Identifying high cholesterol in the ambulance setting: impact of a primary prevention programme to tackle health inequality. Results from The TOPCAT Study

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"Health inequalities are unfair and avoidable differences in health across the population, and between different groups within society" (NHS England, 2024 [1])

[1] NHS England. Equality, Diversity and Health Inequalities (2024). Available at: https://www.england.nhs.uk/about/equality/equality-hub/national-healthcare-inequalities-improvement-programme/what-are-healthcare-inequalities

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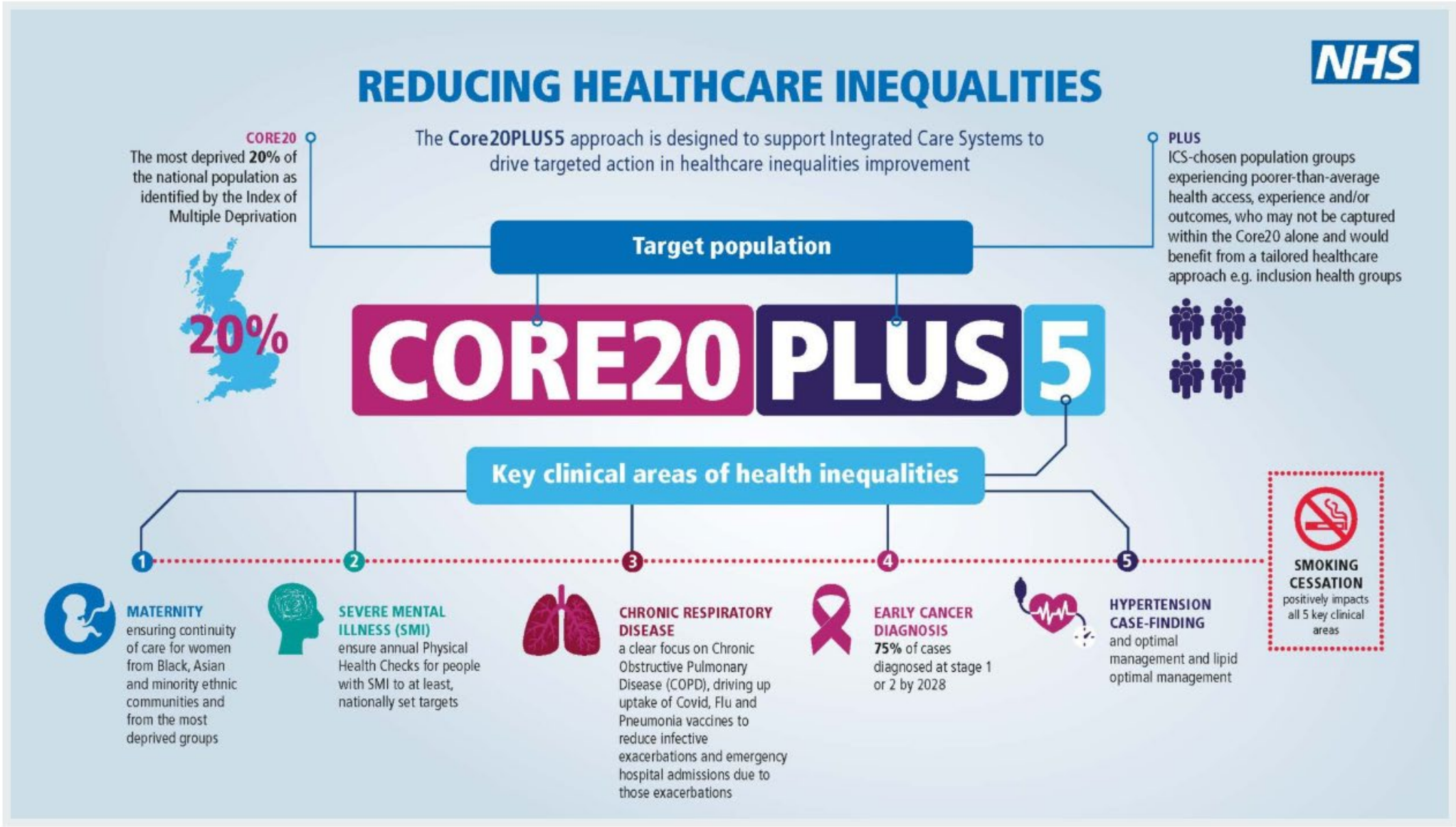

Background

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OPEN ACCESS Freely available online

PLOS ONE

Socioeconomic Deprivation and the Incidence of 12 Cardiovascular Diseases in 1.9 Million Women and Men: Implications for Risk Prediction and Prevention

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PEER REVIEW

The English North-South divide: risk factors for cardiovascular disease accounting

The English North-South divide: risk factors for cardiovascular disease accounting for cross-sectional socio-economic position

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Abstract

Aims: Given a North-South divide in mortality in England, we aimed to assess the extent of a North-South divide in risk factors for cardiovascular disease (CVD), controlling for markers of socio-economic position (SEP).

Open Access Research

BMJ Open Impact of socioeconomic deprivation on screening for cardiovascular disease risk in a primary prevention population: a cross-sectional study

Sarah-Jane Lang,[1] Gary A Abel,[2] Jonathan Mant,[1] Ricky Mullis[1]

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The intervention

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(TOPCAT) a populaTion based study exploring a cOmmunity hyPerCholesterolemia intervention in north eAsT england

What happens next?

You have taken part in the TOPCAT study on [*insert date*] and your cholesterol has been recorded as [*insert cholesterol reading*]. This means your cholesterol is within recommendations. You do not need to do anything else and this is the end of your participation in this study.

The research team will write to your GP to inform them of your involvement in this study and of your cholesterol reading.

Further advice and support regarding cholesterol can be obtained from HEART UK by visiting www.heartuk.org.uk or telephoning 01628 777046.

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(TOPCAT) a populaTion based study exploring a cOmmunity hyPerCholesterolemia intervention in north eAsT england

What happens next?

You have taken part in the TOPCAT study on [*insert date*] and your cholesterol has been recorded as [*insert cholesterol reading*]. This does not necessarily mean you have high cholesterol, but you should contact your GP to discuss your cholesterol reading and what to do next.

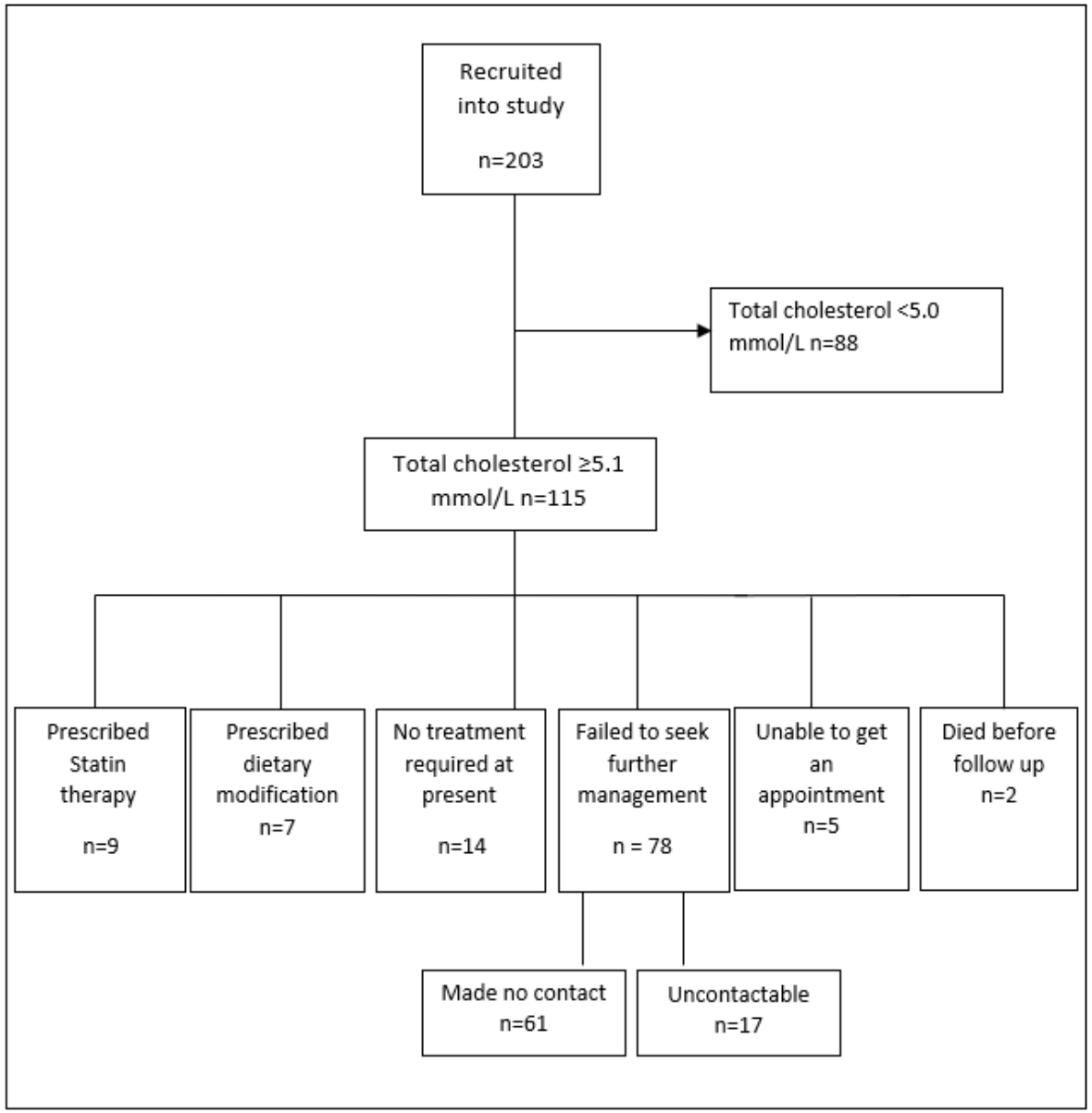
The research team will write to your GP to inform them of your involvement in this study and of your cholesterol reading.

Your GP contact details are:

.....

.....

Participant flow



Participants

65.7 years

59% female

Mean IMD 2.6

55% current/previous

Mean Total cholesterol 5.6

Mean BP 163/88

Mean NEWS2 0.7

Outcomes by group

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	Did not need follow up n=88	Did not seek follow up n = 83	Did seek follow up n = 30
Mean (SD) Age (years)	68.2 (15.5)	64.2 (13.9)	62.3 (13.9)
M:F	49:39	50:33	20:10
Smoker	20% yes, 12% previous	18% yes 30% previous	23% yes, 23% previous
GP postcode IMD	Mdn 1.0, mean 2.6	Mdn 1.0, mean 2.6	Mdn 1.0, mean 3.1
Mean (SD) pulse	86.8 (18.3)	86.7 (15.9)	80.8 (13.5)
Mean (SD) systolic BP	161.4 (15.5)	164.1 (20.1)	166.9 (18.9)
Mean (SD) diastolic BP	87.3 (15.0)	89.0 (13.4)	90.4 (10.4)
Mean (SD) Total cholesterol (mmol/L)	4.33 (0.58)	6.54 (1.11)	7.10 (1.27)
NEWS2	0.95 (1.58)	0.52 (1.02)	0.27 (0.98)
CFS	3.18 (2.14)	2.58 (1.55)	1.73 (1.19)
Ethnicity	n=85 White British, n=1 Asian, n=1 Black British, n=2unknown	n=73 White British, n=3 Asian, n=1 Black British, n=6 unknown	n=29 White British, n=1 Asian.
Dependents	n=68 no, n=9 yes, n=9 unknown	n=57 no, n=11 yes, n=15 unknown	n=22 no, n=7 yes, n=1 unknown

Motivators to seek treatment

	Estimate (S.E)	Odds ratio [95% C.I]	P
Intercept	-0.16 (2.92)		
Age	0.01 (0.02)	1.01 [0.96 – 1.06]	.79
Pulse	-0.04 (0.02)	0.97 [0.92 – 1.01]	.14
Total Cholesterol	0.52 (0.25)	2.07 [1.03 – 2.76]	.04*
CFS	-0.63 (0.28)	0.53 [0.31 – 0.93]	.03*
NEWS2	-0.02 (0.32)	0.99 [0.53 – 1.84]	.96
Sex (M v F)	-0.82 (0.60)	0.44 [0.14 – 1.44]	.18
Smoker (Y v N)	-0.10 (0.68)	0.91 (0.24 – 3.44]	.96

Barriers to seeking treatment

"I've had other health problems that are more important. Anyway, I didn't think my cholesterol was high enough to be concerned."
(Male, aged 73 years, total cholesterol 5.9 mmol/L)

"I have too many other health problems at the moment. I am trying to get my high blood pressure under control, anyway, I wouldn't want to take any more medications at the minute."
(Female, aged 75 years, total cholesterol 5.3 mmol/L)

"No, I've not made contact with my GP about this, I've been too unwell with other things. "
(Female, aged 46 years, total cholesterol 7.4 mmol/L)

"I haven't seen my doctor. I decided as my cholesterol wasn't that high I wouldn't bother."
(Male, aged 68 years, total cholesterol 5.6 mmol/L)

"I haven't been able to get an appointment!"
(Male, aged 51 years, total cholesterol 6.1 mmol/L)

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What does this mean?

- Undiagnosed hypercholesterolaemia exists in patients using the ambulance service, but factors primarily related to disadvantage prevent universal engagement in cholesterol lowering behaviours

- This type of intervention delivered in the ambulance setting may be the only opportunity for some patients to improve their health and reduce their CVD risk

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Thank you
Any questions?

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Identifying high cholesterol in the ambulance setting: a mixed-methods cohort study to tackle health inequality

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ABSTRACT

Background Individuals with low socio-economic status (SES) have disproportionate rates of cardio- vascular disease (CVD) but poorer engagement with preventative health. This study aimed to compare characteristics of individuals with and without hyperlipidaemia and describe their health behaviours.

Methods A mixed-methods study between January and December 2022. Patients aged ≥40 years using the ambulance service with blood pressure of ≥140/90 had their total cholesterol measured using a point of care device. Data including blood pressure, smoking status, National Early Warning Score 2 and clinical frailty scale (CFS) were analysed.

Results Of 203 patients (59% female, mean age 65.7 years), 115 (56.7%) had total cholesterol ≥5.1 mmol/L. Thirty patients (14.8%) sought treatment and received either statins (n = 9; 4.4%), dietary modification (n = 7; 3.4%) or no further intervention (n = 14; 6.9%), whilst 85 patients (41.9%) took no further action. Lower CFS (OR 0.53 [0.31–0.93]) and higher total cholesterol (OR 2.07 [1.03–2.76]) predicted seeking further management. SES was not associated with hyperlipidaemia or likelihood of seeking further management, rather this was dictated by competing co-morbidity, poor health literacy and digital divide.