

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.

Sóltún

At the beginning of the year 2000, the Ministry of Health and Social Security decided to seek new ways to increase the number of nursing home places in Iceland and issued an invitation to tender for the construction and operation of 92 nursing home apartments. The company Öldungur provided the best tender and the Ministry of Health subsequently signed an agreement with Öldungur on the construction of the nursing home apartments, and their operation for 25 years. The Sóltún Nursing Home was opened on 7 January 2002. Sóltún is the first nursing home in Iceland that offers apartments exclusively for individuals. Each resident has his own 30 m² studio apartment with a spacious bathroom.

Emphasis is placed on the autonomy of the individual, respect for privacy, vigour and eagerness, as well as ensuring that safety and wellbeing are a priority. To achieve these ends, the operation is continuously reviewed through active quality monitoring in all fields of the service.

The ideology behind the Sóltún Nursing Home places emphasis on caring for the individual while ensuring that the autonomy of the individual is respected in all care. A domestic atmosphere



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and respect for the privacy of each resident is emphasised, and at the same time, the secure feeling resulting from co-habitation and around-the-clock nursing services is achieved. The focus in each apartment house is on the activities of daily life, with emphasis on the participation of residents and their relatives according to the ability, desires and wishes of each individual.

The purpose of the home is to ensure that nursing and other services are provided in a professional and responsible manner. Health assessments must be holistic, and nursing plans must be registered and subject to continuous review, both with the aim of increasing and maintaining the self-reliance of the resident as well as his ability to adapt to altered circumstances. The safety and wellbeing of the resident is given priority along with upholding his/her self-image and self esteem despite worsening health and loss of ability. The nursing is based on nursing-theories, knowledge gained from experience and the framework that internal and external circumstances place on the home.

The goal of the Sóltún Nursing Home is to be, at all times, a model home among nursing homes. The aim is to provide residents with the best possible services at all times and be an attractive place of work employing capable employees in every position. All aspects relating to the design of the building and the choice of furnishings and equipment have been based on this aim. The operation, housing and all facilities, therefore, must always be subject to continuous reviews which take account of new ideas and knowledge development.

The use of RAI at Sóltún

The Sóltún Nursing Home has relied exclusively on electronic medical records since it was opened on 7 January 2002. Among these, the RAI assessment plays a key role, as it provides an overall view of the nursing requirements and health of the residents. The assessment covers demographic information, assessment of cognitive skills, perception, mood, functional status, continence, disease and other health problems, oral and nutritional status, skin condition, activity pursuit, use of medication and special treatments and operations. Nurses are responsible for ensuring that the assessment is performed regularly according to regulation. In addition to their nursing education, all nurses have attended a day course held by the Directorate of Health to be trained in harmonised assessment methods. Other professional groups such as orderlies, physiotherapists, occupational therapists and physicians participate in the assessment as appropriate.

Benefits of using RAI

The main benefit for the resident is that the assessment analyses the problems that need treatment, and warns of the risks that identified assessment aspects indicate could occur if nothing is done. Thus the assessment supports the medical decisions of the nurses in the preparation of nursing assessments, goals and treatment plans. Since the assessment is repeated when permanent changes over a certain period have occurred, it is possible to follow-up on changes to health and nursing requirements, assess improvement and deterioration, awareness of nursing pressures and changes to care requirements.

The RAI assessment includes indicators of quality. Thus it raises a red flag in the conclusions if there is reason to examine whether the level of quality is acceptable, or whether better results can be achieved. It also sends up a red flag if a resident is assessed as being at risk. Then a preventive measures schedule during treatment can be prepared.

The RAI assessment instrument also categorises the residents according to their state of health and nursing requirements. The first category is governed by reduced physical ability, as the residents of nursing homes have all lost some ability but in differing degrees. If the reduction of ability is accompanied by behavioural problems, the Case Mix Index (CMI) increases; the same applies in the event of impaired cognition, such as the loss of memory. If the resident receives clinically complex or special care, i.e. nursing which requires a nurse rather than an orderly or a general employee, and repeated monitoring of the treatment by a physician, the nursing CMI rises. Considerable impairment in all these factors, in addition to extensive nursing and medical services, generally results in the highest CMI. Special rehabilitation is a category that can be added to any of the other categories. Training by a physical therapist, occupational therapist, speech therapist, music therapist and psychological support and more are also assessed. The nursing CMI among residents living in a nursing home is set to 1.0. Account is taken of the CMI in the per diem rate from the State Social Security Institute (SSI), as the Icelandic state is, for the most part, responsible for the cost of nursing and the stay of residents in nursing homes in Iceland. To a small extent, depending on income, the resident himself participates in the cost, in accordance with the calculations of the SSI.

The importance of RAI in quality control

Quality work in nursing homes benefits considerably from the RAI assessment instrument as regards individual residents as well as target groups. Thus the Sólún Nursing Home has, since it began operating, established quality teams to work on improvements based on the results of the quality indicators of the RAI assessment. The following quality teams are currently active: fall team, nutrition team, bladder incontinence team, quality team on protection against restrictions team, depression team, palliative team and an infection prevention team. The quality teams have all prepared quality standards and educational material on their subjects. Furthermore, quality criteria have been established for lower and upper limits, and systematic work is being performed to maintain results within the criteria and as close as possible to the lower limits. For the benefit of the residents and the work, we do not seek average results but focus instead on achieving the best possible results in each case. Each team maintains regular surveillance on their subjects, provides care-givers with recommendations and provides consultancy services in more complicated cases. Furthermore, the teams ensure the maintenance of continuing education within their subjects with the provision of training within and

outside the nursing home. Annually, the Director of Nursing holds a meeting with the staff to review the results of the quality indicators, cases are analysed and quality standards are determined. Sólún has achieved considerable success as a result of the quality work. Information from RAI assessments is of vital importance in such work to ensure that the success of the work is measurable resident assessment protocols that identify residents in risk groups are used to support team work and the presentation of nursing analyses. These protocols contain standards for nursing plans.

Overall view of the requirements of residents

The RAI assessment instrument includes several scales which research has shown are as reliable as other available scales. These are ADL scales that measure ability factors, pain scale that measures the severity of the pain, social engagement scale that indicates prospects, depression scale that indicate the severity of depression, cognitive performance scale that assesses memory impairment and calculations of body mass index that detects the nutritional condition of the individual.

Thus the RAI assessment provides the comprehensive information necessary to gain an overall view of the requirements of residents, nursing wards and nursing homes and to evaluate the success of the work. The authorities can use the results of RAI assessments to evaluate the health of the elderly in Iceland in comparison with other countries and the results of nursing homes.

Co-operation with Stiki

Co-operation between Sólún and Stiki began in 2001, before the home was even opened in January 2002, through consultation on the design of the manner in which to ensure information security and data storage of medical records and other information in the operation of the nursing home in the best manner possible. In addition to advice on housing matters in this respect, work was performed on the implementation of a security manual in accordance with BS7799 (now ISO 27001 and ISO 17799) issued in 2002. Sólún was the first company in the health sector in Iceland to adopt such work practices. Co-operation with Stiki has been based on trust and professional work practices in all respects. Sólún was one of the first nursing homes to test-run the use of the RAI software system through the Icelandic healthcare intranet and later by using electronic certificates on the healthcare network for assessment systems. The RAI software has proved to be user friendly, and Stiki has established a web site for users. The site contains user manuals and updates. The electronic RAI assessment and conclusions have resulted in a revolution in the processing of data and the progress of geriatric services in Iceland.



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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.

