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## The Northern Ireland Baby Hearts Study: A Case-Control study using a hybrid data linkage method

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### Background

The Northern Ireland (NI) Baby Hearts study aimed to investigate risk factors for congenital heart defects (CHD), and to investigate the health behaviours of a representative sample of NI pregnant women.

### Methods

We performed a case-control study with hybrid data collection methods, including self-administered iPad questionnaire or postal questionnaire, information held in maternity records and linkage to prescription records. Cases (n=286) were recruited following diagnosis prenatally or postnatally, controls (n=966) were recruited during recruitment months in each maternity unit at 18-20 weeks gestation.

### Findings

Refusal rates for questionnaire completion were low (7-8%). Among those recruited, consent for access and linkage to medical records was high (98%). Recruitment of both cases and controls was closely representative of the NI population in terms of age, area of residence and deprivation. There was considerable discordance between self-report questionnaires, maternity records and prescription records regarding medications taken in the first trimester, and between self-report questionnaires and maternity records regarding behaviours such as preconceptional folic acid, pregnancy planning, and smoking. However, there were no differences between cases and controls that would indicate recall bias.

### Conclusions

Our results suggest that hybrid data collection approaches are a useful way forward for aetiological studies.

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