

Using data to strengthen workforce planning

How a single platform is bringing together health, care, population and workforce data to support strategic planning



A practical approach toolkit

Based on NHS Humber and North Yorkshire Integrated Care Board's approach

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Introduction



Health and care organisations face a complex challenge: planning and shaping a workforce that can meet growing population needs, tackle health inequalities and respond to evolving service models. When data is incomplete or of poor quality, it makes it difficult to align workforce capacity with demand or to anticipate future requirements. NHS Humber and North Yorkshire Integrated Care Board has addressed this challenge through their People Story Dashboard, which provides a single, open-access platform that brings together health, social care, population and workforce data for local service planning and informing policy.

This toolkit is written for organisations responsible for shaping system-wide strategy across health, care and the wider public sector. Its primary audience includes integrated care boards (ICBs), local authorities and mayoral and combined authorities, particularly those seeking to strengthen joint planning, align priorities and develop a single shared view of the population. The approaches set out here are designed to support cross-sector collaboration, recognising that meaningful transformation relies on the collective insight of partners working at system level.

The People Story Dashboard itself is publicly available to everyone, but in practice it has become a core tool for system partners. It is actively and regularly used by around 40 organisations, including ICB teams, NHS providers, community interest companies, primary care, social care, voluntary and community enterprises, and the mayoral combined authorities. With more than 3,500 views (as of December 2025), it is already enabling evidence-based decision-making across a wide range of priorities and supporting long-term workforce planning and demand modelling.

The context



Health and care systems across England are facing increasing pressure to plan for the future while addressing immediate challenges. Rising demand for health and social care services, workforce shortages and persistent health inequalities require a coordinated approach to ensure services remain sustainable and responsive.

For care commissioners, accurate, timely and integrated data is essential for understanding population health needs and to identify gaps in provision. Without this data, they're often unable to make evidence-based decisions, leading to inefficiencies and unmet demand for care and support. High-quality data enables commissioners to model future need, target interventions and services where they will have the greatest impact, and ensure that care is delivered in the right place and at the right time.

Reliable and complete data is also the cornerstone of effective workforce planning because it provides the evidence needed to make informed, strategic decisions about the shape and size of a workforce. Health and care systems operate in an environment where population needs and workforce availability often change. Good data enables us to build workforces that are resilient, correctly sized and equipped with the right skills. It also underpins collaboration across sectors, ensuring that workforce strategies align with broader economic and social priorities, such as creating local employment opportunities.

Planning for the future in health and adult social care is complex, requiring accurate insights into population needs and the ability to anticipate changes in service delivery. Reliable sources of data that are easy to access and maintain are necessary to gain a clear understanding of where care is needed most and how we can align workforce capacity with demand.

About the organisation

NHS Humber and North Yorkshire Integrated Care Board (HNY ICB) works across a geography of more than 1 million hectares, making it the largest in terms of land area. It serves a population of 1.7 million people, all with different health and care needs. Its area includes the cities of Hull and York and large rural areas across East Yorkshire, North Yorkshire and Northern Lincolnshire.

The HNY ICB's stated aim is "for everyone in our area to: start well, live well, age well and when the time comes, die well." This includes measurable outcomes, such as:

- narrowing the gap in life expectancy by 2030
- increasing healthy life expectancy by five years by 2035.

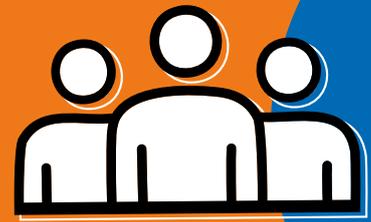
To achieve these outcomes, the HNY ICB has three primary ambitions:

- radically improving children's wellbeing, health and care
- enabling wellbeing, health and care equity
- transforming people's health and care experiences and outcomes.

The HNY ICB brings together NHS providers, local authorities, voluntary organisations and community partners to work towards these ambitions and their stated goals.

The work outlined in this toolkit was supported by multiple people and teams, including senior leadership, People and Culture, Workforce Planning, Transformation and Analytics. The dashboard itself was developed as part of the HNY ICB's Workforce Breakthrough programme – a system-facing workforce transformation programme that aims to bring partners from across their multi sector system together to address shared workforce challenges while, at the same time, growing mutual understanding to improve system function.

The approach



The challenge

Health and social care organisations in Humber and North Yorkshire faced a significant barrier to effective workforce planning. These included:

- **Fragmented data** – health and care organisations in Humber and North Yorkshire did not have a single source of reliable and trustworthy data that could be used for workforce planning. Instead, they had multiple sources, which were often difficult to collate and compare.
- **Difficulty aligning workforce with demand** – this made it challenging to align workforce capacity with population demand or anticipate future requirements.
- **No single source of truth** – the absence of an integrated source of data meant that organisations, commissioners and health and social care providers found it difficult to make evidence-based decisions or reach agreement between organisations.
- **System inefficiencies and unmet needs** – these limitations naturally led to inefficiencies and unmet care needs across the system.
- **Complex multi sector integration** – the challenge was compounded by the complexity of integrating data from multiple sectors: social care, the NHS, voluntary organisations and local authorities.

The solution – the People Story Dashboard

For HNY ICB, the solution was to scope and develop the People Story Dashboard. This is a data visualisation dashboard created in Power BI, a Microsoft tool that enables users to connect to data, transform it and create interactive reports and displays to support informed decision-making. It presents data on workforce, health, care and populations across Humber, Yorkshire and Lincolnshire in accessible formats, including maps and charts.



Emerging work, health and skills

The dashboard has been a key tool in supporting workforce planning.

- **Health and skills integration** – the original goal of the dashboard was to facilitate workforce development and planning by combining workforce data with population need and demand data.
- **Workforce planning examples** – the tool has met its original goal and is now used by organisations for workforce planning. The most recent example of this is Humber and North Yorkshire Health and Care Partnership’s annual planning process, which used the dashboard extensively.

Economic and social impact

The dashboard informs strategies beyond health and care, supporting local economic initiatives and employment programmes.

- **Hull and East Yorkshire Mayoral Combined Authority** – uses dashboard insights to understand support needs around long-term illness and unemployment, contributing to the [Get Britain Working](#) initiative.

Education and skills pipeline

The dashboard has supported conversations with education and training providers and commissioners to ensure the skills pipeline can support care demand.

- **Sizing the pipeline** – by visualising workforce data and pressure points, the dashboard has enabled more informed discussions about aligning education pipelines with workforce gaps.
- **Committee outreach** – the dashboard has played a significant role in strengthening the position of the HNY ICB Education and Training Committee by enabling data-driven discussions, allowing them to be more proactive and confident in discussions around future skills needs.

Future-focused modelling

Predictive modelling is the next frontier for the dashboard, enabling proactive workforce planning.

- **Current vs future state** – while the dashboard excels at showing current workforce and demand, its future lies in predictive analytics for long-term planning.
- **Initial modelling work** – early projects include stroke and hypertension prevention, assessing impact on admissions and future workforce requirements within local stroke units.

“The People Story Dashboard acts as a bridge and brings together the population demand and the workforce needed to deliver care. Developed through the HNY ICB’s Workforce Breakthrough programme, it is a vital tool to support the ICB going forward and will be used for strategic planning and commissioning, and to support the three shifts as outlined in the NHS’s ‘Fit for the Future: 10 Year Health Plan for England’.”

Jason Stamp, Chair, Humber and North Yorkshire ICB

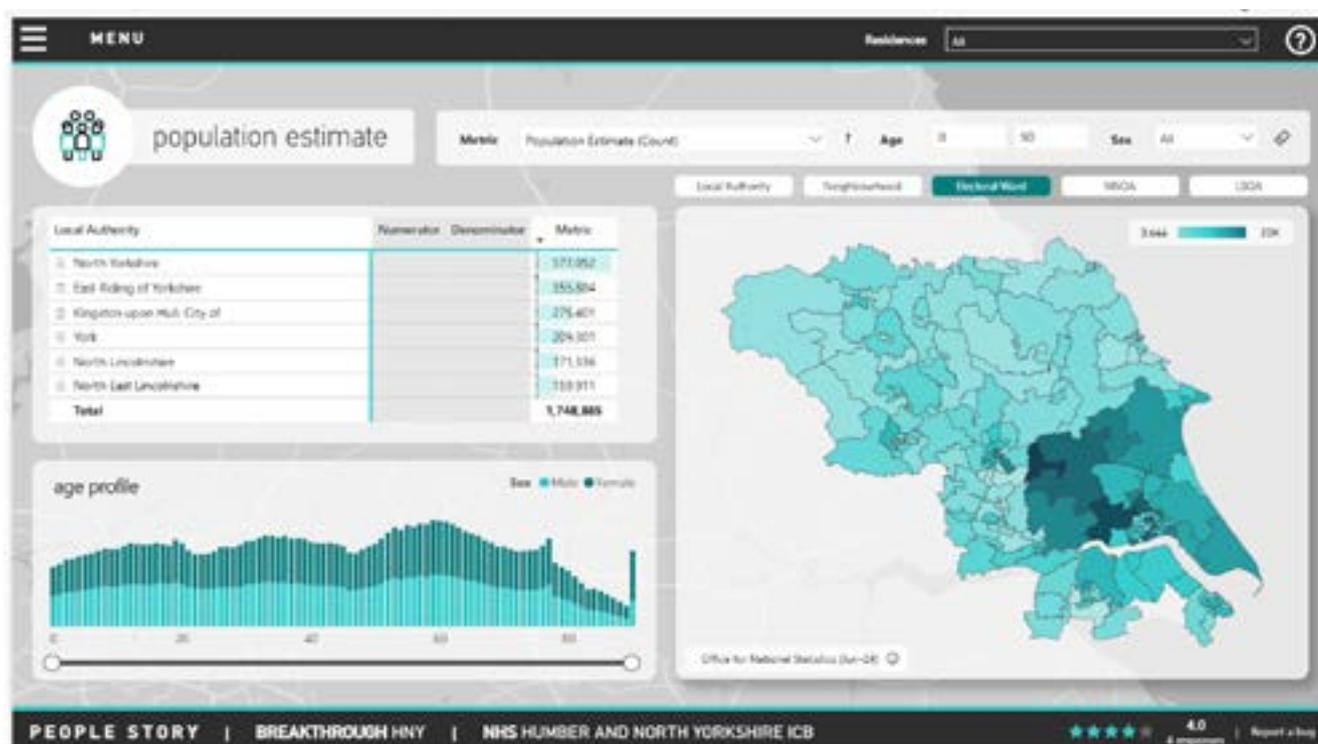


The following pages show the appearance of the dashboard and outline its basic features. It is important to note that, for the purpose of providing adequate context for the rest of the toolkit, this section only shows a small selection of the dashboard's views and does not show or describe all features and functionality.

The People Story Dashboard

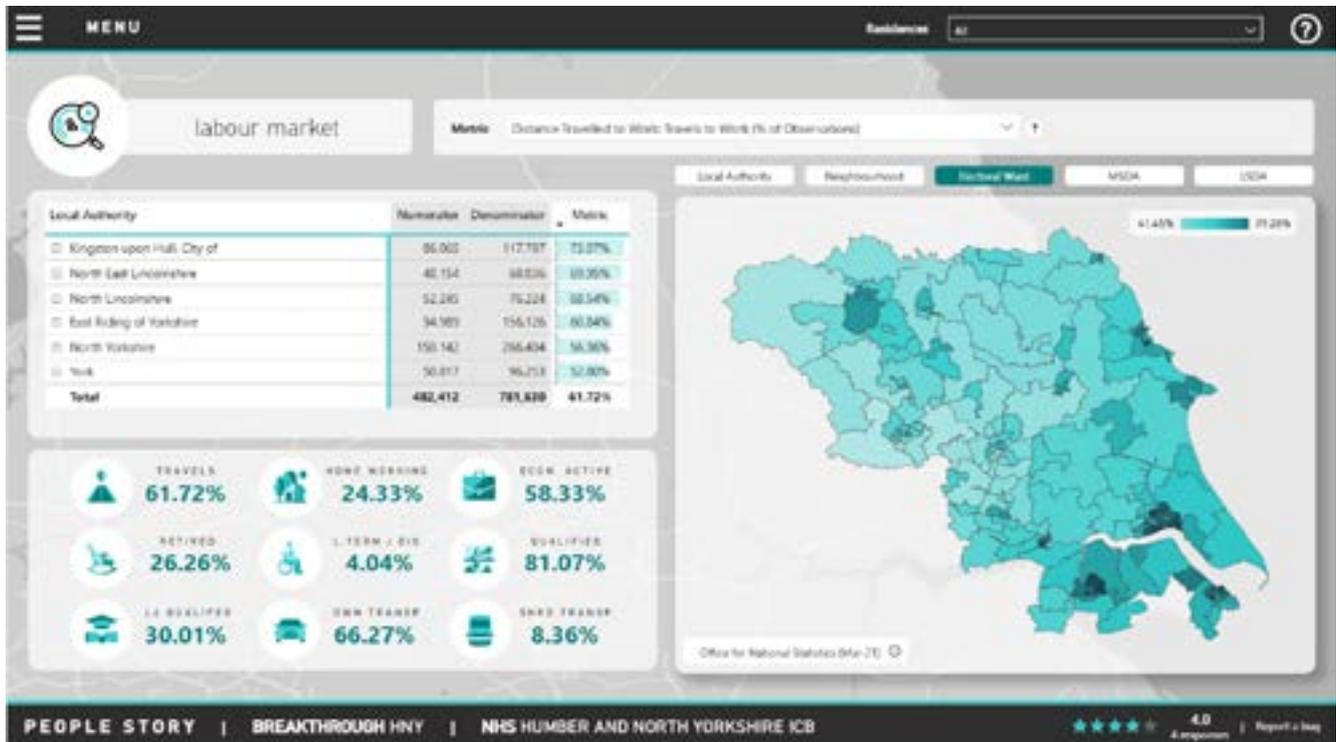
Population estimate

This is the [primary homepage of the People Story Dashboard](#) and is the first view the user sees when using the dashboard. This view shows population data alongside characteristics such as age and sex and can be filtered to a maximum depth of [lower layer super output area \(LSOA\)](#). This helps users to understand the number of people in the region who may require health and social care services.



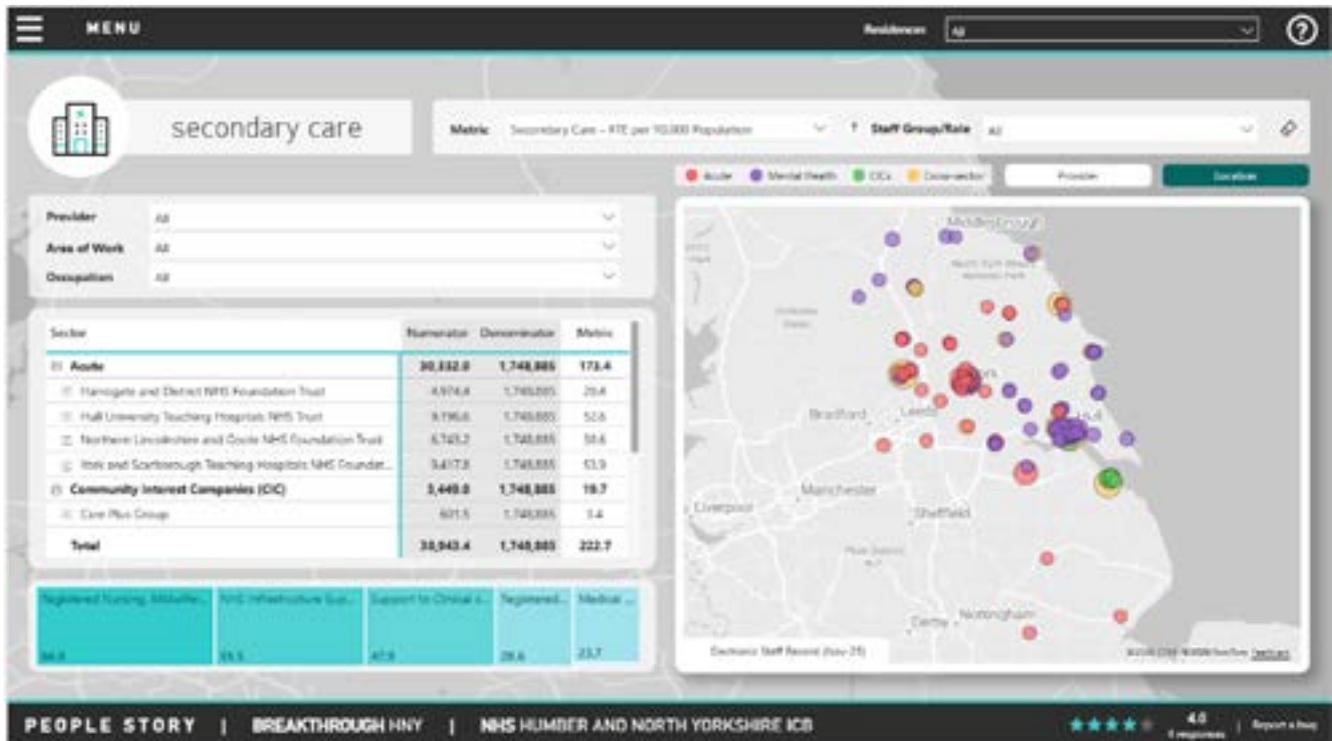
Labour market

The [labour market view](#) shows data relating to work and employment, including economic activity status, distance travelled to work, employment history, method of travelling to work, level of qualification and industry. This view can be filtered to a maximum depth of LSOA level. This can be useful to help the user understand the economic conditions of those living in the area and the relationship between those conditions and population health.



Secondary care

The [secondary care view](#) shows data on secondary care services, such as hospitals and clinics and their staffing levels and makeup. This view can be filtered down to the individual location. It helps the user understand the current provision of secondary care in the region and capacity to meet current and future demand for services.



Key decisions that secured success

Several strategic decisions underpinned the success of the People Story Dashboard:

- **System-wide inclusion from the outset** – social care, Voluntary, Community and Social Enterprise (VCSE) and local authorities early were involved from the outset, avoiding an NHS-centric approach.
- **Accessible design philosophy** – the dashboard was designed for all skill levels, with intuitive navigation and visualisation principles inspired by web and app development.
- **Technology choices** – Power BI was adopted as the primary platform for visualisation, complemented by Python, a general-purpose programming language known for its readability and simplicity, for data cleansing and custom mapping. These are powerful yet accessible technologies.
- **Granularity focus** – moving from local authority-level data to LSOA-level insights significantly improved planning relevance by improving granularity, a key improvement from early feedback and user testing.
- **Publicly accessible data** – a significant quantity of the data used in the dashboard is publicly available, minimising privacy concerns and making acquisition easier.
- **Governance and engagement** – a layered governance model (Breakthrough Committee, Workforce Board, People Story Committee) ensured accountability and stakeholder buy-in.

Key learnings

- **Early stakeholder engagement builds trust** – in-person demos and workshops were more effective than feedback forms, shaping functionality and usability. Much of the most valuable user information was captured at live workshops.
- **Granularity matters** – local authority-level data was insufficient; neighbourhood-level insights transformed the dashboard's functionality, increasing its popularity and relevance.
- **Standardisation is critical** – even with standard templates, variations in data entry required extensive cleansing and mapping.
- **Resource constraints limit scalability** – heavy reliance on a two-person team and manual processes underscored the need for funding and automation for future growth.

Timeline

Year	Key activity
2022	HNY ICB's Workforce Breakthrough programme is launched – a system-facing workforce transformation programme. The programme aims to bring partners from across the sector together to address shared workforce challenges. This programme includes plans for the development of the People's Story project.
2023	The HNY People Story Committee is established, with the goal of leading partners to develop, communicate and maintain a five-year workforce plan across the health and care system. This committee formally begins work on the People Story Dashboard.
2024	Version one of the People Story Dashboard is launched. It is intended primarily as a workforce planning tool and contains data that is limited to the local authority level. User testing identifies the need for a greater degree of granularity in data.
2025	Version two of the People Story Dashboard is launched, enabling external access to the dashboard.
2025	Version three is released and includes the triangulation feature, which allows users to visualise and compare multiple data sources at once. This version also includes the addition of data that is filterable to LSOA level, improving the granularity considerably.
2026	New version released early 2026. Work begins on implementing predictive, modelling and AI capabilities.