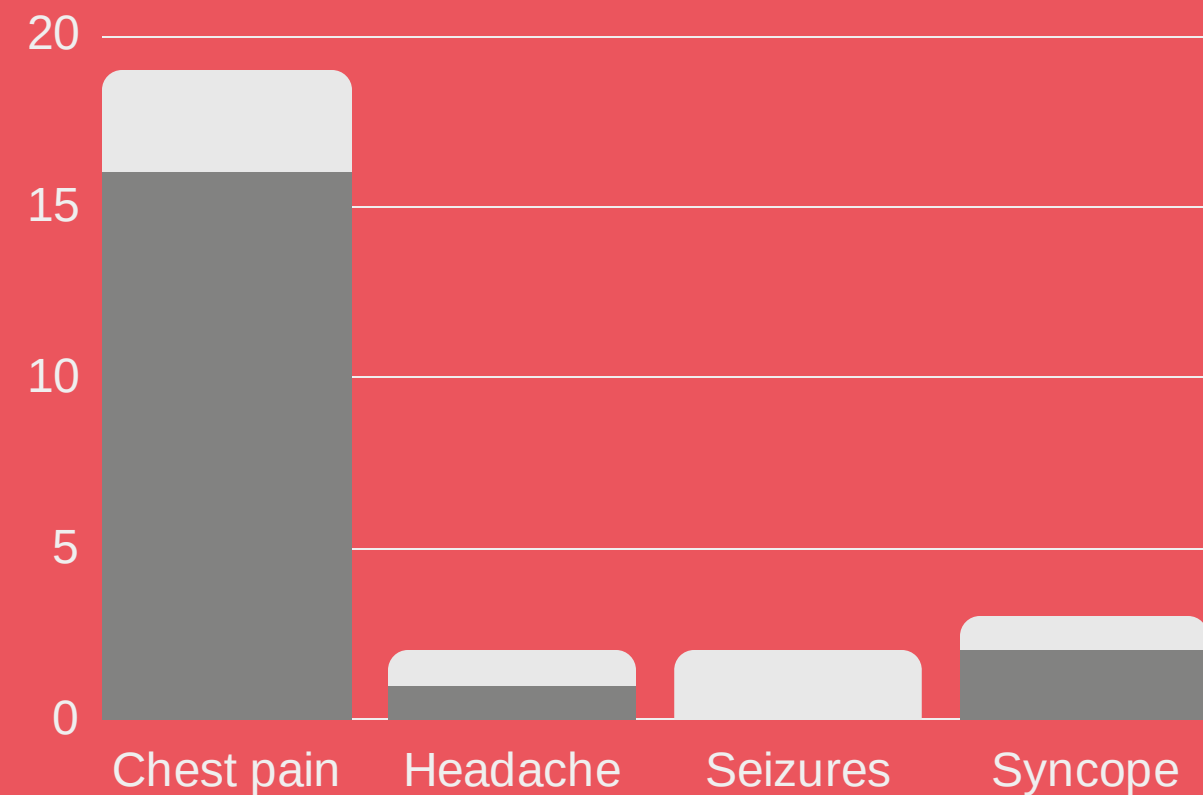
RESULTS

RAISED COHb

COHb levels >2% (non-smokers)
or >10% (smokers)

DO CLINICIANS SUSPECT EXPOSURE?

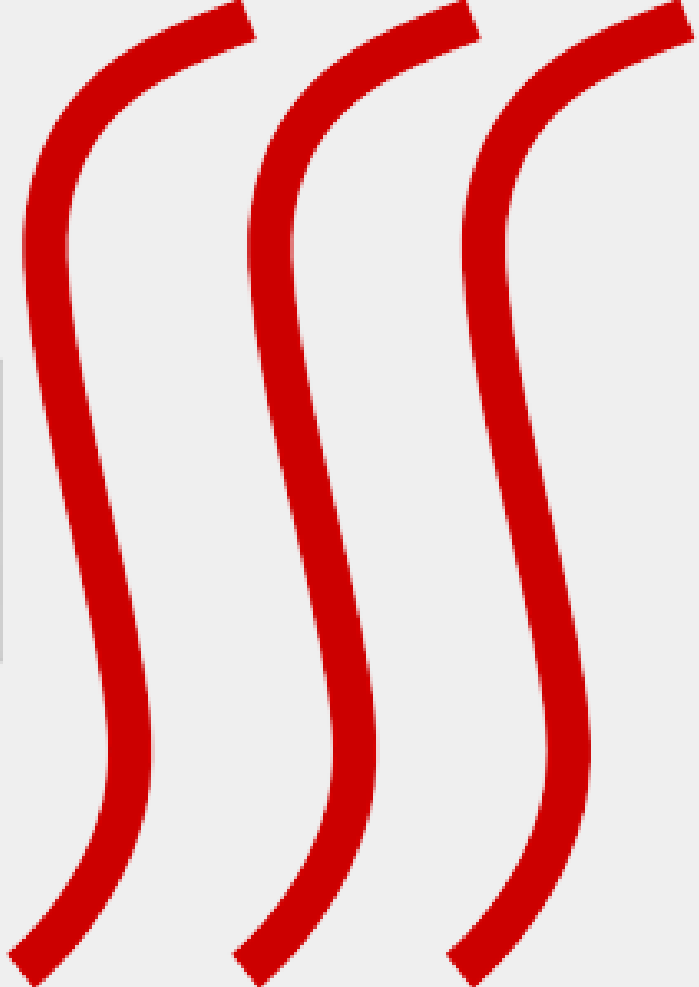
Documented consideration of CO exposure in patients with raised COHb



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ED CO-M

Carbon Monoxide Alarm
Use By Emergency
Department Patients

Three thick, red, wavy lines that resemble smoke or sound waves, positioned to the right of the main text.

STUDY BACKGROUND



EDCO study results

44% of patients in the EDCO study didn't have (or didn't know if they had) a CO alarm installed

Prevention

Carbon monoxide alarms and maintenance of fuel burning appliances are the best way to protect against unintentional exposure

Despite legislation and public health campaigns less than 50% of homes have a CO alarm

Health inequality

Lowest uptake of CO alarms in ethnic minority and lower socioeconomic groups



OBJECTIVE

FULL TITLE: A SURVEY OF CARBON MONOXIDE ALARM USE BY PATIENTS ATTENDING THE EMERGENCY DEPARTMENT

To establish the proportion of homes with carbon monoxide alarms of patients attending the Emergency Department.

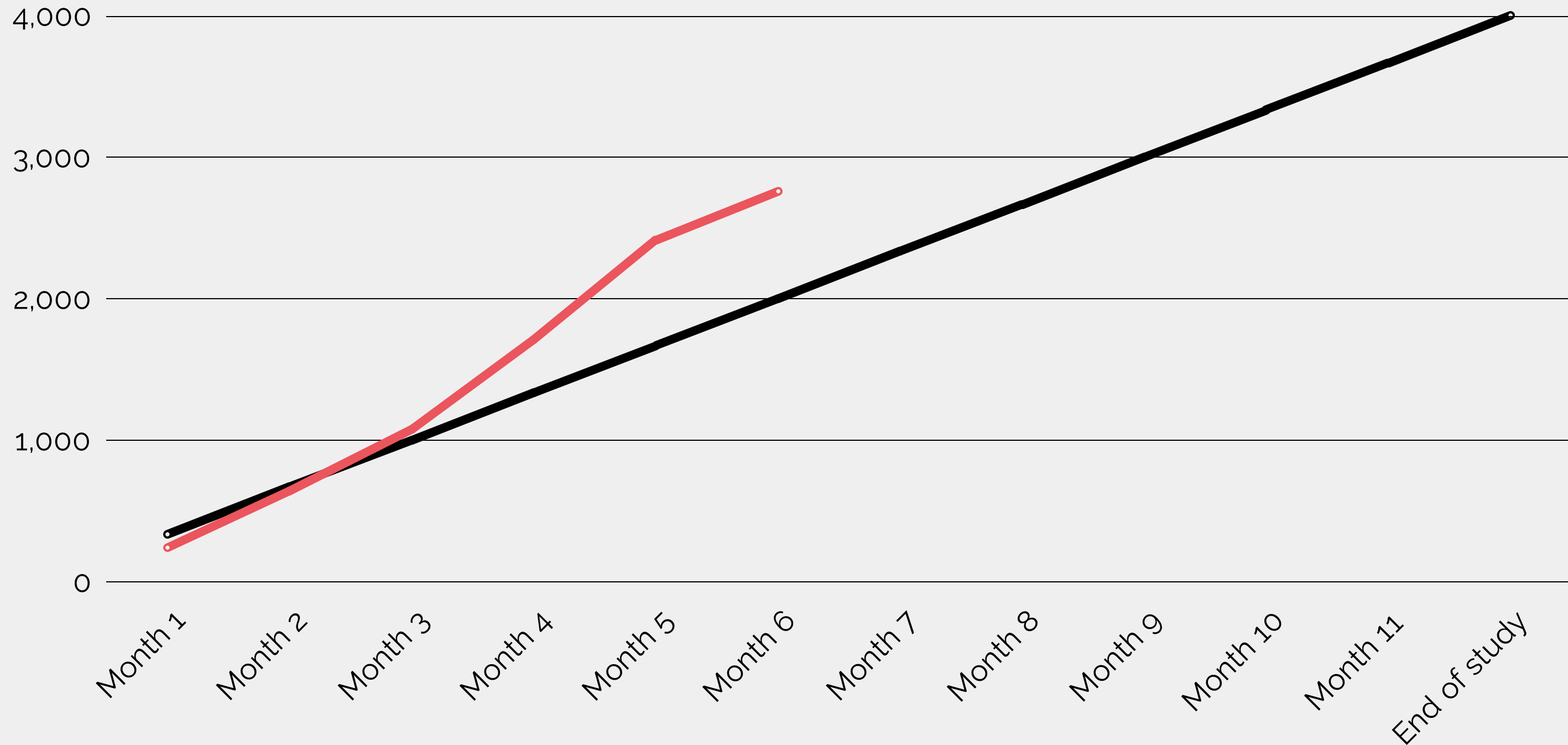
SECONDARY OBJECTIVES



a) To assess household characteristics (ethnicity, socioeconomic status, and housing type) of the surveyed population and correlate these to alarm use.

b) To establish the type, location, and frequency of CO alarm testing in those surveyed to ascertain correct installation and usage

DATA SO FAR



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