3. Data linkage innovation

The Challenge

Current linkage practices mean that we are missing out significant numbers of people in the data, and erroneously including people who have since moved away. This is limiting the UK's ability to make effective public health decisions. We are changing data systems to allow anonymised data linkage between the home environment and the health records of residents facilitated using household (HH) linkages. Linked administrative data are efficient and have many applications: 1) Evidence of how urban green and blue space (UGBS) investments keep people healthy without needing health services; 2) The 'right' data means we can focus efforts on communities experiencing health inequalities; 3) Evidence improved health outcomes. Household linkages have people nested in their homes for the relevant dates achieved using Unique Property Reference Numbers (UPRNs). Used with the Personal Demographic Service dataset containing patient addresses, this allows robust evaluation of NCDs for the total population in an area and over long follow up periods.

Policy landscape

Government and policy-makers need to fully understand the wider determinants of health and support effective prevention of NCDs. The UK Government has agreed to a 'levelling up' agenda to prioritise help for those most in need and is looking for ways to support and measure. We are creating a way of linking environmental changes to health data, enabling the pooling of shared resources; producing a complete picture of the data, which recognises current gaps. We are part of the NHS England NW Secure Data Environment having ensured a 'bring your own data asset' function to bring details of housing and wider environmental changes and survey data to meet the routine health data. HH linkages will be part of the regional and national SDE programmes, with continued comprehensive public contributions. The 'bring your own data asset' function exists in NI, and we are working on the long-term follow up of healthcare use for all residents living close to the Connswater Community Greenway (CCG), as well as nesting within the total population the 3600 survey participants providing rich data at a 5 year follow up.

3. Data linkage innovation

Underpinning research

We are writing a review of household linkages in health data in England and NI, building on work completed in Wales and Scotland (1). We are working to co-create a new park in Birkenhead, working with Wirral Council to demonstrate the health impacts of the park. Similarly, to the CCG, we will use anonymised HH linkages to extract historical healthcare use from everyone living near the park; evaluation in this real-world local environment will be powerful. We will use these examples to influence wider policy change: Liverpool Combined Region's Spatial Development Strategy will be adopted in 2025/6 and we will influence how sites are assessed for investment and planning in terms of health outcomes. A model using HH linkages will create a blueprint to be expanded across England, following in the footsteps of Wales, NI and Scotland.

Dock Branch Park, Liverpool

Pathways to Impact

In 2023 the GroundsWell team held regular meetings with the NHS regional Commissioning Support Unit and NHS England (James Lockyer) and Cheshire & Merseyside NHS Integrated Care Board. We had confirmation that Ming Tang (Chief Data and Analytics Officer, NHS England) agreed key patient-generated Personal Demographics Service (PDS) dataset will have a UPRN column added, facilitating household linkages. GroundsWell hosted a data linkage workshop in July 2023. This in-person meeting included NHS England, the regional ICB, NHS clinicians, and local government. Co-production approaches were used to identify barriers to linkages and pathways to changing policy. We have ensured these data are a priority at our ICB for several household-based winter poverty evaluations. We will be evidencing our collaborative work through a policy briefing, co-produced with NHS England, highlighting the importance of residential data linkages, due for publication December 2023. In summary, we are influencing UK data policy to create household data linkages for long term evaluation.

References: 1 Use of data linkage to measure the population health effect of non-health-care interventions (Wales) https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(13)61750-X/fulltext and Scotland: https://www.isdscotland.org/Products-and-Services/EDRIS/_docs/CURL-Report-November-2020.pdf