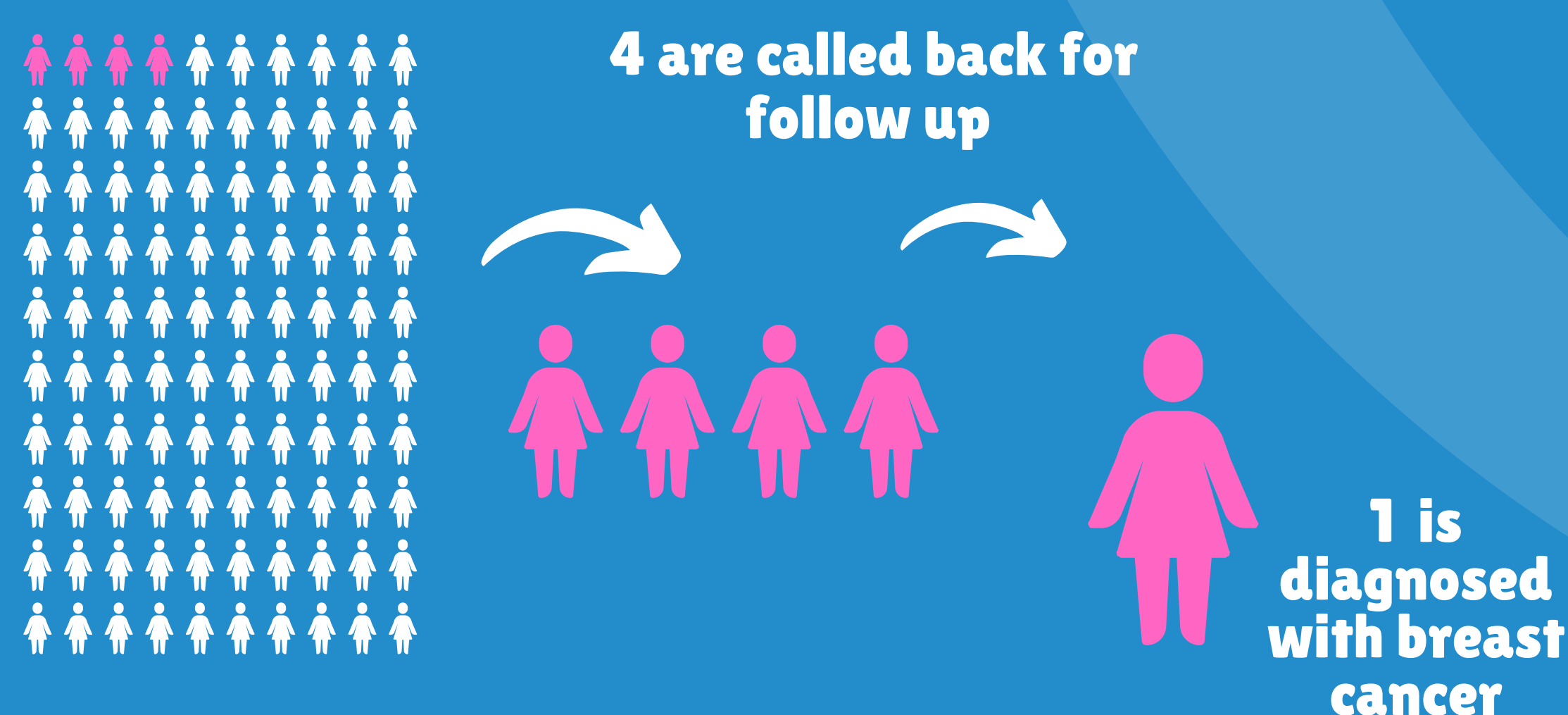


Using NHS England data linkage to address ethnicity and deprivation gaps in routine breast screening data in a Door-to-Door transport feasibility study (DOORSTEP)

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Introduction

On average out of 100 women who attend breast screening



31% of women invited in Humber & East Yorkshire did not attend their routine breast screening appointment (2021–2023).

This equates to ~450 women in this region whose breast cancer could have been picked up earlier if they had attended.

NHS England data linkage to determine ethnicity & deprivation of trial study cohort

The study tested the feasibility of undertaking a trial to provide free door-to-door transport to women attending routine breast screening appointments.

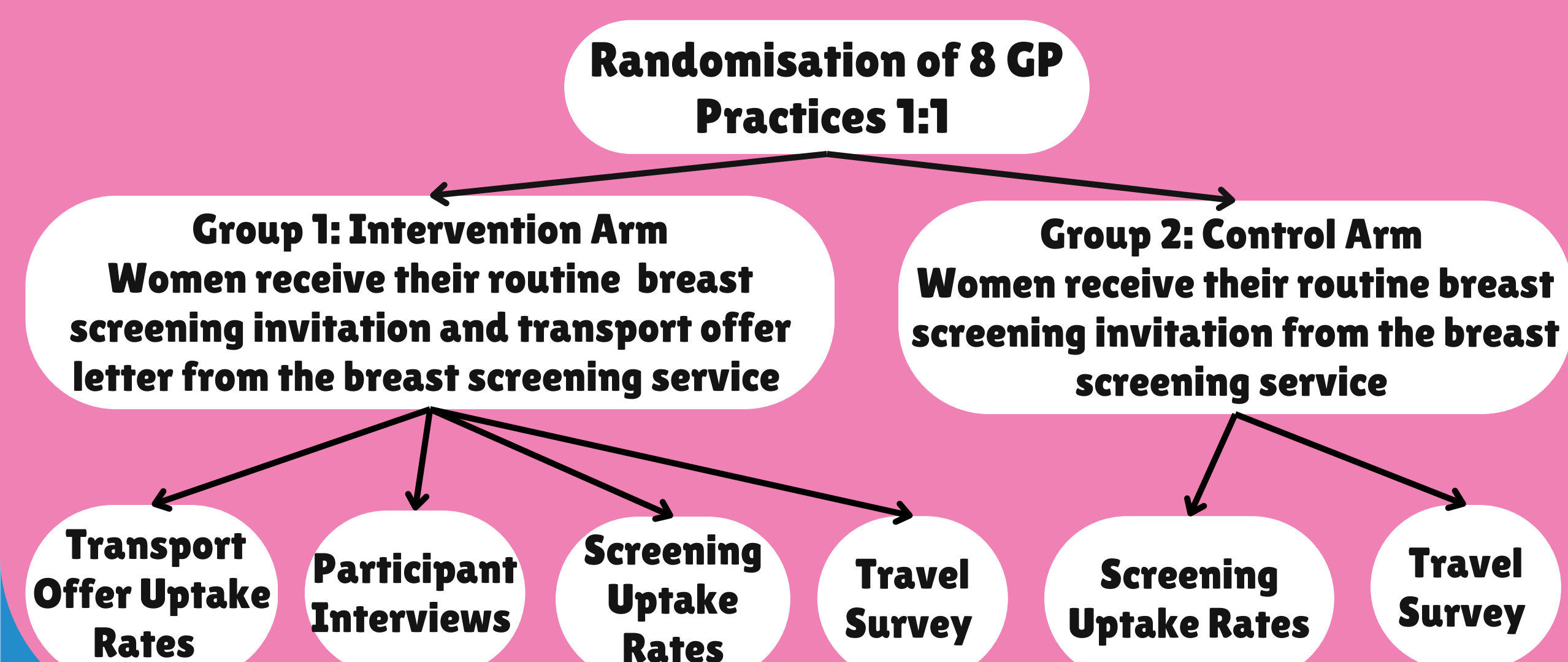
Breast screening services in England report screening data by age, but do not routinely capture ethnicity or deprivation, limiting the ability to assess inequalities.

As part of this trial the feasibility of collecting this data through linkage with routinely collected data held by NHS England was tested

Methods

Feasibility Trial Design

Eight GP practices across the Hull and East Yorkshire were recruited and randomised into two groups. The flow diagram shows the participant flows and data collection by group. All eligible women aged 50 – 70 years in these GP practices were included.



Study Intervention

The intervention is a free bookable taxi service that will take women from their home/work to the screening location wait during the appointment and then drive them back to their home/ workplace



All women in the intervention arm received the transport offer letter with their routine breast screening invitation three weeks before their appointment.

Attended?



If attended and are called back for follow up then they received the transport offer with this new appointment



If they did not attended or rebooked they were sent a further appointment letter from the screening service with the transport offer

NHS England Data Linkage

Breast screening attendance data was linked with 28 years of Hospital Episode Statistics – Admitted Patient Care (HES–APC) to assess ethnicity & deprivation within the trial cohort.

Key challenges

- Obtaining ethics including Section 251 approval.
- Receiving timely data
- Establishing data access and sharing agreements with NHS England & the Breast Screening Service.

Limitations

- Uncertainty of matching participants with hospital records.
- Potential missing ethnicity and deprivation data.
- Costs

Data Linkage Results

- 9,266 women (50–70 years old) were recruited across eight GP sites.
- NHS Breast Screening Programme attendance data, including patient identifiers, were securely transferred by the breast screening service to NHS England for linkage with ethnicity and deprivation data.
- Pseudonymised linked data were then transferred to the University of Hull Data Safe Haven for analysis.
- 83.7% (7,757 participants) were matched to data collected in the previous 28 years.

Among the 83.7% with an NHS HES–APC record:

- 1,067 (13.8%) had no stated ethnicity.
- 3 participants had no deprivation data recorded.

Match rates increased with the length of HES–APC data available:

- 5 years: 47% matched
- 10 years: 62% matched
- 20 years: 78.3% matched
- 27 years: 83.7% matched

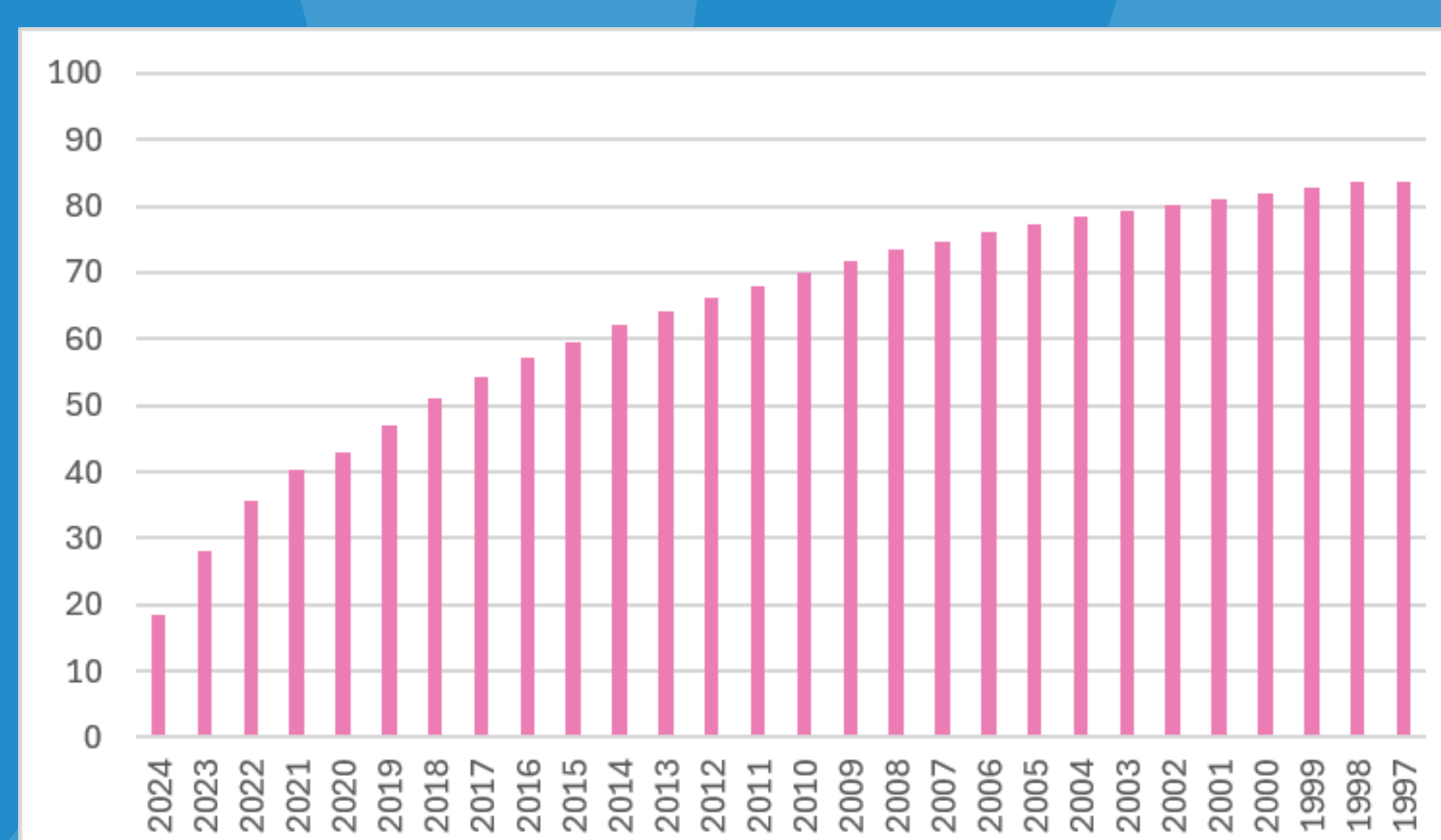


Figure 1. Cumulative percentage of the cohort with a matched healthcare record (deprivation recorded) by year of matching

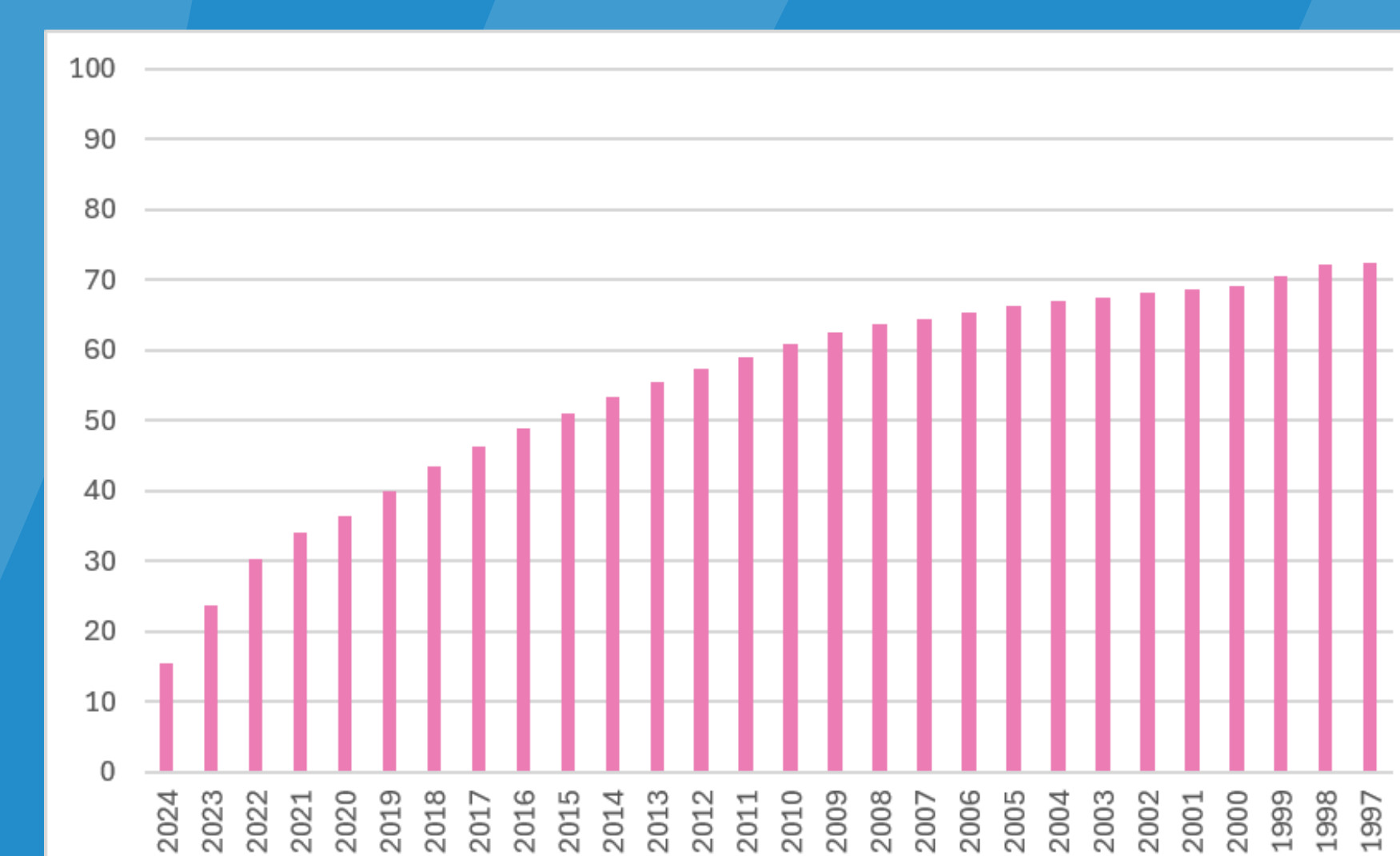


Figure 2. Cumulative percentage of the cohort with a matched healthcare record (with ethnicity recorded) by year of matching

Whilst recorded ethnicity is unlikely to change over time; residential address and associated area-based deprivation may change, so deprivation measures based on historical hospital records should be interpreted with caution.

Conclusions

Linking breast screening attendance data with routinely collected NHS data is a viable approach to address gaps in deprivation and ethnicity data and enable health inequalities to be explored. This data-enabled approach could be used in a future definitive study across multiple screening centres to collect this data.

Contact: DOORSTEP@HYMS.AC.UK
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