

# Case Study

## RAI History

The Icelandic Ministry of Health, in co-operation with the Directorate of Health and Stiki, has been responsible for the development of software for the health care services, the RAI systems. The systems are based on the RAI methodology, i.e. the Residential Assessment Instrument.

Development of the RAI methodology began in the US in 1990, and has since been translated and localised throughout the world in a multinational collaborative framework named interRAI. Iceland's participation in this partnership began in 1993. Use of the method is subject to copyright, and the Ministry of Health has negotiated an agreement with interRAI authorising Stiki to use the RAI methods in these new information systems. The RAI systems that Stiki has developed are:

- **RAI-NH (RAI Nursing Home).**

RAI Nursing Home has been in use in nursing homes and homes for the elderly throughout Iceland since 2002.

- **RAI-HC (RAI Home-Care).**

RAI Home-Care was implemented in 2005 by the Reykjavík Health Care Services and the Reykjavík City Welfare Division.

- **RAI-MH (RAI Mental Health).**

RAI Mental Health is under development and is expected to be implemented at Landspítali University Hospital early 2007.

- **RAI-PAC (RAI Post Acute Care).**

RAI Post Acute Care is under development and is expected to be implemented at Landspítali University Hospital early 2007.



## Rising costs in the health care system

*“An important system/instrument for the optimisation of health care services in various fields” – says Siv Fridleifsdóttir, the Minister for Health and Social Security. The Ministry has been responsible for the implementation of the RAI information systems and linking health care institutions into a health care network.*

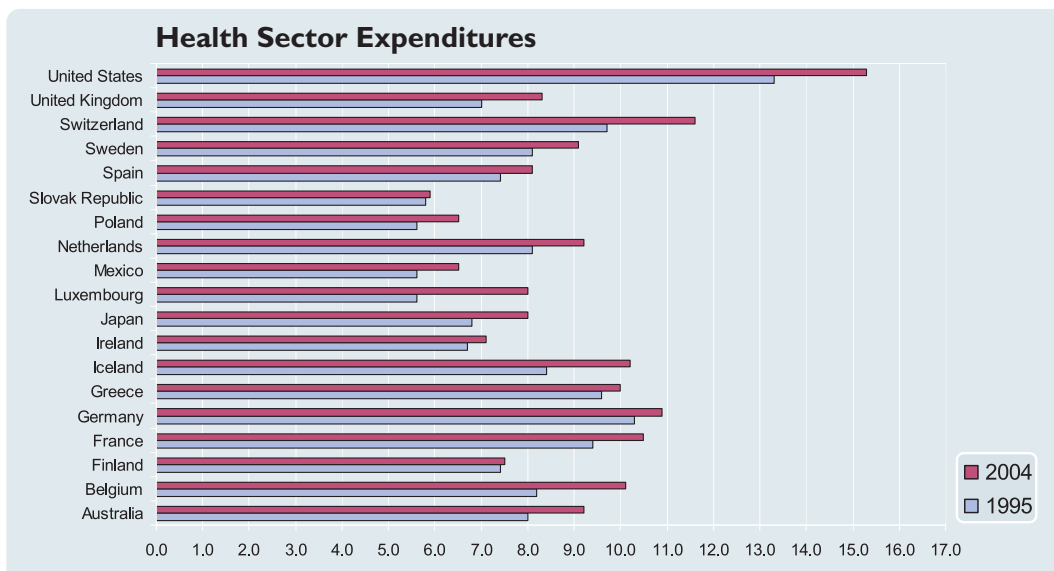
Information from the OECD shows that the total expenditure of individual nations toward health care as a proportion of GDP is growing every year. This is the state's highest cost item in most countries.

Information technology is a key support aspect in Icelandic health care services and is used systematically to improve the quality of services and to reduce costs.

## Sunnuhlíd

Sunnuhlíd is a nursing home for the elderly in Kópavogur. Sunnuhlíd is operated by 11 organisations and associations in Kópavogur, usually referred to as the Sunnuhlíd organisations (Sunnuhlídarsamtökin).

The goal of Sunnuhlíd is to be, at all times, a leading nursing home in Iceland as regards services to its residents, living conditions and staff working conditions. All nursing is geared toward strengthening the self reliance of residents while providing assistance wherever ability fails, with an emphasis



The figure shows government expenditures on health issues as a proportion of GDP in states within the OECD.

on respecting the autonomy of the individual. Efforts are thus made to take account of the abilities of each and every individual. Emphasis is placed on creating a domestic atmosphere with the wellbeing and safety of the residents in mind, to make it easier for residents to adapt to changed circumstances by among other things emphasising co-operation and providing support to the families of residents. Nursing is thus provided with professional knowledge and responsibility and with regular assessments of the quality of care.

There are 73 residents in four wards, one of which is for individuals with severe memory impairment.

There are 140 members of staff in 77 full-time equivalent positions in the home.

### Use of RAI assessments in nursing homes

Sunnuhlíd is under obligation, as are other nursing homes in Iceland, according to regulations established by the Ministry of Health and Social Security, to assess the living conditions of its residents at least three times a year using the RAI-NH assessment instrument. In addition to these three assessments, additional assessments may be performed, e.g. on the arrival of new residents or due to changes in the condition of residents between these three assessment periods which nursing homes are under obligation to assess. The RAI assessment enables the home to closely monitor the health of its residents and the assistance and care each person requires. The assessment provides information on the weight of the care, indications of the quality of the services provided, assessment keys to analyse possible problems or subjects, as well as other useful information concerning the home's clients, e.g. through RAI-scales. The RAI scales available include social engagement, ADLs, pain, cognitive performance, depression rating and chess scales.

### Usefulness of information gained from a RAI assessment

The results from the assessment are used to prepare nursing plans based on quality indicators, resident assessment protocols and the weight of care. Moreover, this information is useful in quality improvement projects and in the preparation of procedures as well as assessments of their success. Institutions can compare themselves with national averages and wards within the same institution can likewise compare themselves. Thus the instrument increases residents' likelihood of receiving better services and achieving greater wellbeing during their stay in a nursing home and, at the same time, health authorities can monitor the services and quality of care in institutions. The RAI assessment instrument is a useful tool that enables management to gain an overview of the services provided and their quality, the health of their clients, the CMI of wards and the home and for comparisons with other nursing homes. The RAI assessment instrument can promote greater economy in operation, e.g. as regards staffing requirements, taking account of the CMI of care and the indications this provides about the quality, as increased quality often means less costs for the home. For example, pressure ulcers lead to expensive treatment costs, and the same can be said of bladder incontinence etc.

### Co-operation with Stiki

Co-operation with Stiki has, from the beginning, been good. During the development of the computer system, Stiki employees remained in contact with the persons using the system and took into account their comments and suggestions during the development of the software.

### RAI for research purposes

RAI data spanning approximately a decade is currently available in Iceland. Such data is priceless in research studies. The data can be utilised in both pro- and retroactive studies as well as for investigating the status of particular matters at any point in time. The data is used in non-personally identifiable form during studies. Several research projects based on data from the RAI-NH system have already been completed. Dagmar Huld, the Director of Nursing at Sunnuhlíd, performed one such study. The sample consisted of the residents that were assessed using the RAI instrument in the autumn of 2004. The object and goal of the study was to describe recreational activeness among the residents of nursing homes taking into account their physical and mental ability.

The conclusions of the study can be useful to nursing homes when organising recreational activities in the homes, both as regards different groups with respect to ability and care requirements, as well as different desires for recreation.

### Maximum security

Data entered into the RAI systems is sensitive personal information. As a result, every effort has been made to ensure the security of the data.

Stiki hosts the databases of the RAI-NH and the RAI-HC systems. The security of data hosted by Stiki is of the greatest importance. All connections to the database are secure and encrypted. Furthermore, an extensive access management system is used which ensures that the users of the systems can only access their own data.

Stiki knows through its own experience about the threats posed to data and is committed to maximising the security of its own data as well any data it hosts. Stiki is subject to the information security specifications of the security standards ISO 17799 and ISO 27001 and is security certified in accordance with ISO 27001 by the British Standards Institute.



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STIKI operates an Information Security Management System and a Quality Management System that fulfills the requirements of the standards ISO 27001 and ISO 9001 as certified by the British Standards Institution, BSI.

