

Adding a Residential Dimension to the Scottish Population Spine – CHI-UPRN Residential Linkage (CURL).

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Objectives

In Spring 2020, Public Health Scotland (PHS) were tasked with seeding the NHS Scotland Community Health Index (CHI) with a Unique Property Reference Number (UPRN). This was to allow understanding of the impact on people residing with someone infected with COVID-19, but utility goes much further than this.

Approach

Address fields were extracted from CHI records (August 2020) of persons still alive in Scotland or who died since January 2020.

Some pre-formatting was carried out on unique address strings that were then processed at DataHub, a service, provided by the Improvement Service, helping public sector organisations secure access to a data matching service.

Files were returned with a best matching UPRN attached, and a category indicating the quality of the match.

To enhance the seeding of care homes addresses, unmatched CHI records were manually searched, and UPRN added where expert knowledge determined it was a care home address.

Results

There were 3,208,951 unique address strings processed, relating to 5,828,951 CHI registrations, including people deceased since January 2020. In total, 5,207,389 (89.3%) people had a UPRN returned with match categories EXCELLENT (78.8%), GOOD (8.3%), or FAIR (2.2%).

Only 60% of the 40,196 current CHI records that were pre-indicated with an institutional care home flag could be automatically matched to a UPRN. Following the manual expert review, 42,334 people in adult care homes could be identified with a specific UPRN.

A random sample of 1,724 address pairs, stratified by match category and urban-rural category, was selected for quality assurance review by an independent checker. Results have still to be verified, but precision is estimated to be more than 95% of matches to the correct UPRN.

Conclusion

The creation of the CHI-UPRN Residential Linkage (CURL) is a major development to CHI as a data linkage tool in Scotland. CHI has long been used as a population spine for patient-level data linkage in research projects but introducing a property-level dimension through CURL provides new opportunities for researchers.

