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Intermediate-linkage steps used to obtain longitudinal data (containing heath service use, morbidity and mortality) for a large cohort of patients who are homeless that visited, and were discharged from hospital in England.

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Introduction

In England, details on hospital admissions and mortality are recorded nationally, but housing status and patients' hospital discharge arrangements are only recorded locally within discharge services. These data are required to evaluate specialist homeless hospital discharge (HHD) services in England, and can be obtained through linkage within and across sectors.

Objectives and Approach

We aimed to improve linkage to enable the evaluation of HHD schemes. 16 sites with a scheme were recruited along with a specialist facility that deliver screening and treatment services to homeless hostels (Find&Treat). Linkage fields including National Health Service number (NHS number), name, gender and birthdate for clinical contacts between November 2013 and November 2016 were collected and linked to national hospital data, Hospital Episodes Statistics (HES). To improve linkage with HES, intermediate-linkage to a gender-names dictionary and a national demographic database (NDD) was performed. Ethics, access permissions were obtained through HRA-REC (REC16/EE/0018) and NHS CAG (16/CAG/0021).

Results

47,569 clinical contacts among people who were homeless were collected from Find&Treat and 12,931 from sites. The median age at mid-study period (15th May 2015) among contacts with sites compared to Find&Treat were similar at 44 (IQR 34-53, n=12,905) and 45 (IQR 35-54, n=47,569), respectively. Among Find&Treat, 82% (n=38,905) were contacts with Males and 18% (n=8,650) with Females. Gender was not collected at all HHD sites or for all admissions. 70% of contacts had missing gender and among these contacts, gender was assigned using the gender-names dictionary. After imputing gender, 52% of contacts all linkage fields and 47% had all but NHS number. These data were linked to the NDD, an approximate 60% linkage rate was achieved retrieving complete linkage fields for these contacts.

Conclusion/Implications

Intermediate linkage steps described here provides the largest dataset of it's kind, enabling investigations into effectiveness of hospital discharge schemes in England. The study provides generally a proof of concept that large cohorts of hard-to-reach population groups can be obtained through data linkage.