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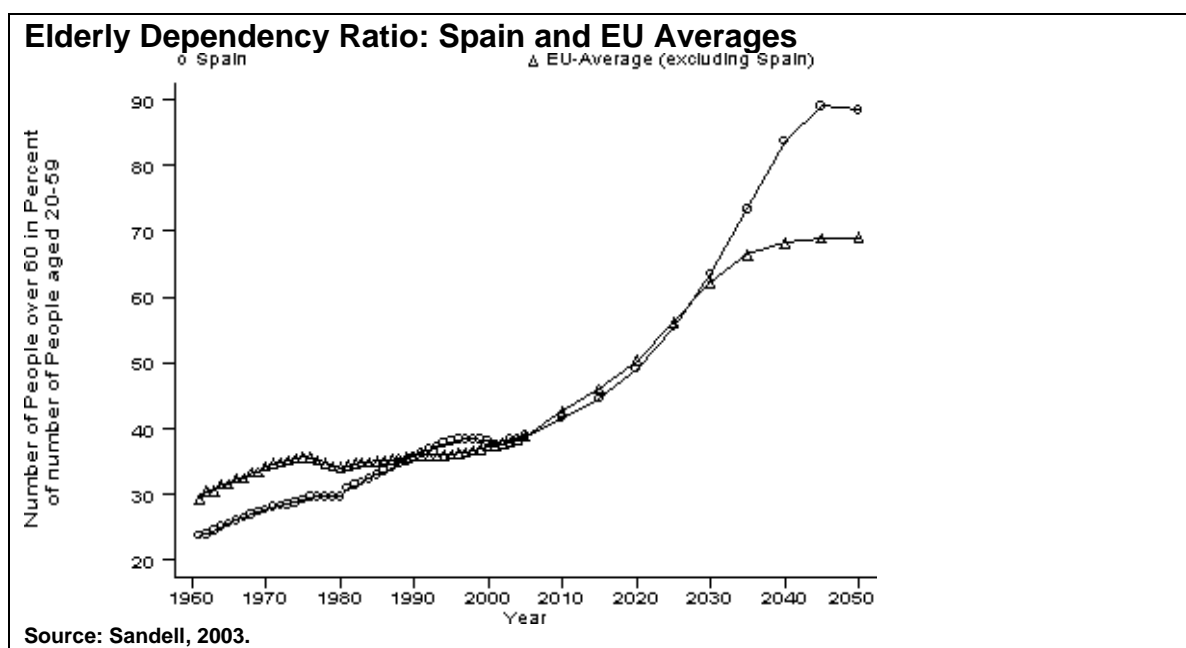
## Series 5: Programme 5 (of 9) - 'Health Matters'

### Life Line – Spain

The demographic changes occurring in Europe are well documented and impossible to misinterpret. Fewer children are born today than twenty years ago and people are living longer. These two trends give rise to a process known as population ageing. A key concern of an ageing population is the welfare of the increasing numbers of elderly living alone in their homes. The Spanish Red Cross has initiated a 'home teleassistance' to provide on-demand, cost-effective, efficient and high quality health care to the home.

### Spain's Ageing Population

The ageing process experienced by European countries is the result of two demographic trends: increased life expectancy and declining fertility rates. Increased life expectancy simply means that people live longer. The life expectancy of Europeans has increased without pause since the end of World War II. For example, between 1975 and 1998, Spain's life expectancy at birth rose by 2.8 months per year, from 73.34 years to 78.71 years. Large increases in life expectancy change the population structure. A rise in life expectancy from 73 to 79 years means that many more people in the population reach age 79 than in the past. With declining fertility rates, fewer children are being born. The result is an increased proportion of the elderly compared to the young.



Europe's fertility rates started to decline in the 1960s. In 1976, Spanish mothers gave birth to 707,498 children. In 2001, the number of births was 409,857. All European countries have seen a drop in fertility rates from well above the replacement level (2.1 children per woman) to its current average value of 1.5. The result in Spain has been a rapid increase in the average age of its population since the 1960s.

Government predictions state that the proportion of pensioners in Spain will rise from the current 16.2 per cent to 20 per cent in 2010. By 2050, if current trends continue, Spain will have the oldest average age of any country in the world. The vast majority - 85 per cent - of pensioners in Spain live with family or in their own home, which is a high proportion by European standards. But, as living habits change and young working couples move away from home earlier, an increasing proportion of the elderly are living alone. As a result, residential care for the elderly is growing in popularity. If the proportion of people over 65 keeps growing, and the birth-rate keeps slowing, individuals in Spain will have to cover the costs. If the demand for residential care continues to grow, even those at the bottom end of the scale may have to increase their personal contribution. This may involve the elderly having to sell their home to pay for their own care.

An alternative option is to provide health care in the homes of the elderly, which is also a costly initiative. However, a recent intervention by the Spanish Red Cross, with the support of the Vodafone Foundation, is beginning to provide efficient health care at a lower cost. Instead of providing day-to-day care, the 'home teleassistance' strategy means that health care arrives quickly at the home whenever the patient requires it.

### **Spanish Red Cross**

The Spanish Red Cross (SRC) was founded in 1864, and was recognised by the ICRC (International Committee of the Red Cross) in 1893. It joined the International Federation in 1919. The structure of the Spanish Red Cross is based on the administrative divisions of the state and covers the whole country. The society is composed of 912 local regional branches, 50 provincial committees, 17 regional committees (one in each autonomous community) and the national committee. All the governance bodies are elected from among the members and volunteers through a legislative procedure carried out every four years.

Within its domestic activities, SRC has developed services that allow elderly people to continue living in their own homes while benefiting from essential care and security. SRC programmes also provide support and relief for those who look after the elderly. In 2001, SRC provided services to more than 164,000 elderly people. The SRC also has services specifically aimed at people with disabilities. For both of these groups, SRC has developed a system to ensure that their safety and well-being is a priority. Advances in telecommunication technologies over the last decade have expanded health care applications, and SRC has developed an emergency contact system for immobile people.

## **What is Teleassistance?**

Home teleassistance provides personal attention for patients, be they elderly, disabled, people who live alone, or high-risk patients. Assistance is deployed immediately, at the push of a button, whenever it may be required in the user's home. Teleassistance allows health-care workers to provide a fast and effective service without the user having to lift the telephone receiver or remember policy numbers, addresses, telephone numbers, etc. The user has access to a 'hands free' communication with a permanent service centre (PSC), where the patient's records are kept. To request assistance, the patient simply pushes the button on the teleassistance unit, which is kept permanently on patient's body in the form of a watch or medallion.

The signal emitted by the device is received by the teleassistance unit that has been installed in the user's home, with a range of about 60 metres. The microphone embodied in the unit detects the call for assistance, and transmits the signal to the PSC. In the centre, via a specific computer system, the call is received and a conversation can begin between a qualified health care professional and the patient. All the information necessary for dealing with the situation is displayed on the computer screen: personal details, relative, doctors, medical records, contacts etc. The necessary human and/or material resources are then mobilised and contact is maintained with the user until the situation is under control.

## **Technical Equipment**

In the health-care call centre

- **Computer network:** Multi-station network that supports powerful software and seven different screens to allow the health-care professionals to identify the user and hold the 'hands free' conversation. It also displays details and resources about the patient who has called. The GSM (Global System for Mobile communication) network shows the location of the nearest mobile telephone mast, while a GPS (Global Positioning System) pinpoints the patient's location to within metres.
- **Receiver unit:** This identifies the patient who is calling, converts the acoustic signal of the patient into a optical data, and transfers this optical patient data to the computer network.
- **Software:** Databases are programmed by the health care centre according to requirements and allow the mobilisation of resources via modem.

In the patient's home

- **Base unit:** A small device fitted with a microphone and speaker, both of which are highly sensitive, make up a hands-free two-way voice communication system.
- **Push-button:** Small in size, very light and made with rounded edges and of hypoallergenic material, this device is easy and comfortable to wear permanently. It is also waterproof. This device activates the base unit.

## Technical Terminology Explained

The **Global Positioning System (GPS)** is a satellite-based navigation system made up of a network of satellites placed into orbit around the Earth. GPS was originally intended for military purposes, but was rapidly adopted for civilian use and is now common in any GIS (Geographical Information System) that requires spatially referenced data. GPS works in any weather conditions, anywhere in the world, at any time of day.

GPS satellites circle the Earth in a very precise orbit and transmit information to the Earth. GPS receivers take this information and use triangulation to calculate the user's exact location. The GPS receiver compares the time a signal was transmitted by a satellite with the time it was received. The time difference tells the GPS receiver how far away the satellite is. With the distance measurements from some other satellites, the receiver can determine the user's position and display it on the unit's electronic map. A GPS receiver must be locked into the signal of at least three satellites to calculate a 2-dimensional position (longitude and latitude) and track movement. With four or more satellites, the GPS receiver can determine the user's 3-dimensional position (longitude, latitude, and altitude). Once the user's position has been determined, the GPS unit can calculate other information, such as speed, bearing, track, distance moved, distance to destination (where stated), time of day at that location etc.

The **Global System for Mobile communication (GSM)** was originally called a Group Special Mobile (hence GSM). GSM is the most successful digital mobile telecommunications system used today. It is a typical second-generation cellular mobile system, which evolved from the analogue cellular mobile generation. GSM can support both voice and data services.

## Mobile Assistance

With a range of about 60 metres, the elderly and immobile population of Spain are no longer confined to their homes. They can venture outside, safe in the knowledge that help is just the push of a button away. With range capabilities increasing all the time, this health-care initiative can provide security from all at-risk individuals (e.g. the elderly, victims of violence etc.) no matter where they are. With home teleassistance established across Spain, plans are being initiated to make it mobile across the country. Patients no longer have to remain in their homes or be admitted to care residences. The quality, customised care they receive ensures that they feel protected and safe during their daily activities.

## Acknowledgements

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## Further Information

### Reference Material

Sandell, R. (2003). *Ageing Populations: An Option for Public Policy Reform* [on-line]. Madrid: Real Instituto Elcano. Available from: <http://www.r-i-elcano.org/documentos/58.asp>. [Accessed 08/10/2004].

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