Dementia in Europe: A Spatial Dashboard System for Chronic Disease Management

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Europe is both expanding and ageing. The total population of Europe now exceeds 750 million people. Many of those member countries are ageing rapidly, while demographically younger countries are joining the Union. The European Union has forecast an increase in total ageing population of more than 20% by the year 2025. This overarching pattern differs significantly by member country and region. This has major implications for the member countries and their populations who may travel freely and access health and social support services across those member states.

One of the key concerns associated with population-level ageing is dementia and the potential clinical and social service resource demands that the dementias require for effective treatment and support. Research by Alzheimer Europe indicates important variability in dementia prevalence and incidence rates by location and information source. It is highly likely that these rates, as they do elsewhere, also vary by scale factors including within countries and especially below the level of the nation state.

In this project we take current dementia prevalence estimates and population data to produce a model of dementia and subtype prevalence for the whole of the European Union. To make this accessible to a broad audience, and not only clinicians or researchers, we present the results in a spatial dashboard format. Dashboard systems are increasingly used in healthcare and elsewhere to co-ordinate and make data from differing sources accessible in the one visual environment. Dashboards typically permit users to then manipulate that data to inquire of places, issues and systems of specific interest. Dashboard users can then produce their own ‘picture’ of the data while still using an integrated system for consistency and interoperability. However, few of these utilise a geographic foundation for information management and visualisation.

The results of this developmental project permit users to produce their own ‘what-if’ scenarios of dementia and subtype prevalence in Europe for all member countries. By applying a spatial approach to the dashboard design we include a level of visual engagement with different geographies including country, provincial-level and even county-level comparisons. This includes Eurostat forecasting of projected population(s) out to the year 2060. Adding an export function to KML format means that users can explore the data in a Google Earth environment. This lets users add their own information and share outputs with colleagues and other interested audiences.

This project illustrates the potential importance of visual dashboard information strategies in the European healthcare context. Ageing and the dementias are complex and variable phenomena across space and time. Location is a significant factor in their impact and effects. Making dementia data and analyses spatially relevant to policy designers, service providers and communities supports capacity development on this key health concern. Many types of professional will need to access and explore this kind of information as European population ageing progresses. A visual dashboard environment adds value to strategies for coping and management in ageing societies.