Title

Exploring Demographic and Regional Inequalities in Dementia Prevalence across NHS England

Project Summary

This project analyses dementia prevalence across England to uncover demographic, geographic, and care-setting disparities. By examining age, ethnicity, residential care status, NHS regions, and Integrated Care Boards (ICBs), the dashboard translates complex healthcare data into actionable insights that support targeted service planning, equitable resource allocation, and policy development.

Business Question

How does dementia prevalence vary by age, ethnicity, care setting, and geography across NHS England, and how can these differences inform more targeted and equitable healthcare planning?

What I Did

1. Built an interactive Power BI dashboard with Region to ICB drill-down capabilities
2. Modelled demographic and geographic hierarchies to enable comparative regional analysis
3. Developed DAX measures to calculate prevalence rates and proportional contributions
4. Designed visuals to:
    - Identify high-risk age and ethnicity groups by region
    - Compare residential vs non-residential care prevalence
    - Highlight regional and ICB-level disparities

Key Insights:

High-risk age and ethnicity groups by region

- Dementia prevalence increases sharply with age, with the highest concentration among individuals aged 80+
- From age 80 onwards, female prevalence exceeds male prevalence, suggesting longer disease duration or survival
- The White ethnic group accounts for 71.38% of recorded dementia cases, though 21.33% of ethnicity data is unclassified, indicating potential data quality or reporting gaps
- Ethnic group distribution varies by region, suggesting localized demographic risk profiles that require region-specific interventions

Residential vs non-residential care comparison

- Dementia prevalence is significantly higher in residential care settings compared to non-residential populations

- This highlights residential care facilities as high-demand environments, with implications for staffing, specialist training, and long-term care capacity planning

Regional and ICB-level disparities

- Substantial geographic variation exists across NHS regions
- The South East region records the highest overall dementia prevalence
- At ICB level, NHS Kent and Medway ICB shows the highest burden (14.93%), indicating a localized concentration of need
- These disparities suggest that dementia burden is not evenly distributed, reinforcing the importance of place-based planning

Implications for Service Planning

- Targeted resource allocation: Regions and ICBs with higher prevalence may require increased funding, workforce capacity, and specialist dementia services
- Age-focused care strategies: The sharp increase in prevalence among those aged 80+ highlights the need for expanded geriatric and memory care services
- Residential care preparedness: Higher prevalence in residential settings underscores the need for enhanced staff training, safeguarding measures, and dementia-specific care models
- Data quality improvement: The high proportion of unclassified ethnicity data limits equity-focused analysis, suggesting a need for improved demographic data capture to support inclusive healthcare planning

Value Delivered

This dashboard enables NHS stakeholders to identify high-risk populations by age, ethnicity, care setting, and geography, supporting evidence-based decision-making in service design, capacity planning, and policy development. By highlighting regional and ICB-level disparities, the analysis promotes more targeted, equitable, and efficient dementia care delivery across England.

Data Source

The analysis is based on publicly available data from NHS Digital:

Dataset: Primary Care Dementia Data

Link:

https://digital.nhs.uk/data-and-information/publications/statistical/primary-care-dementia-data/november-2025