Helping elderly people to enjoy healthier lives
St. James's Hospital, Dublin

The Challenge

- Encourage elderly people to lead healthier lives
- Reduce the number of frequent attenders to A&E

The Benefits

- A potential reduction in A&E admissions at St. James's Hospital
- Improved support for patients, enabling them to lead healthier lives
- Greater understanding of where preventative health campaigns can be used most effectively

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The Customer

St. James's Hospital in Dublin can trace its origins back to 1667 when the foundation stone was laid for a poorhouse on its site. Today, it is one of the largest hospitals in the Republic of Ireland and a renowned teaching hospital, providing emergency and elective medical and surgical services.

The Challenge

Ireland's population is aging, creating profound challenges for the healthcare sector. Older people tend to be frail and socially isolated, and often suffer from debilitating but avoidable health issues. St James's Hospital wanted to help elderly people to have a better quality of life by minimising risk factors, such as poor diet and inactivity, which can lead to chronic disease and repeated hospital admissions.

In central Dublin, people aged over 65 make up about 11% of the population, but account for around 20% of visits to the Emergency Department at St. James's Hospital and 40% of subsequent hospital admissions. Elderly people also remain longer in hospital than other age groups. "A lot of these hospital visits might be preventable if we could intervene earlier and help elderly people to live healthier lives," says Dr David Robinson, consultant geriatrician at St. James's Hospital. "We wanted to help promote more successful aging among the population surrounding the hospital."

To achieve this goal, the hospital launched Local Asset Mapping Project (LAMP), a ground-breaking initiative with dual goals. Firstly, it wanted to better understand the areas in which its patients live, because environment inevitably has an impact on people's lives and health improvement opportunities. Secondly, it aimed to make information about local services available to elderly people, to help them make better lifestyle choices that might improve their long-term health.

The Solution

To facilitate the LAMP project, St. James's Hospital went out to tender for an asset mapping solution, with the support of Digital Hub, a government-backed agency that promotes the innovative use of technology. "It was clear from the tender process that Esri Ireland was very prominent in this space and already had a mapping solution that just needed to be modified to meet our needs rather than created from scratch," says Robinson.

Esri Ireland used ArcGIS Online, Esri's Software as a Service platform to build up a web-based map of the $19km^2$ area surrounding St. James's Hospital. This geographic information system (GIS) solution presented census data, hospital attendance data and information about local health services, all layered on top of Ordnance Survey street maps.

Learn more at: esri-ireland.ie

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Dr David Robinson, consultant geriatrician, St. James's Hospital

Interactive map showing the locations of local services and facilities

Then, a team of volunteers and transition year students from Presentation Secondary School Warrenmount used Esri's Mobile Collector App, loaded on smart phones donated by O2, to walk along local streets, plotting the precise locations of health-related services. The students recorded everything from pharmacies and greengrocers where people can buy vitamins, healthy fruit and vegetables to social centres and parks where people can exercise. This local asset information was then added to the multi-dimensional ArcGIS Online map, providing the hospital with its first ever holistic view of patients, activities, services and facilities in its area

The method of collecting data was a success both in terms of engaging the local community and delivering a rewarding experience for the students involved. "The project brought geography alive!" says Helen MacMahon, a teacher at Presentation Secondary School Warrenmount. "We were out on the streets carrying out fieldwork once a week, using the latest technology, instead of reading about it in a textbook."

Benefits

The use of GIS has helped St. James's Hospital to improve its understanding of where frequent A&E patients come from. Ultimately, it aims to use this information to inform a range of new preventative health services, particularly for elderly people. "A&E is a very expensive way of providing care," explains Robinson. "If we can divert resources to provide a preventative service in those communities where there are lots of frequent attenders, we could potentially reduce the number of visits to the Emergency Department, as well as help people to enjoy healthier lives."

Additionally, St. James's Hospital plans to use the asset information displayed on ArcGIS Online to help it pioneer 'geographic prescriptions'. For elderly, at-risk patients, doctors at the hospital, nurses and GPs will not only prescribe medication, but will also be able to recommend social centres offering suitable exercise classes, nearby shops selling fresh vegetables, the closest chiropodist and local support groups. Using the GIS, doctors can direct patients to those services that are closest to where they live, making it easier for them to access and use these life-enhancing facilities.

In the future, the hospital hopes to use Esri's ArcGIS Online to set up a publically accessible web site – and possibly also a mobile app – to enable elderly people, their families and carers to find out about facilities and services in their areas. "This will empower elderly people to make better, healthier life decisions," says Robinson.

Recognising the huge significance and vital importance of the LAMP project to the future of healthcare in Ireland, he adds: "This is the first time, to my knowledge, that asset mapping has been used anywhere in Europe to promote successful aging."

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