

## Analysis of factors associated with changing general practice in the first 14 years of life in Wales using linked cohort and primary care records: implications for using primary care databanks for life course research

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### Introduction

Primary care electronic health records (pcEHRs) are a valuable resource for life course research, however loss to follow up due to changing practices has received little attention. We investigated factors associated with changes in registration and record continuity in the Secure Anonymised Information Linkage (SAIL) databank, with ~80% practice coverage.

### Objectives and Approach

We analysed linked pcEHRs for 1834 (882 girls) Millennium Cohort Study (MCS) participants, resident in Wales and with parental consent to health record linkage at the age seven MCS interview. We studied time from first to next general practice (GP) registration in Wales by fitting Cox proportional hazards models, and estimated mutually-adjusted hazard ratios (aHRs) for the following factors: child (sex, ethnicity, mode of delivery, gestation, birthweight, neonatal illness, wheeze, longstanding illness); maternal (age, education, lone parent status); household (income, housing tenure, residential mobility, urban/rural residence); GP type (SAIL-contributing/-non-contributing). Analyses were weighted for survey design (Stata: Release 15; StataCorp LP).

### Results

There were 3065 Welsh GP registrations for 1834 children. By age 5 years, 25% of children changed GP at least once, with 1070 (58.3%), 477 (26.0%) and 287 (15.7%) registered with 1, 2, 3+ GPs respectively up to 14 years of age. Children with older mothers (aHRs; 95% CI: 0.96; 0.95, 0.98; per year) or those residing in rural areas (0.75;0.56,0.99) were less likely, and those whose first registration was not with a SAIL contributing GP (2.16;1.60,2.93), whose mothers

had no educational qualifications (1.40;1.15,1.71), or had recently changed address (1.62;1.21,2.16) more likely, to change GP. 305 (16.6%) children had never registered with a SAIL-contributing GP. Of 403 children initially registered with a SAIL contributing GP who then changed GP, 66.7% re-registered with a SAIL contributing GP.

### Conclusion/Implications

Geographically contiguous primary care databanks, such as the SAIL databank, enable a high proportion of children to be reliably followed over time despite changing GP. Similar analyses of databases based on geographically disparate volunteer GPs are needed to quality assure their suitability for life course epidemiology research.

