UPRNs in a *FLAP*

Introduction

We have used unique property reference numbers (UPRNs[1]) to identify homeless and hard to reach patients. Every property in the UK has a UPRNs. Hospital inpatients can be identified as homeless/at risk of homelessness via our daily reports (based on UPRNs and the algorithm outlined below). NHS staff and Cyrenians in-reach workers collaborate in offering support (including step-down services) where appropriate.
A unique algorithm was developed to seed addresses including arbitrary string formats with their UPRN. We can then automate matching addresses using UPRNs rather than complex and inefficient string matching.

The problem

Homeless patients do not always disclose housing status. They may indicate NFA, or their registration at a homeless-specific GP, but they may instead provide addresses that are Local Authority temporary accommodation. The given addresses rarely match formats with the addresses in the patient record system (TRAK). In Edinburgh, there are around 4000 addresses in use as temporary accommodation, changing every month. The patient record system also has multiple formats for each address; one address has over 50 unique formats.

NHS address ≠ LA address

Matching addresses manually is not feasible

Thus, identifying homeless or at risk of homelessness patients is not possible using address strings only.

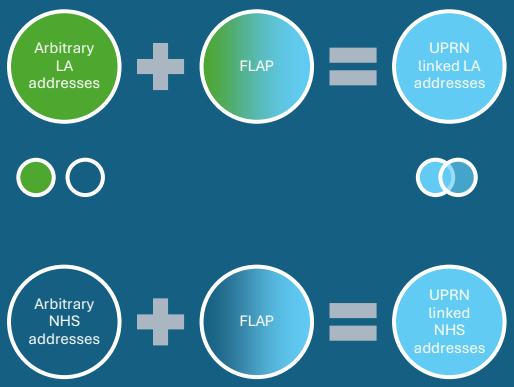
The solution

In partnership with NHS Lothian, The Usher Institute at University of Edinburgh developed a UPRN seeding algorithm.

***FLAP*: a framework for linking free-text addresses to the Ordnance Survey Unique Property Reference Number database[2]**

FLAP has a matching accuracy >99%

Data preparation:



The outcome

NHS address = LA address

We have now seeded more than 3 million addresses in the patient records, with ~ 7000 new addresses seeded each month.
Each month we are provided a list of around 4000 LA addresses to UPRN seed.

This has enabled us to run a daily report where any patients providing an address with a UPRN matching the LA UPRN, or have NFA postcodes, or are registered with the homeless specific GP are provided to the in-reach workers. Each day, there are around 15 patients in wards meeting these criteria.

References

1) OS link: https://www.ordnancesurvey.co.uk/public/unique-property-reference-numbers

2) Zhang H, Casey A, Guelli I, Suarez-Paniagua V, MacRae C, Marwick C, Wu H, Guthrie B, Beatrice A: FLAP: a framework for linking free-text addresses to the Ordnance Survey Unique Property Reference Number database Front. Digit. Health, Vol 5, 2023

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