



Ageing in Place

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LAWRENCE NORMIE

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Introduction

As the paradigm shifts to delivering healthcare and aging services to people in homes, a dynamic, comprehensive and reliable system called Aging in Place is required for providers to fully realize opportunities serving people who age in place.

Louis Tenenbaum – The Aging in Place Institute

In recent years, there has been a significant increase in life expectancy. As a result, the burden on both the system of health, social services and family caregivers has grown significantly. The forecast is that life expectancy will continue to rise, the number of elders will increase, and, simultaneously, the demands and burden on the service system and on families will grow.

The dramatic increase in the number of elderly has great significance in terms of national policy in every country, and its implications with regard to the allocation of national resources and budgets. Furthermore, increased life expectancy has an impact on family members, relatives and friends who assist elders in their old age. The older the population grows, and the greater the number of elderly, so, too, the greater the need to support this population. This assistance includes financial, medical and social services, and is provided to elders by both the formal and informal systems.

Aging in Place is one of the most promising answers to these issues. It may save financial expenditures and improve the quality of life of elders. It is also very important to emphasize that the elderly want to continue to live at home. In a well-known study conducted by AARP in the United States, 92% of the 65+ segment answered that they preferred to continue residing in their homes (AARP, 2000). This survey was repeated and the results remain very similar (AARP, 2010).

The main aim of this special issue is to provide a sample of policy and service models that are at the forefront of global work on “Aging in Place” for older people. The five articles, from their different perspectives and cultural contexts, provide overviews of recent developments in this field from several countries, addressing and examining the topic at various levels – the micro-meso levels of the individual, family and community and the macro level of the society. These issues are of interest to a global audience.

The key to these developments is the striving of policy makers, the scientific and professional community for an enhanced quality of life of elders, answering their wishes to stay at home as long as possible, maintain their independence and strengthen their choices. This was reflected in the WHO Policy Framework on Active Aging in 2002, which aims to support communities to answer the needs of their older citizens. To this end, the 'Age Friendly' community concept was developed whose goals are: to recognize the great diversity among older persons; to promote their inclusion and contribution in all areas of community life; to respect their decisions and lifestyle choices; and to anticipate and respond flexibly to aging-related needs and preferences.

In a recent report of the OECD, it is clearly stated that "over the past couple of decades, nearly all OECD countries have been encouraging 'Aging in Place' policies. The trend reflects the preferences of older people to receive care at home" (2010, p. 296). Moreover, a European Union report of 2008 outlines the following: "Countries are firmly focused on enhancing tailor-made home and community care services and moving away from institutional care.The goal is to help individuals remain at home for as long as possible This also supports individual choice and preferences: in general people want to live for as long as possible in their own homes, close to their family and friends." (LTC in the European Union, p. 14).

The question is then how do countries around the globe react and act to implement the view of helping the growing older population to achieve a successful 'Aging in Place' policy. An excellent example of such implementation can be found in Denmark where care of elders at home is usually free, financed mainly by the municipalities, and includes medical and health care at home by nurses, rehabilitation services and nursing care. It allows families not to be involved in physical care but if they are, to be supported by the government/municipalities with respite care services and in certain cases, also by paying the families directly. The 'Aging in Place' approach should provide a sustainable personalized platform answering a wide range of health and social care needs identified by and for the older population.

The special issue includes five articles by experts on the topic that deal with various aspects of how this policy is implemented, sharing the experiences in their countries. They discuss different models, which show

how to address the commonly shared challenges. The first article is an account of 'Aging in Place' at the macro European level by Dr. Elizabeth Mestheneos: 'Aging in Place in the European Union', followed by an article discussing a specific example from the Netherlands by René van Kuijk, Anneke Offerreins and Gertjan Baars: A case study of the most eminent key conditions in regional innovations to support elderly people staying at home longer. The third article is by Prof. Yitzhak Brick from Israel which presents brief models from several countries and goes on to discuss and analyze the implementation of the 'Aging in Place' policy in Israel. The fourth article is from Australia by Prof. Helen Bartlett: 'Aging in Place down under' with the final article by Lawrence Normie from Israel on: 'Technology for Aging in Place'.

In this special issue, thus, various approaches to, or models of 'Aging in Place', and its definition are outlined, in relation to the current state of knowledge in several countries and in Europe and finally, priorities for future developments in this field are discussed.

In 2004, IFA published an issue on 'Aging in Place' in its newsletter, 'Intercom'. Seven years have gone by since when it was published and there has been significant progress made in the field. We believe that it is important to feature this topic again and bring to our readers some of the latest developments in this area.

Prof. Yitzhak Brick

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Aging in Place in Israel

Definition

“**A**ging in Place”, sometimes called “Aging at home”, means that people continue to live in their own homes in their community and in their natural environment, for as long as they are able and interested in doing so. The assumption is that continued living in the community obviates or postpones their transfer to a residential facility.

Most elderly people prefer to continue living in their homes and in a familiar environment. An institutional framework, mainly because of their fear of losing their independence, (Clarity, 2007) deters them. On the other hand, remaining in the community and in their familiar home surroundings, assures the elderly of their independence, freedom of choice and self-determination in their everyday lives. There are diverse psychological motivations, which influence people’s desire to continue living in their own homes, as they grow old:

- **Independence:** The desire to continue being independent and not dependent on other factors; the ability to control the physical elements that surround a person in his/her close environment.
- **Familiarity:** People wish to continue being in a familiar environment, in which they have a simple and clear orientation, and in which they know their neighbors, the shops, the neighborhood park, and so forth.
- **Home maintenance:** The day-to-day maintenance of the home, arranging belongings, cleaning and cooking - all of these have both a physical and cognitive significance.
- **Hospitality:** The desire to continue the tradition of welcoming friends, family and relatives into one’s home.
- **Historical significance:** The home is a significant place, replete with memories from the past regarding events, celebrations, parties and meetings.
- **Status:** The home is a place which endows its owner with a symbol of status.
- **Support:** The home serves as an incentive to family members and relatives to continue to visit the senior, to support him/her and maintain contact with him/her (Fogel, 1993)

In a well-known research study carried out by the AARP in the U.S., 92% of the 65+ segment answered that they preferred to continue residing in their homes (AARP, 2000). This survey was repeated by AARP and the results remain very similar (AARP, 2010).

There are two aims, which underlie the approach supporting and encouraging aging in place. The first, from the standpoint of the elderly person and his/her family, is that continued residence at home in old age improves the quality of life; the second, from the policymakers' standpoint, is that aging in place involves lower financial expenditure than residential care.

The Challenge

The increase in age is followed by functional and health problems, such as: declining hearing and sight, problems of mobility and memory decline. At the same time, there is a general decline in health, manifested by higher blood pressure, cholesterol, diabetes, as well as chronic illnesses connected with old age, such as Parkinson's and Dementia. All of these have an impact on the ability of the elderly to preserve their independence.

What is the attitude to these phenomena within the framework of the "Aging in Place" approach? The institutional framework offers a comprehensive system of services that answers the needs of functioning, health, nursing care and well-being. Does the concept of "Aging in Place" provide an appropriate answer?

The challenge is, therefore, to provide supportive services in the community and at home, that are able to answer the special needs that are likely to develop in the course of the aging process. Presumably, continuing living at home, accompanied by a decline in health and functioning, without an appropriate system of supportive services in the home and community, does not contribute to the well-being of the senior and his/her family. Moreover, this may possibly lead to negative results and the risk of deterioration. It is not sufficient that supportive services exist; several features must characterize these services:

1. **Scope of the services:** The system of services in the home and the community must be broad and comprehensive enough to be able to answer diverse needs.
2. **Quality of care:** The system of services must be professionally based and with high professional standards. It is not enough for these services to exist; they must be effective.

3. **Accessibility:** The services need to be accessible in a number of ways: *financial* - to enable the senior and his/her family to purchase the services despite their financial cost; *physical* - to enable elderly who suffer from problems of mobility, to get to the day-care center or any other service in the community which they may require. Without suitable transportation arrangements, the elderly will not be able to enjoy available services;
4. **Information:** The existence of an efficient and up-to-date information system, which displays the services, explains the terms of eligibility for them, and the ways of using them, while being intelligible and clear to the senior and his/her caregivers.

To sum up, the challenge facing policymakers and those responsible for the development of services is to provide the elderly with a broad and diversified community services system, on a good and efficient professional level.

The Home and Community Services in Selected Countries

In almost all the developed countries, there is full agreement on the need to enable the elderly to continue living in their own homes, and the need for developing supportive and appropriate services in the community.

The United States

In 1965, the United States enforced a major law concerning old age, called the Older American Act. Since its enactment, the Administration has been working to promote a policy of "Aging in Place." This policy was carried out via the AOA (Administration on Aging). Over the years, the trend of "Aging in Place" has intensified, as has been evident by the changes introduced in the law in the years 2000 and 2006.

Beginning in the year 2002, a comprehensive national program was initiated, specifically directed and focused on achieving the goal of aging in place – NORC (Naturally Occurring Retirement Community). (Hunt, 1985, 1990, 2001). This assistance program of the Welfare and Health Services is designed either for seniors living in a geographic locality, a large apartment building or within a single neighborhood. The declared aim of the program is to encourage independent seniors to continue living in their homes. (Black, 2008). Another

program is PACE (Program of All-Inclusive Care for the Elderly). In 2010, there were already 75 programs in 29 different states. The program is based on the perception that it is desirable and preferable for the disabled senior and his/her family to continue living at home to the extent that this is possible.

The U.S. Administration on Aging published, in 2009, a call for proposals (AOA, 2009) for the funding of innovative programs geared to aging in place (CIAP - Community Innovations for Aging in Place). Fourteen organizations won grants within the framework of this program (AOA, 2010).

Canada

A parallel program to the American PACE program was developed at the end of the 1990s in Canada. The program, called SIPA (System of Integrated Services for Older Persons). The aim of the program is to care for elderly people aged 65+, with a high disability level and who are living in the community. SIPA was responsible for the provision of all the health and welfare services aside from institutional services found in this model (Beland, et al, 2006; Kodner, 2006).

Another model which was developed in Canada at the beginning of the year 2000, and was similar to the SIPA program, was PRISMA. This program covered the 65+ segment of elderly with disabilities living in the community, with the aim, among other things, of reducing the rate of institutionalization in that segment, as well as expanding the services in the home and the community (Herbert, Durand, Dubac et al., 2005).

Japan

The Japanese government developed a national policy aimed at enabling old people to live happily and honorably with government aid. In April 2000, a national program called “Long Term Care Insurance” was inaugurated in Japan. It was designed to help seniors and their families continue living in their homes and in the community with maximum independence.

As in Israel, the proportion of those benefiting from various services has grown rapidly. Since its initiation in 2000, and until the end of 2008 and thereafter, the number of those benefiting from the program has grown threefold (Simizutani & Inakura, 2007). There is a comprehensive description of the programs in Japan later in this issue.

Sweden

The government in Sweden has adopted the “Aging in Place” policy. Since 1994, the responsibility for the care of the elderly has fallen to the local authorities, which serve mainly as a coordinating and overseeing body, while the services themselves are provided by commercial and non-profit organizations. With the aim of implementing the “Aging in Place” policy, a special program was developed for adapting the elderly housing (Ministry of Health & Social Affairs, 1992) (Cecilia, Ulla & Stefan, 2009).

Denmark

In 1998, a change in policy occurred in Denmark, when a decision was made to stop building old-age institutions, and instead build residential units for the elderly. In Denmark, 5.5% of the elderly live in institutional frameworks. The new legislation decreed that the apartments for the elderly should be up to 67 square meters in size, without steps, with suitable accessibility and the possibility of receiving round-the-clock services. Research studies found that there was a high level of satisfaction with these conditions on the part of the elderly. The main reason for this is that health and welfare services are available to them in the community, 24 hours a day (Matsuoka, 2007).

Spain

Satisfaction with living in the community was also examined in Spain (Madrid). Over 95% of the elderly in Madrid live in their communities, in their own homes or in their children’s homes. According to the research conducted on 65-to-84-year-olds in Madrid, a high level of satisfaction was found from the very fact that they could continue to live at home, as opposed to moving to an institutional framework. The factors which particularly influenced this trend were the residential environment of the occupants, the housing itself (size of the apartment, ventilation, noise, lighting and so forth), and aspects connected with the physical details of the apartment (Perez, Fernandez, Rivera et al., 2001).

United Kingdom (Darlington)

The program related to elderly people who had been released from hospital to a community in which they were provided with community services including a care manager and an interdisciplinary team. The care manager had a budget for two-thirds of the cost of an institution, and made sure to provide each person with the services he/she required for his/her condition. The result was that the institutional expenditure decreased, the elderly enjoyed an improved quality of life, people remained living at home for longer periods, and there was general satisfaction.

Italy (Rovereto and Vittorio Veneto demonstration)

These two programs were based on a broad and comprehensive provision of services, given based on geriatric evaluation performed by an inter-disciplinary team and care manager. The results of this experiment were extremely positive: the rate of institutionalization declined, and institutional expenditure was reduced by 29%. Correspondingly, there was a marked improvement in the health of the elderly in the community.

In conclusion, the above examples indicate that there is widespread development and research activity in the field of aging in place in almost every country in the world - both on the national level and that of individual organizations and the community. Their activities are geared to ensure a system of supportive and available services in the community, housing adaptation and the development of technological systems. The combination of these three elements gives the elderly an opportunity to continue living at home with advancing age, while ensuring a comfortable quality of life in accordance with their desires and that of their families, on the one hand, and the aim of the policymakers on the other. From the general survey, it emerges that in recent years, a large number of experimental models have been developed, which have successfully answered the trend of aging in place. Apparently, one of the central problems is how to translate the positive sample experimental programs into national policy. It seems that in quite a few cases, the experimental programs were successfully translated into policy and effective national programs. (Johri, Beland, Bergman et al., 2003).

Aging in Place in Israel

The “Aging in Place” policy has also been adopted in Israel. The first signs of this policy can be found in a report from an inter-ministerial committee, which submitted its recommendations to the Minister of Welfare in 1967. The main recommendations were to develop community services for the elderly, and to see institutional care as a last resort and a complementary solution only to the community services. (Golander and Brick, 2003). In spite of the report and its recommendations, neither a national master plan nor a declared formal government policy emerged. During the past three decades, many services and action programs have been developed, whose main purpose is to enable the elderly to continue living in their own homes. At the same time, it is important to note that in Israel, as in most countries in the world, the main burden of caring for the elderly still falls to the family, relatives and friends.

The following is a review of the programs and services developed in Israel in recent years for the elderly at home and in the community, and an examination of the impact of their development on the “Aging in Place” trend.

The Long Term Care Law

The first national program, in which the Israeli Government gave formal expression to a policy of aging in place, was within the framework of the Nursing Care Law. The Long Term Care Law is part of the general National Insurance Law, and was implemented in April 1988.

The benefits for those eligible were given as services in kind and not in cash. Receiving the services outlined within the law is conditional on an income test, which is based on the elderly person's income and that of the spouse. The basket of services would also include visits to the day-care center, purchase of disposable absorbent products, laundry services and distress call buttons. Those eligible for the nursing care benefits are elderly people who are significantly handicapped in their everyday activities, as has been defined by the law: “An insured person who, as a result of disability, has become to a large degree dependent on the help of his fellow men to perform the bulk of his everyday actions, or who requires supervision... an insured person who, as a result of disability has become totally dependent on the help of his fellow men to carry out all of his every day actions, or is in need of permanent supervision..”

Caregivers employed by private firms or non-profit organizations provide home care. Initially, two levels of aid were established. However, since January 2007, three levels of aid are available according to the degree of disability of the eligible person – 9.75, 16.0 and 18.0 hours a week. (The National Insurance Institute, 2008). The number of recipients grew rapidly from 27,685 in 1990 to 143,000 in 2010.

Within the framework and outline of the law, funds have also been designated for the development of services and infrastructures in the field of aging.

The Long Term Care Law represents a significant breakthrough in the attitude of the State towards the elderly, and it gives both formal and practical expression to the Israeli government's commitment to this population. This benefit is given to the elderly by right, and is not considered charity. All those who meet the conditions of eligibility receive the services outlined within the law; the services are intended as support for the family caring for the senior person (and not to replace it). The subsequent result is that the law enables the elderly to continue to live in their own homes for as long as possible (Katan and Lewenstein, 1999; Shtassman, 2001).

Day-Care Centers

The day-care center for the elderly is a community service designed mainly for disabled elderly living in the community. It is a service which is provided on a group basis, and it offers a wide range of services and activities. The basket of services provided in the day-care centers includes breakfast and lunch, social activities, occupational therapy, physical activities, physiotherapy and personal care. The activities provided relate to the disabilities of the elderly, which gives them the opportunity for social and communal interaction. Furthermore, the activities at the center give the elderly opportunities to cope with their disabilities and their personal and social needs (Korazim, 1997). Most centers have a special wing devoted to those suffering from dementia, but there are also a number of day-care centers designed exclusively for the mentally frail.

The day-care center operates 5-6 days a week, and at least 6 hours each day. About 10% of the day-care centers have an activity, which runs until 7 p.m. Almost all the elderly attending day-care centers arrive from their homes in the morning by organized transportation, and

are returned home in the afternoon. On average, the day-care centers cater to about 90 participants, while the average daily attendance is 51 people. On average, each client attends the center 2.9 days a week (Resnizky, Be'er, Nir and others, not yet published).

The first day-care centers were established in the beginning of the 1980s. The accelerated development of the day-care centers occurred mainly in the 1990s. 14 centers had been established by 1984, it had gone up to 53 in 1990 and by the year 2009 there were 172 day centers with 15,000 visitors (2.2% of the elderly population).

Funding for the operation of the day-care center comes from two sources: the National Insurance Institute - for a person entitled under the Long Term Care Law; and the Ministry of Welfare and the local authority - for frail elderly who are not eligible for nursing care benefits. The elderly and their families participate in the cost of for service up to about \$4.00 per day.

The attendance of the disabled elderly at a center plays an important role supporting the elderly person's families. It alleviates the burden of care of the disabled elderly in the community, helps achieve the aim of aging in place, and obviates or delays institutionalization. (Resnizky, Be'er, Nir and others, not yet published).

Ministry of Welfare and the Municipal Social Services Departments

The direct care of the elderly on the local level is undertaken by the departments of social services in the municipalities, under the direction of the Service for the Aged in the Ministry of Welfare and Social Services. The Ministry sets the policy, the principles of care and how to provide the services for the elderly. The Ministry participates in the funding and supervises the implementation of their provisions by the workers of the social services departments. The main part of the work is carried out by social workers – about 700 throughout Israel - for the care of the elderly. In most departments of social services in the local authorities, there are special units dealing with care for the elderly.

In 2008, 242,850 elderly were looked after by the social services departments, constituting about a third of the general elderly population. Two-thirds of the total of the elderly cared for are over the age of 75, most of them from a low socioeconomic strata. 57% of them live alone, and 44% of them are widows or widowers.

The official policy of the Ministry of Welfare and Social Services is to leave the elderly at home and prevent the transfer to an institutional framework. Consequently, most of the services provided by the social services departments in the municipalities, under the guidance of the Ministry of Welfare, are services at home and in the community. The services include the assistance of the social workers for counseling, care, support and individual or group guidance; help in running the household, help with personal care for those who are not eligible under the Nursing Care Insurance Law; subsidizing the low-income elderly in the supportive communities; help in operating social and occupational clubs; transportation for medical treatment; assistance in providing home equipment; special additional services, such as programs for Holocaust survivors, help with dental treatment, etc. In addition, the Service for the Aged helps to place frail elderly in institutions. Table 3 shows the various kinds of services available and the number of elderly benefiting from them.

In 2010, the budget of the Service for the Aged amounted to 392 million NIS, of which 159 million NIS was earmarked for services in the community (40.6%). This budget also includes the share of the local authority, which generally totals 25% of the overall budget.

TABLE 1. Budget of the Service for the Aged in the Ministry of Welfare and Social Services (2003 to 2010)

Year	Total Budget	Community Services	Percent of Community Budget out of Total Budget
2005	393,397	122,123	31.0
2008	398,559	131,273	32.9
2010	392,102	159,216	40.6

SOURCE: MINISTRY OF WELFARE AND SOCIAL SERVICES

As reflected in Table 1, the allocations of the Ministry of Social Affairs in the recent years consistent with the policy of Aging in Place. The budget for community services has increased every year since 2006 and constituted 40.6% of the total budget of the ministry to its Services for the Elderly Unit in 2010.

Foreign Caregivers

One of the unique solutions developed in Israel, to fulfill the desire of the elderly to continue living at home, even

when their health and functioning decline, is the service provided by foreign workers. This phenomenon also exists in other countries, but in Israel, it has assumed a particularly large dimension and constitutes an important part of system of support services required in order to enable aging in place. These caregivers generally live with the elderly person and assist in the day-to-day household chores, provide personal home care and 24 hours-a-day supervision, thereby also relieving the sense of loneliness which a large part of the elderly experience. The widespread use of foreign workers living at home with the elderly relieves the primary caregivers from having to deal with the elderly disabled (Iecovich, 2010). This service is far cheaper than the home services provided by local caregivers. The senior and his family employ the foreign workers. Part of the payment for this is provided for within the framework of the Long-Term Care Insurance Law. Most of the foreign caregivers are from the Philippines, but there are also workers who come from other countries, such as Eastern Europe, Sri Lanka, India, etc.

The foreign workers began arriving in Israel at the end of the 1980s. The consumer public welcomed the service, and the number of foreign caregivers grew at a rapid pace. In 2008 there were approximately 54,000 foreign caregivers in Israel (Nathan, 2008), and this number is expected to increase in the future.

It is important to stress that this procedure of employing foreign workers as caregivers for the elderly has developed naturally, without any planned government intervention. There is no doubt that these arrangements have had an additional impact on the overall system of supportive services that enable the elderly with disabilities to continue living in their homes. It may be assumed that, in many cases, these arrangements also delay institutionalization.

Supportive Communities

The Supportive Community is an additional program that enables the elderly to continue living in their homes. The program provides the elderly with a basket of services that meet the basic requirements of whoever wishes to continue living in his/her home despite aging. The basket of services includes four basic components:

- **Community Mother/Father:** A salaried professional worker who is permanently located in the community's geographical area, is in contact with its members,

and provides them with services that enable them to lead their everyday lives normatively, such as helping with minor repairs in the home, bringing medicines when necessary, or summoning skilled workers.

- **Emergency Call System:** A system installed in the senior's home enables him to communicate with the call center when necessary. The call center operator can contact the "Magen David Adom" (Israel Red Cross) ambulance service, police, community Father or a family member, depending on the problem and the specific need.
- **Medical Services:** In special cases, doctors will make home visits to the senior following a distress call. The visit takes place almost immediately and carries a minimum fee. In addition, an ambulance can be summoned when necessary. The cost of the ambulance is included in the program's budget, in the event that Kupat Cholim (the medical care system) does not cover it.
- **Social activities:** The program enables social activities for all members of the supportive community, generally within the framework of a neighborhood club. These activities include discussions, lectures, outings, festival parties, etc.

A group of residents together with JDC-Eshel developed the first Supportive Community in 1989 in the Kiryat Moshe neighborhood in Jerusalem. Since then, supportive communities have been established at an accelerating rate throughout Israel, and in 2010 they numbered 250 and were serving an elderly population of about 50,000.

The program is based on an economical model, which in turn is based on monthly payments by the members of the program (about 30 USD per month), while those living solely on social security are subsidized by the Ministry of Social Welfare. JDC-Eshel subsidizes the program during the first three years until it reaches 200 households.

Over the years, three research evaluation studies of the program were conducted in order to examine its effectiveness.

The first study was published in 1999 and found that most of the members had joined the program because it gave them self-confidence (78%) (Mizrahi and Himmelblau, 1999). The second study was published in 2003, and its findings testified to a high level of

satisfaction. About 80% of those questioned attested to the fact that they were "happy" or "very happy" with the program. More than a third of the members of the Supportive Community felt that the program gave them confidence, and a quarter of them explicitly declared that thanks to the program they were able to continue living in their homes (Berg-Werman, 2003). The third evaluation study, which was conducted by the Meyers-JDC-Brookdale Institute, was published in 2010. Here, too, a high level of satisfaction was noted, and the significant help given to the elderly in the framework of the program was reported.

Non-profit Organizations

Local Associations for the Elderly

In Israel, there are 124 such organizations, engaged in developing and operating services for the elderly in the community. These organizations were established, for the most part, at the initiative of Eshel, the Association for Planning and Developing Services for the Elderly in Israel (Brick and Clarfield, 2007).

These organizations were established in the 1970s and mostly during the 1980s. They operate a wide range of services, including day-care centers, supportive communities, home care, health promotion programs, etc. Over 50% of the organizations' budget comes from government sources. An additional part comes from JDC-Eshel for developing new services, and the rest from revenues and donations.

Yad Sarah:

At the heart of Yad Sarah's activity is the loaning of medical, rehabilitative and technological equipment, which assist the handicapped and the elderly. In addition, Yad Sarah operates a range of services that help the elderly to age in their homes, such as distress call buttons, occupational therapy for the housebound, transportation for the disabled, etc. The main strength of the organization lies in recruiting and activating volunteers in the community. More than 6000 volunteers engage in loaning equipment, home visits to the housebound elderly, and other services.

Matav:

Matav is the largest organization, which provides home care for the elderly and disabled in their homes. Their

main activity was to provide home care services. Over the years, Matav has expanded its range of activities, and today it operates 12 day-care centers for the elderly, sheltered housing, a number of supportive communities, custodianship services, etc. Matav provides services to about 25,000 needy persons in the community.

Ezer Mitzion:

This non-profit organization was established in 1979 with the aim of providing food for the needy. Over the years, the services rendered by the organization have expanded and now concentrate on providing paramedical support services for the sick and the handicapped - mainly for the elderly. Today, Ezer Mitzion has about 11,000 volunteers. The organization operates a number of programs that contribute to aging in place, such as loaning of medical rehabilitation equipment, 20 ambulances that take the disabled elderly for medical treatment.

Aside from the large national organizations, there are also a number of smaller active organizations which target specific populations. Among them, *Melabev* in Jerusalem, a noteworthy organization, operates clubs and day-care centers for the mentally frail; *Misgav Lakashish*, which also operates in Jerusalem, provides support services for the elderly in the ultra-Orthodox community; the *Emda* organization operates support groups and provides various services to the mentally frail; *Milbat* engages in adapting aid accessories for the handicapped, and *Yad Riva* provides legal aid. In addition to these, many other organizations are also active.

This comprehensive review of the activities of the public organizations, which provide supportive services to the elderly at home and in the community, indicates an extensive additional contribution to the public and government effort aimed at maintaining the "Aging in Place" trend.

Community Health Services

With increasing age, there is a rise in illnesses - mainly chronic illnesses, such as high blood pressure, heart attacks, diabetes, Alzheimer's, Parkinson's, strokes and malignant illnesses. As a result, there is an increasing need for health services. Health services play an important role in achieving the goal of aging in place. This is true for primary medicine, and perhaps even more so for

the health promotion and illness prevention programs (Mashav, 2009).

Health services for the elderly in the community are provided within the framework of the Sick Funds community primary medical care clinics, in professional medical clinics, in rehabilitation centers, and in home care and day hospitalization units. The General Sick Fund initially developed home care units as early as the 1970s. Since then, this service has gradually been extended to all the Sick Funds and in different parts of Israel. Substantial differences exist in the extent and intensiveness of this service among the Sick Funds as well as in the various regions of Israel. The underlying premise of the home hospitalization service is that the housebound patient may be provided with essential medical services as an alternative to hospitalization. This service includes visits by qualified doctors, physiotherapy, occupational therapy and nursing services. Among the treatments given to the housebound patient, are blood pressure tests, treating bedsores, inserting/removing catheters, giving antibiotics and chemotherapy, and stabilizing symptoms (pain, anxiety, shortness of breath, constipation and vomiting).

In recent years, health promotion programs have been developed, mainly in the sphere of physical activity and correct nutrition. In addition, eyesight and hearing screenings are held as well as actions to prevent and treat incontinence. Other educational programs exist which enhance a healthy lifestyle. According to a health survey conducted by the Central Bureau of Statistics and the Ministry of Health in the years 2003-2004, 41.3% of those aged 65 and above engage in physical activity (at least three times a week, for a minimum of 20 minutes). In general, it can be said that there has been a growing awareness regarding healthy lifestyle, the importance of physical activity and wise nutrition. All of these directly affect the ability of the elderly to continue living in the community.

The Impact of the Development of Services in the Community on Aging in Place

The past two decades have witnessed an accelerated development of the supportive services in the community. Whereas the number of elderly in this period increased 1.6-fold, the various supportive services in the community during the same period have grown many

TABLE 2. Development of the Services in the Community in the Years 1990 to 2008

Service	Programs				Participants			
	1990	2008	% of Change	Rate of Growth	1990	2008	% of Change	Rate of Growth
Day-care Centers	53	172	224	3.2	3,875	15,500	299	3.9
Benefits					27,684	131,266	374	4.7
Supportive Communities	4	223	547	55.7	210	42,369	2,007	201.8
Clubs	84	900	971	10.7		101,000		
Sheltered Housing	70	165	135	2.4	6,170	21,315	245	3.5
Institutions	192	403	109	2.1	19,041	30,233	59	1.6
Elderly Population					442,200	708,000	60	1.6

times over. As we have mentioned, a basic condition for aging in place is the existence of community supportive services that provide help and support to whomever desires to continue living at home. The accelerated development of the various services in the community constitutes a significant factor in the overall support for the “Aging in Place” trend.

From Table 2 we can learn about the development of the community services between the years 1990 to 2008. In that period the number of those benefiting from day-care centers grew approximately fourfold, whereas the number of elderly at that time rose only 1.6-fold. In addition, those benefiting from home care in the framework of the Long-Term Care Law increased 4.7-fold during the same period. The growth of supportive communities is much greater and forms part of the overall picture of accelerated development on the scale of the community services and their number of beneficiaries.

We should contrast the development of the services for the elderly in the community with the proportion of the elderly in institutions. It emerges that during this entire period, the proportion of elderly in institutions did not increase despite the significant growth in the absolute number of elderly during the same period. Hence, it may be assumed, that the extensive development of the services in the community had a significant impact on the rates of institutionalization, that is – more old people continued to grow old in the community.

From Table 3 we can see that the rates of institutionalization have remained almost stable, around 40 beds per one thousands elderly, despite the 1.6-fold rise in the elderly population.

TABLE 3. The Rate of Beds per Thousand in Given Years

Year	Institutions	Beds	Rate per Thousand
1981	117	12,507	37
1990	192	19,041	43
2009	392	29,281	39

SOURCE: MASHAV, 2009

In conclusion, against the background of the accelerated and wide-ranging development of services for the elderly in the community on the one hand, the proportion of the elderly in institutions remained stable. On the other hand, it may be assumed that the development of services in the community has had an impact on the level of institutionalization, and that, equally, this has had a positive effect on the “Aging in Place” trend.

Future Challenges

Together with the accelerated development of the community services and the success of aging in place in Israel, there remain important challenges. Coping with them might help to increase the number of elderly who will be able to continue living at home.

Integration and coordinating the services: There is a great fragmentation among the various community services; each of the health and welfare services is provided in a different location, according to different conditions of eligibility, and operated by a separate organizational system. Incorporating, or at least intensifying the coordination between the various services, would significantly reduce the need of the elderly and their families to run around among the various agencies. Thus, it would also save large numbers of resources for the government,

the local authorities and the rest of the organizations engaged in providing services to the elderly in the community (Shtessman, Maaravi and Cohen, 2000).

Adjust housing conditions to growing needs: Although there have been a number of limited attempts in this area, a need exists to develop a comprehensive program, geared to adapting the residential apartments of the elderly to the special needs which accompany the aging process, and the development of illness and decline in everyday functioning. This includes modifying the structure of the shower and toilets, installing handles and ramps, automatic opening of doors, etc.

Modern Technology: Modern technology is advancing at a rapid pace and affects the improved life quality of human beings as a whole. The advances in technology should be used for the benefit of the elderly and aging in place. The care and medical supervision of the housebound elderly can be upgraded by remote-controlled electronic systems (Tele-medicine); sensors can be installed in the homes of the elderly, which will report their physical state and everyday functioning, as well as give a warning about irregular and potentially dangerous symptoms. The new electronic systems can also help the elderly to develop social contacts to help them cope with loneliness and feelings of isolation from society and the community.

Day rehabilitation: Elderly people who have suffered a stroke, had an orthopedic injury, or other illnesses, are entitled through the Insurance Health Law to health services for a proper rehabilitation process. The possibility of receiving rehabilitative help in the communities, and still remaining at home, depends on the availability of rehabilitation centers geared to this purpose. In reality, there are only a limited number of such centers. It is necessary to develop a national system of daily rehabilitation centers, which will meet the current needs.

Loneliness: As was mentioned above, even though continued living at home may meet the elderly's desire to maintain a connection with his close and familiar environment, this still does not ensure that such an arrangement will provide a complete solution to the problem of loneliness. Seniors can be happy about continuing to reside in their homes, but are also liable to suffer from a sense of loneliness. This phenomenon must be dealt with in all to do with the continued residence in the home and the community.

Conclusion

In this paper, we have given a broad description of the development of the health and welfare services for the elderly at home and in the community. As has been pointed out, this development has occurred at a very rapid pace, mainly in the past 20 years. This overview of the situation clearly proves that the State of Israel has adopted the policy of "Aging in Place".

Concerning the question of whether this major effort has in fact led to the realization of the goal of aging in place, it may be said with relative certainty that the goal has, largely, been achieved. The comprehensive and varied development of health and welfare services in the community, as opposed to the fact that the rates of nursing care hospitalization in Israel are so low, indicates that the goal of aging in place has largely been achieved. This assessment is not meant to replace a thorough research study that will scientifically establish the connection between the broad and accelerated development of the services in the community, and the fact that such a large number of elderly are aging in the community.

The policy of "Aging in Place" is based on two basic premises. The first - that it contributes to the improved quality of life of the elderly; and the second - that continued living at home is less expensive than hospitalization. These premises require a more exhaustive and thorough investigation in the Israeli reality. Moreover, it is important to bear in mind that, despite the accelerated development of the supportive services in the community, the policymakers and those responsible for developing services for the elderly still must confront and deal with important challenges, and that this is likely to intensify and reinforce the "Aging in Place" trend.

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REFERENCES

- AARP, (2010). *Home and community preferences of the 45+ population*, Washington, D.C.
- AARP, (2000). *Fixing to stay: A national survey on housing and home modification issues*, Washington, D.C.
- AOA – Administration on Aging (2009). *Community Innovations for Aging in Place*. http://www.aoa.gov/AoA_Programs/HCLTC/CIAIP/index.aspx#Purpose. 20/5/10.
- Beland, F., Bergman, H., Lebel, P., Clarfield, M., Tousignant, P., Contandriopoulos, A., and Dallaire, L., (2006). A system of integrated care for old persons with disabilities in Canada: Results from a randomized controlled trial, *Journal of Gerontology*, 61, 4, 367-373.
- Berg-Warman, A., Brodsky, G. and Gazit, Z. (2010). *The Supportive Community Evaluation Study 2010*. Jerusalem: Meyer-JDC-Brookdale Institute. (Hebrew)
- Black, K. (2008). Health and Aging in Place: Implications for Community Practice. *Journal of Community Practice*. 16(1): 79-95.
- Brick, Y. & Clarfield, M. (2007). JDC-Eshel, A Unique Non-Governmental Organization Dedicated to the Elderly in Israel. *Archive of Gerontology and Geriatrics*, 44: 225-234.
- Brick, Y., and Greenstein, M. (2010). The Non-Profit Organizations for the Elderly in Israel. Characteristics, Recruiting Donations and Volunteers, *Gerontology* (As yet unpublished).
- Cecilia, H., Ulla, A. & Stefan, O. (2009). Senior Housing in Sweden: A New Concept for Aging in Place. *Social Work in Public Health*. 24: 235-254.
- Clarity (2007). *Attitudes of Seniors and Baby Boomers on Aging in Place*. <http://www.clarityproducts.com/research/Clarity-Agingin-Place-2007.pdf>. Retrieved May 2010.
- Fogel, B.S. (1993). Psychological Aspects of Staying at Home. In: J.J. Callahan. (Ed.). *Aging in Place*. New York: Baywood.
- Golander, H., and Brick, Y. (2003). The Development of the Services for the Elderly in Israel – Historical Perspective, in: Rozin, R. (Ed.). *Aging and Old Age in Israel*. Jerusalem: Eshel, JDC-Israel. (Hebrew).
- Herbert, R., Durant, P., Dubac, N. & Toungry, A. (2003). PRISMA: A New Model of Integrated Service Delivery for Frail Older People in Canada. *International Journal of Integrated Care*. (www.document) URL <http://www.ijic.org/>.
- Hunt, M.E. (1990). Naturally Occurring Retirement Communities: A Multi-attribute Examination of Desirability Factors. *The Gerontologist* 30(5): 667-673.
- Hunt, M.E. (2001). Setting Conducive to the Provision of Long-Term Care. *Journal of Architectural and Planning Research* 18(3): 223-233.
- Hunt, M.E. (1985). Naturally Occurring Retirement Communities. *Journal of Housing for the Elderly*, 3(3/4): 2, 22.
- Iacovich, A. (2010). The Main Caregivers and the Foreign Caregivers for the Elderly: Factors which Explain the Burden and Satisfaction of the Main Caregiver, and the Satisfaction of the Foreign Caregiver with his Work. *Research report*. Beersheba: Ben-Gurion University of the Negev. (Hebrew)
- Jouri, M., Beland, F. & Bergman, H., (2003). International Experiments in Integrated Care for the Elderly: A Synthesis of the Evidence. *International Journal of Geriatric Psychiatry*, 18: 222-35.
- Katan, Y., and Lewenstein, A. (1999). *A Decade of Implementation of the Nursing Care Insurance Law: Significance and Implications*. Jerusalem: The Center for Research of Social Policy in Israel.
- Kodner, D. (2006). Whole-System Approaches to Health Care Partnerships for the Frail Elderly: An Exploration of North American Models and Lessons. *Health and Social Care in the Community*, 14(5): 384-390.
- Korazim, M. (1999). *Day-Care Center - Instructions for Administration and Operation*. Jerusalem: Eshel-JDC Israel. (Hebrew)
- Mashab – National Database for Planning in the Area of Old Age (2009). *Old People in Israel-Statistical Yearbook*. Jerusalem: Meyer-JDC-Brookdale Institute.
- Matsuoka, Y. (2007). *For Successful Aging in Place in Elderly Housing: Factors Influencing subjective Well-being of Elderly Housing Residents of Denmark*. ENHR International Conference 25-28 June, 2007, Rotterdam.
- Ministry of Health and Social Affairs (1992). *The Home Modification Legislation*, Stockholm.
- Mizrachi, A., and Hillmelblau, Y. (1999). *Supportive Community – Research and Evaluation*. Jerusalem: Meyer-JDC-Brookdale Institute.
- Natan, G. (2008). *Examining the Reform in the Employment of Foreign Care Workers*. Jerusalem: The Knesset - Research and Information Center. (Hebrew)
- Perez, F.R., Fernandez, G.F.M., Rivera, E.P. & Abuin, J.M.R. (2001). Aging in Place: Predictors of the Residential Satisfaction of Elderly. *Social Indicators Research*, 54 (2): 173-208.
- Rasnitzky, S., Beer, S., Nir, S., Korazim, M., and Brodtzky, J. *The Day-Care Centers for the Elderly 2008-2009 - Evaluation Research* (Not yet published). Meyer-JDC-Brookdale Institute.
- Shtassman, Y. (2001). *The Nursing Insurance Law after 12 Years - Problems and their Solution*. Social Security, 60; 8-30.
- Shtassman, Y., Maaravi, Y., and Cohen, A. (2000). *Reform in the Health Services for the Elderly*. Gerontology, 27 (1) 69-80.

Simizutani, S. & Inakura, N. (2007). Japan's Public Long-Term Care Insurance: Evidence from Municipally –Level Data, *Government Auditing Review*, 14: 27-40.
The Central Bureau of Statistics and the Ministry of Health. (2003-2004). National Health Survey. Jerusalem: the Central Bureau of Statistics.
The Ministry of Welfare and Social Services (2010). *Survey of the Social Services*. Jerusalem: Ministry of Welfare and Social Services.
The National Insurance Institute, (2009). *Annual Survey – 2008*. Jerusalem: The National Insurance Institute – Research administration.

Ageing in Place in the European Union

Much has already been written and many conferences¹ held in recent years on the theme of this paper, which encompasses various linked terms and concepts – whether these be Ageing in Place, Age-Friendly Cities or Design for All. The start of a public discussion of this issue can be identified in 1994 when the Organization for Economic Co-operation and Development (OECD) ministers stated that older people should be able to continue living in their own residence and where this was no longer possible, in a “sheltered and supportive environment which is as close to their community as possible, in both the social and geographical sense.” (OECD, 1994, p.37)

All governments in Europe are concerned with the ever more relevant issue of how best to ensure the active participation and non exclusion of the growing numbers of older people in our modern societies, with particular emphasis on helping those who are frail or with mobility problems. Ageing in Place in the EU context tends to focus on the provision of support and services to older persons to enable them to remain in their own homes for as long as they can, and in environments that are enabling. Despite various strong statements by planners and policymakers, by some governments and NGOs, there remain questions about what is actually encompassed in the debate about and actions to support Ageing in Place, given the considerable differences in national, local and individual situations. Although this article supports as far as possible the notion of Ageing in Place, it also takes as its brief the need to examine carefully some of the barriers or difficulties in developing and prioritizing public policy to promote Ageing in Place and age-friendly environments in the European Union.

The European Union, made up of 27 Member States with a very large number of Regions and Local Authorities, does not have a common strategy for confronting demographic ageing, with all the social and economic repercussions this may have. Concern with economic growth, innovation and employment has been the main focus of attention of EU Policy in recent years. Though all European Member States have welfare states to different degrees, the European Union itself does not have political responsibility for pension policy, nor for the development of common social welfare policies for the dependent and frail who need support and services. The planning, funding and

management of health and social services remains the political and financial responsibility of national and local governments. Large differences affecting older people's ability to age in their communities exist in the European Union with respect to their housing, income levels, place of residence, the availability of care and support services, the physical environment and, above all, their health and physical capacities. The nation state in which they live also impinges on the feasibility of ageing in their community arising from significant historical, cultural and physical variations. Scandinavian countries with their high investment in urban planning and good social and health care provision, are radically different from the Southern Mediterranean countries with their continued reliance on family networks for the social inclusion and care of the frail elderly, or the ex Communist countries, also reliant on families but with older investment in welfare structures such as residential care for the frail. The many historic cities vary in the ease with which they can adapt their buildings economically and aesthetically to the demands of their ageing populations.

Yet the growth in the sheer numbers of frail elderly with the associated needs for their long-term care and support is leading EU policymakers and politicians to investigate the degree to which the EU countries can learn and innovate together to confront these new challenges. Measures stimulating technical innovation e.g. funding, networking, and practical policy interventions e.g. education, training and the exchange of good practice, are meant to help support local and national governments. EU institutions such as the Committee of the Regions, also have a substantial role to play in encouraging an understanding by Local Authorities of the kinds of policies and practices that will need to be put in place over the coming decades as European populations age.

The promotion of the rights of older people in their own communities is also problematic under EU legislation: the Charter of Fundamental Rights deals with EU level violations of rights under EU legislation, rather than the more common form of violation of individual rights occurring at the national level.² Issues affecting older people with respect to dignity, discrimination or accessibility in their communities, cannot easily be brought to the EU Court of Justice. Nonetheless, the European Charter is clear that Member States must

recognize and respect the rights of older people, including the frail and disabled elderly, to lead a life of dignity and independence and to participate in social and cultural life to their maximum potential. The European Union, though unable directly to affect national policy and practice, are able indirectly to instigate actions to raise awareness of demographic ageing, the current barriers to older people's full social participation and the methods that can be used to empower all elderly people. Thus the European Commission has designated 2012 as the European Year for Active Ageing. They have also launched a pilot European Partnership on Active and Healthy Ageing in 2010 with a large group of stakeholders from local and regional governments, industry and NGOs, and this will almost certainly confront the issues of accessibility and support older dependent people to remain in their own communities as a way of promoting healthy ageing.

One of the more important ways in which the EU, through its institutions,³ helps in policies that can aid older people, is in the promotion of standards of accessibility in housing, transport, the built environment and public facilities. Sometimes these can only be promoted indirectly, for example by EU regulations that defend competitiveness and equal rights. The European Commission has been promoting the issue of accessibility in cities since 2003.⁴ Most countries, world wide, were slow to consider either ageing or disability in town planning regulations despite the fact that demographic ageing is hardly a new phenomenon especially in the EU countries; yet only a few EU countries have been proactive. I received an awareness-raising lesson when visiting central Copenhagen 18 years ago as I observed many wheelchair-bound people around us and asked a friend if anything extraordinary had happened and why there were so many disabled! I was only familiar with London and Athens where accessibility was very hard for those with physical disabilities.

Often it has been the disability movements and their organizations that have been in the forefront of enforcing the practical adoption of some public accessibility standards; this was bolstered by the agreement in the EU and the 27 Member States to sign the UN Convention on the Rights of Persons with Disabilities that came into force in 2008.

In contrast, despite mention of the promotion and protection of all human rights and fundamental

freedoms, including the creation of an inclusive society for all ages in the Madrid International Plan of Action on Ageing (MIPAA) 2002, only a few governments implemented policies to promote accessibility for older people. Some of the national governments in the EU upheld and implemented the inclusion of older persons in policy decision making, which had been a stated goal in the MIPAA, but many did little practically to ensure that such actions were ‘normalized’, funded and institutionalized into planning and policymaking.

Accessibility became an issue also for some national NGOs and federations concerned with ageing, some of whom built alliances with their disability movements. At the EU level AGE Platform Europe, an EU supported NGO platform or network of over 150 national, regional and European organizations of and for older people, and with 30 million members in 2011, increasingly pushed forward the interests and needs of older people to be consulted in the design of public policy and specifically accessibility. It has played an ever more active role in ensuring that EU programmes take into consideration the older population. In 2011, AGE Platform with the European Disability Forum signed a Joint Proposal to the European Commission on a European Passenger Forum for a better urban mobility, based on the work undertaken in the project Mediate that established an End user Platform, gathering representatives of users facing problems when using public transport.

Through EU funded programmes, there are efforts to promote solutions to living in homes adapted to the needs of frail elderly and those with disabilities, including innovations using new technologies; there are programmes to improve the urban environment ensuring that pavements, public transport and public services are ever more accessible and user-friendly for older people. NGOs at a national level may participate in government, regional and local attempts to involve users. At the EU level, AGE Platform Europe is often asked to participate in programmes on ergonomics and accessible domotic (home-based) solutions, transport, Ambient Assisted Living, and the environment. The Ambient Assistant Technologies programme is a large scale programme for innovation where the end users represented, for example, through the AGE Platform, are increasingly present. Another EU funded programme was Aeneas, which has been examining green mobility⁵. However these programmes have no effective way in

which the EU can insist that national or regional governments tend to focus on innovation and the adoption of standards and there is not sufficient implementation of measures. In EU funded infrastructure investments such as the Structural Funds, issues like accessibility are incorporated, but this does not influence the “normal” pattern of town or policy planning. The role of local actors in enforcing standards e.g. NGOs, sensitized practitioners and policymakers, still remains key.

As everyone may have noticed in this past year, EU policy has little effective muscle and proceeds cautiously as Member States remain anxious to retain sovereignty even over what one might imagine to be non contentious issues e.g. accessibility. So, persuasion, education, training and a stress on the human rights of older people to be included in all aspects of modern society, are only partial and mainly voluntary instruments to promote the desired outcome of ageing in place.

Thus, the role of an NGO European level organization like AGE Platform Europe is to influence and spearhead change amongst national and EU policymakers so the latter support and generate policies and practices that will enable older people to age in place. This requires examining strategies that promote friendly urban environments, housing and transport that are fully inclusive shared places for all. Ensuring that older people are included with the rest of the society is seen as a human right that does not treat older people as second class, passive citizens but engaged and active. While more specific difficulties e.g. in consultation, arise with respect to strategies for those who are frail and disabled, or have serious cognitive problems, once the rights perspective is generalized in society, methods can more easily be found to ensure the maximum participation. Manchester City began consultation work with its older citizens back in 2003, developing a 10-year strategy, ‘Manchester - A Great Place to Grow Older’ that included an annual celebration of ageing, ‘The Full of Life Festival’, awards to 200 community groups improved healthcare and housing services for older people, and a programme of 13 Intergenerational projects, called Generations Together.

Yet, questions remain about why ageing in place is somewhat problematic, despite the apparent popularity of the WHO-led actions, starting in 2006, to promote Age Friendly Cities in 33 Local Authorities in 22 countries. The cooperation resulted in *The Global Age-friendly Cities Guide* (<http://www.who.int/ageing/>

publications) which outlines a framework for assessing the “age-friendliness” of a city. A core aspect of this approach was to include older people as active participants in the process. In the past year more Local Authorities have joined and promised to make their cities friendlier and open to their older citizens. Nonetheless it is worth examining some which favour or act as barriers to ageing in place in the EU.

Social support: On the positive side, we can note that in contrast to the USA, Europeans do tend to remain within their regions; in the European Foundation’s 2006 study using Eurobarometer data⁶, only 18% were reported as having moved outside their region, while the percentage for cross-border migration was low, with only 4% ever moving to another Member State and fewer than 3% ever moving to another country outside the EU. This contrasts with the higher mobility rates found for short-distance moves: 32% of Europeans had moved within their own town or city, and almost a quarter (24%) had moved outside their town or city (remaining within the region). Mobility was related to educational levels with the more educated more likely to move. There are large differences between the Member States (MS) - the Southerners (poorer, less educated and with smaller welfare regimes) being far less willing to move far from family with its welfare support. What this suggests is that many Europeans continue to live near their older parents and relatives and are thus able to provide some hands-on emotional and practical support that enable people to age in the community; the wealthier who are more likely to be mobile are also those with the resources to pay for care support and services.

While this is positive from the perspective of ageing in place, other issues arise that are less clear. Within regions, older people often remain in rural communities while the younger generations have been moving to nearby towns and cities. Even in the large metropolitan cities, older people often remain in a quarter from which their children have moved away, making practical support harder to provide. There are growing numbers and proportions of older people without children for support, or with children - typically daughters - in full time paid employment, and this represents a striking demographic and social change that suggests the importance of looking beyond family and kinship to the very diverse ways in which older people do or can relate to their location through friends and social networks.

Housing: Older people identify their homes as particularly important, linking them to their families, neighbours and friends, to their personal history and spaces with which they are familiar. Retirement and decreasing mobility make homes even more important for older people. Thus, an important aspect of ageing in place reflects this desire to stay in a location with which they are familiar. EU survey data from the SHARE research (Kohli et al, 2008) shows that older people have, on average, lived for 27 years in their house or flat with the length of time being related to increasing age and inversely to income. This suggests that one factor in housing mobility may be poor resources and rental tenancies of houses which will limit or stop older people from moving.

The location of an older person’s home has also to be considered. Whether in public or private housing, it is sometimes the case that older people, particularly those in lower income brackets, have few viable solutions to living in more suitable or better communities. If they had the choice, would all of them wish to stay in the community as it is now? A positive element that emerges from the SHARE data (Kohli et al, 2008) is that more “younger” older people own their houses and home ownership has increased in most Member States. This gives future generations of older people both resources and security, and more choices about the houses as well as the communities in which they wish to retire and live in.

Overall, the standards of housing in the EU are high, judged in terms of indoor toilets, baths and adequate heating. With respect to adaptations made to houses, only a relatively small percentage have had any adaptations to deal with special needs, even amongst those over 80 years of age. (The highest rate was the Netherlands with 15%, with Poland, Italy and Greece having only 1-3% of houses with special features and adaptations.) Yet one cannot overlook the fact that many older houses are poorly designed for the less mobile elderly. Even new private homes, though sometimes excellently designed, all too often ignore the potential needs of the current or future inhabitants who may be frail with problems of mobility. It is difficult to make people plan for their own physical decline since few people wish to contemplate or plan for this. People in houses with which they are familiar are already adapted, to some extent, to their needs. There is also evidence that when circumstances

change radically e.g. serious health problems or the death of a marital partner⁷, in some of the MS it is at this point at which some older people decide to not age in place but to change their home – typically moving to be near or with their children and grandchildren.

The provision of separate public institutional care for the increasing numbers of relatively frail older people is no longer considered financially viable nor, on the whole, acceptable to older people in the EU who, in repeated surveys show their desire to remain in their own homes. The implication is that policies and practices will increasingly require the development of a variety of special programmes to serve the frail and dependent elderly in their homes and communities. The funding and organization of all forms of long-term care remains problematic for EU governments, though there are many current EU programmes and initiatives that are looking into the best ways of funding and organizing such care that allows people to stay in their homes⁸.

Special housing adapted to the frail e.g. sheltered housing, or other kinds of community-based residential care remain relatively scarce. The MS with more financial resources and better welfare states are those for whom such community living special housing solutions are more likely to be found.

Another issue, not discussed under ageing in the community, but of absolute relevance to whether the existing home is the best for the older person, is the degree to which the older housing stock is environmentally well adapted with lower energy needs. Some of the housing stock in which older people live is much older and needs expensive adaptations to make it more energy efficient, with the associated problem that many older people with low incomes cannot meet these costs. Thus, the goal of promoting the best quality housing for older people confronts several issues – from the fact that the housing stock in the EU is old and cannot easily be replaced, to the difficulty that space and flexibility requirements over the life course vary. Older people not only eventually find themselves living in older housing stock but often with more space than is required – yet the emotional and physical difficulties of moving to suitable accommodation, if available in the community, may be large. Greater and increasing longevity does mean that there will be more older people who are frail or disabled, increasingly confined to their homes. There is a clear need to promote adaptable

‘care-ready’ housing and solutions that intelligently allow multi-unit apartments and clustered living centres to develop shared facilities that are, preferably, open to the neighbourhood. Throughout the EU, a significant percentage of households are in apartment blocks where modern technologies ought to be more easily introduced to allow older people and people with disabilities to sustain a more autonomous life.

Neighbourhood: Local Authorities have responsibility for the neighbourhoods in which older people live, including shops, local amenities, and leisure and cultural places, and here actions to promote accessibility depends predominantly on changing mindsets. Thus, planners have to examine issues such as poor quality streets and pavements that are blocked or too high for wheelchairs, walking frames and pushchairs; poor public signing that gives confusing visual information; a lack of resting places for people out walking or shopping; poor lighting conditions that make people feel insecure and unsafe, particularly for those with disabilities, those who are frail or are experiencing age-related sensory or cognitive decline, and those who are functionally restricted – with prams, toddlers or mobility aids. In AGE Platform’s recent pamphlet on Accessibility (2010), the writers stress “While the inclusivity and accessibility of our public, commercial and historical buildings are important – shared urban places and the public spaces between them are also vital. Streets, roads, pavements, footways, cycle-paths, open spaces, recreational areas, parks, green spaces, street signs, bus-stops, taxi-ranks, metro and train stations – all form part of the urban fabric of a society and should be safe, convenient and enjoyable for everybody. The extent to which their use is shared in time and space by old and young alike, is a measure of inter-generational tolerance and trust that is a hallmark of friendly and inclusive places.

In our knowledge-based societies, the built environment increasingly includes electronic devices and equipment such as access pads, environmental controllers, automated vending machines, alarms, electronic time-table displays, public address systems, computer controlled traffic management and access authorization turnstiles. Information and communication technology displays and interactions are now part of the ambient background to the built environment. Technologies embedded in the fabric of our urban places and public buildings aid navigation and orientation but they must

also be guided by inclusive design principles if they are to be useful and easy to use by all.” They stress the necessity in our increasingly urban societies for more friendly and intergenerational “villages”.

The willingness of so many EU cities to join the Age Friendly Cities initiative suggests that there is a changing mindset amongst urban authorities – from Portugal to France, Poland, Slovenia and even Belgium, the heart of the EU – and they do increasingly see older citizens as sources of valid and relevant information suggesting which actions are necessary to ensure their inclusion. Striking are the number of EU cities that currently, as a result of consultations with their senior citizens, offer lessons on how to use public transport (Wroclaw), to walk easily and safely as pedestrians (Odense), or for exercise and sociability (Domnosta - San Sebastian).

Community services: While it may be possible to put services in place, it is not always easy for less mobile and poorer older people to access health services. Even the much wanted new technologies for e-health which are likely to play an increasing role in diagnosis and maintenance of those with health problems, ultimately have limitations when the older person needs personal care and social support. Focusing on health services may miss the point that loneliness and isolation often cause or exacerbate health problems.

One cannot overlook the fact that the costs of funding adequate health and support care services may be significant for national and local public budgets. Within the EU are many quite remote mountain and island villages where ultimately, a tiny handful of older people are left alive struggling to age decently with increasing health and mobility problems in their old community that is fast disappearing. Some of these new technologies may, for some time provide support, but ultimately, caring in disappearing communities may not be economically or even technically feasible.

Transport and mobility: EU policy does try to support the increasing use of public transport as opposed to private cars. Recent data⁹ shows that though older people (55+) do use cars less than younger age groups, the use of cars is still double the rate of public transport usage. Inadequate services, poor information services to support route planning, the cost of using public services and difficulties in ways of paying, non-linked-up services, poor facilities at points of change e.g. lavatories, and the sense of safety, are all issues reported as reasons

for public transport not currently being used. There have been many attempts to make public transport more physically accessible in terms of design, yet other factors have yet to be tackled systematically e.g. training of transport staff to be helpful and supportive to the frail and disabled. In a study for the European Commission in 2007 (Fiedler, 2007), the findings showed that many older people have unmet travel needs and wishes, and that a lack of suitable (public) transport prevented them from enjoying activities or meeting friends and relatives. Technical improvements are relatively easy, while the increasing use of new technologies may help in promoting what is termed ‘seamless travel’. Yet, other areas including fear of falling should not be underestimated. While this would not seem to be relevant to ageing in the community, the ability of older people to pop on to a bus easily and at a cheap price means that the network of social relations they have with friends and family can more easily be maintained despite some health problems in mobility.

The increasing numbers of older drivers of private cars cannot be ignored – this becomes a right that they need to be able to maintain requiring suitable adjustments to clarity of signing, parking and design, which helps everyone. There are other alternatives found in Europe that compensate for a loss of mobility and enable older people to get around - varying from affordable taxis, to car pooling, and volunteer networks - and these need to be publicized and linked where possible, to the public transport systems.

All too often, the data we have in the European Union is not adequate in terms of letting us understand the barriers for older people in living and ageing in their own communities. It is more often than not that there is a lack of information, no age disaggregated data i.e. data broken down by smaller age categories than just 65+, or insightful and compelling information that can be used at local and national levels to persuade politicians and policymakers of the needs of older people. Too often they have become invisible in the wider community and may be a marginalized group. As older people become ever more numerous, better off, more vocal and educated, their situation ought to improve both through their own organization and more active roles in the community as citizens. The implementation of policies to enable older people to age in place will require the commitment of local and national politicians, planners

and the civil servants who implement programmes and, above all, the active role of older people as stakeholders during the policy formulation stage.

As suggested, this is occurring in some of the EU, but may remain a low priority for some national governments and local authorities. Yet, making older people more able to contribute – in their own communities, as employees, workers, volunteers, carers and as civil society activists, can help reduce the costs of caring and the costs of marginalizing a very large percentage of our populations. No one imagines that one can avoid the need and costs of palliative i.e. end of life care, but changing the capacities of older people to remain active as long as possible may help, and this includes making their homes and communities places they can age in, well.

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NOTES

- ¹ A relevant example is that the IFA is co-hosted with the World Health Organization's Global Network of Age-friendly Cities, and the Ageing Well Network, Ireland - the 1st International Conference on Age-Friendly Cities in Dublin, in September 2011
- ² EC (2011) Report From The Commission To The European Parliament, The Council, The European Economic And Social Committee And The Committee Of The Regions "2010 Report on the Application of the EU Charter of Fundamental Rights" http://ec.europa.eu/justice/policies/rights/docs/sec_2011_396_en.pdf
- ³ European Parliament, European Commission, Committee of the Regions, European Court of Justice – as some of the main relevant ones.
- ⁴ <http://ec.europa.eu/social/main.jsp?catId=918&intPageId=1161&langId=en>
- ⁵ Information on these many programmes can be found on www.age-platform.eu
- ⁶ The data is noted as probably underestimating the numbers who are moving especially in some countries e.g. Poland. Increasing numbers of older people have also been retiring to other Member States, mainly in the Southern MS, and are underrepresented.
- ⁷ This is more common for widows.
- ⁸ One such programme, Interlinks, examines how best to promote the cooperation between all forms of social and health formal care service with informal care in the community.
- ⁹ European Commission 2011, Future of Transport. Flash Eurobarometer. March 2011. http://ec.europa.eu/public_opinion/flash/fl_312_en.pdf

REFERENCES

- AGE Platform Europe (2010) http://www.age-platform.eu/images/stories/AGE_Friendly_Environment_Final_PDF-EN.pdf
- European Foundation (2006) *Mobility in Europe: Analysis of the 2005 Eurobarometer survey on geographical and labour market mobility.*
- Fiedler, M. (2007) *Older People and Public Transport: Challenges and Chances of an Ageing Society.* http://www.emta.com/IMG/pdf/Final_Report_Older_People_protect.pdf
- Kohli, M., H. Künemund and C. Vogel. (2008). Staying or moving? Housing and residential mobility. In: A. Börsch-Supan et al.: *Health, Ageing and Retirement in Europe (2004-2007) - Starting the longitudinal dimension*, 108-113. Mannheim: MEA. See also http://www.shareproject.org/t3/share/uploads/tx_sharepublications/Kohli_Kuenemund_Vogel_2008_01.pdf
- OECD (1994) *New Orientations for Social Policy Social Policy Studies 12*, Paris: *Organisation for Economic Co-operation and Development.*

Ageing in Place Down Under

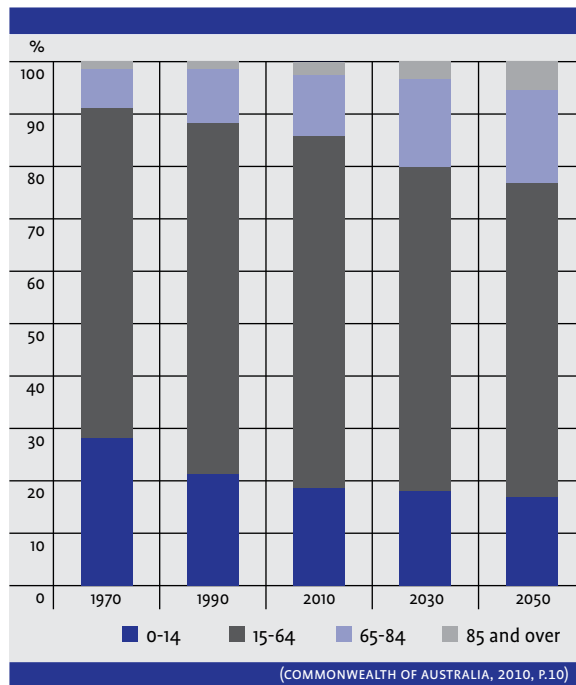
Ageing in place is now a major policy goal in **Australia** and many other westernized countries. It focuses on providing older people with the care support to enable them to age in a location that suits their needs, whether in their own homes or elsewhere. As the consequences of population ageing are increasingly understood, the need to promote ageing in place in the community has received greater policy attention. In a country as large and diverse as Australia, the opportunities for older people to make choices about ageing in place vary enormously. This paper explores the concept of Ageing in Place and how it is currently understood in Australia. It examines policy responses and community care approaches that facilitate ageing in place and identifies some of the challenges in responding to the needs of the diverse older population in Australia. The opportunities for future policy and program responses are considered, along with emerging examples of policy and practice innovation.

Population Ageing and the Need for New Policy and Practice

Like other westernized countries, Australia is undergoing population ageing as a result of decreased fertility rates, increased life expectancies, and migration patterns. These changes will impact where and how older Australians age into the future, and will require careful policy consideration. While these developments represent major societal advances, the impact of population ageing has largely been viewed by policymakers and the popular media as a looming crisis. In response to concerns about the impact of population ageing on health expenditure and workforce ratios, the Commonwealth Treasury began producing Intergenerational Reports to provide demographic projections and assess the fiscal and economic challenges of an ageing population. According to the third Intergenerational Report (IGR3) released in 2010, the number of people aged 65-84 years is expected to more than double in Australia by 2050 (rising from 2.6 million in 2010 to 6.3 million in 2050), with a trebling in those aged 85 years and over (rising from around 400,000 in 2010 to 1.8 million in 2050) (Commonwealth of Australia, 2010). These trends are illustrated in Figure 1. The IGR3 also projects a seven-fold increase in spending on ageing and health by 2050, and greater pressure on

the provision of aged care services. While population ageing will clearly have budgetary and societal impacts, the IGR3 asserts that population ageing should be regarded as an opportunity rather than a crisis.

FIGURE 1. Proportion of the Australian Population in Different Age Groups (1970-2050)



The current review of “Aged Care in Australia” being undertaken by the Productivity Commission is driven by issues with the current aged care system and the need to establish a stable and sustainable system that can meet the projected increases in healthcare demand arising from population ageing. The Productivity Commission’s draft report notes that while the aged care system has provided assistance to over one million older Australians in the last decade, it is complex to navigate, has service gaps, and needs a clear funding model. The revised model proposed by the Commission involves a simplified gateway to access all aged care services focused at the regional level, flexible services focused where possible on restorative care, choice of where to receive care services including at home or in residential care, and a funding model in which care recipients co-contribute to the cost of their care. The Commission’s final report to the government is due in mid-2011 (for more information see <http://www.pc.gov.au/projects/inquiry/aged-care>).

The Origins of Community Care in Australia

The nature of ageing in place in Australia is inextricably linked to changing government policy regarding access to health services, particularly services provided in the community. This brief summary draws on the work of Healy (1990) who outlined the history of community services in Australia, starting with the 19th century when destitute or dependent older people no longer able to care for themselves were forced to enter asylums. The first revolution in community care in Australia occurred with the passing of the Commonwealth Invalid and Old Age Pensions Act in 1908, which provided basic funding support to enable older people to maintain themselves and remain in the community. There was little further development in community care until the mid 20th century when older people’s stakeholder groups began to form and services such as “Meals on Wheels” started to emerge.

Access to community services for older people became a major political issue during the 1969 Commonwealth election campaign with the incumbent government recognising the political mileage to be made from providing small funds to community groups to enable older people to help themselves. The government enacted legislation in the areas of health and social services, however, this legislation remained fractured and piecemeal. It was not until the mid-1980s that community services were given higher priority with the release of the 1984 Home and Community Care (HACC) Act. This resulted in the establishment of a jointly funded Commonwealth-State Government program for providing support services in home and community settings. HACC provided eleven eligible service types ranging from home help and personal care, to food, respite, home maintenance and modification. The HACC program signalled a shift from “age” to “needs” based services, with eligibility extended to younger disabled people as well as older people. Eligibility was defined as being at risk of entry into long-term residential care. The HACC program resulted in almost a doubling of Commonwealth funding by 1987-1988.

Recent Policy Perspectives on Ageing in Place

From an Australian perspective, the concept of Ageing in Place was formally recognised in government policy during the 1997 Aged Care Reforms. However, in this context which focused on formal care settings, the concept was more narrowly defined and referred to the integration of aged care hostels and nursing homes into residential aged care facilities, allowing residents to transition from low care to high care services within the same organisation and prevent unnecessary and disruptive moves between facilities. The reforms were indeed found by the Australian Institute of Health and Welfare (AIHW, 2002) to facilitate ageing in place by reducing the number of transfers between facilities. In a separate review of the impact of the reforms, Richardson and Bartlett (2009) reported that there was an increase in the dependency level of aged care residents following the 1997 reforms and that the proportion of facilities allowing transition from low to high care more than doubled with a commensurate decline in the number of separate low and high care specific facilities. It was also reported by the AIHW that the reforms resulted in more people dying within the facility, rather than being forced to transition to a higher care facility or hospital during their final stages. This highlights the issue raised by O'Connor and Pearson (2004) that ageing in place also involves dying in place and that this should be recognized fully within the aged care model.

Subsequently, in a 2008 review of aged care services in the state of Victoria, it was noted that the concept of Ageing in Place had advanced and now related to policy and programs which “empower older people to live in their own home, connected to their community” (Victorian Department of Human Services, 2008, p.3). So, from the Victorian policy view at least, place equates to home.

Current Services to Support Ageing in Place

Aged care services enabling older people to age well are concentrated in community settings or residential aged care. Funding of these services is either the full responsibility of the Commonwealth Government or a shared responsibility between the Commonwealth and the States/Territories. The following services are available to older people living in the community:

- **Home and Community Care services (HACC)** – provision of a range of basic support services to enable older people and younger disabled people to live independently in the community. Jointly funded by the Commonwealth and State Government, this represents the largest source of community-based support for older people.
- **Aged care packages provided by the Commonwealth Government** (based on individual needs assessments by Aged Care Assessment Teams)
 - Community Aged Care Packages (CACP) – provision of low care assistance as an alternative to entering low-level residential care.
 - Extended Aged Care at Home (EACH) – provision of high care services in the home as an alternative to entering high level residential care.
 - Extended Aged Care at Home-Dementia (EACH-D) – targeting the needs of older people with dementia exhibiting the behavioural manifestations and psychological symptoms of dementia.
- **Other smaller scale targeted programs include:**
 - Transition Care packages assisting older people recuperate fully before returning home from a hospital stay;
 - Multi-purpose Services providing integrated care in small rural communities;
 - National Aboriginal and Torres Strait Islander Flexible Aged Care Program providing support for indigenous Australians, and
 - Department of Veterans' Affairs healthcare support provided to older veterans of the armed forces and their families.

As noted above, the Commonwealth Government is also responsible for funding residential aged care in Australia, which is provided by a mix of private for-profit, private not-for-profit and public providers. Table 1 provides a breakdown of the number and proportion of older Australians receiving key care types, highlighting the small proportion in residential care (7.3% of people 65+) compared with those receiving community care via HACC services (21.1%).

TABLE 1. Number and Proportion of Clients Receiving Care Services by Program, 2009-10

Program	Clients	Proportion of total population	Proportion of population 65+
Residential care	214,418	1.0%	7.3%
Community Aged Care Packages			
CACP	57,742	0.3%	2.0%
EACH	7,995	0.0%	0.3%
EACH-D	3,847	0.0%	0.1%
Transition Care	14,976	0.1%	0.5%
Residential Respite	44,160	0.2%	1.5%
Home and Community Care	616,000	2.8%	21.1%
Veterans' Home Care	69,600	0.3%	2.4%
DVA Community Nursing	31,400	0.1%	1.1%

(ADAPTED FROM THE PRODUCTIVITY COMMISSION DRAFT REPORT, 2010)
 NOTE: POPULATION PROPORTIONS BASED ON THE AUSTRALIAN POPULATION AT JUNE 2009 (ABS, 2009)

Migratory Patterns of Older Australians - a Changing Concept of Ageing in Place?

While it is important to understand population ageing and the provision of care services at the national level, it is also necessary to consider the implications for rural and regional areas of Australia which are ageing at a faster rate than metropolitan areas, primarily as a result of internal migration patterns. For example, according to population projections, coastal and regional areas of the state of New South Wales are expected to age more than the Sydney metropolitan area (Temple, 2006). Both coastal and regional areas are net losers of younger people as they migrate to the metropolitan area and coastal areas are net gainers of older people.

Older people relocating to regional and rural areas for the purposes of improved lifestyle have been colloquially labelled as *tree* or *sea-changers*. One popular sea-change area is the Southern Fleurieu Peninsula in South Australia, where the proportion of the population aged 65 years and over is expected to reach 35% by 2022,

compared to 22% for Adelaide and 25% for the state as a whole (Sparrow, 2006). A survey of the movement intentions of older residents living in retirement villages found that the primary reason for staying was lifestyle and that, for those considering leaving the region, the primary reason was a major life event such as the loss of partner or declining health, prompting a return to their prior location to be closer to family (Sparrow, 2006).

Even with the increased in-migration of older people into the Southern Fleurieu Peninsula, Sparrow (2006) notes that the older population is much more dynamic, with higher levels of out-migration than seen in the metropolitan region, particularly in the 80+ age group which was six times more likely to move than their metro counterparts. This increased out-migration in the oldest groups is due in part to some of the older sea changers returning to the metropolitan area to be closer to services and family as their health begins to deteriorate. Sparrow notes that for some older people, this return home may not be possible as they may lack the resources to buy back in the metropolitan housing market and, with younger people also being more mobile, they may not have a family to move back to.

The tendency for post-retirees to move to tree and sea change locations was reflected in a study of older people in Western Australia (Boldy, Grenade, Lewin, Karol & Burton, 2010). Boldy et al. surveyed over 3000 older people aged 50 years and over recruited from the membership of the National Seniors Association and resident in Western Australia. The younger age groups in the study were more likely to move to rural and regional areas whereas those in the 75+ age group were more likely to move to the metropolitan location. The reasons for the older group moving from regional to metropolitan areas were related to issues such as the need for greater access to health and community services, mirroring the responses from Sparrow's study above.

While the benefits of moving to rural and regional locations are being recognised by older Australians, the return migration noted by Sparrow and Boldy et al. indicates that these locations may not be as idyllic as first thought of. This is corroborated by the review of the literature on healthy ageing in rural Australia by Davis and Bartlett (2008) which highlights some of the additional challenges faced by older people in rural regions. This includes reduced access to facilities, including healthcare services, increased socioeconomic

disadvantages, and reliance on motor vehicles to travel the distances between locations.

A growing alternative to ageing in place is the emerging cohort of *grey nomads*. Onyx and Leonard (2005) define them as “people aged over 50 years, who adopt an extended period of travel (at least three months) independently within their own country” (p.61). The size of the grey nomad population has been estimated at 2 per cent of the total population (approximately 450,000 people according to Cridland (2008)). Grey nomads are typically found in the northern half of the country in order to take advantage of the warmer weather during winter (Hillman, 2009). However, according to Cridland, around 6 per cent of grey nomads sell their homes and live permanently in their mobile homes or caravans. This represents the ultimate abandonment of living in a particular “place”. There have been concerns raised, however, regarding the healthcare burden that grey nomads place on the communities they pass through, particularly smaller more remote locations (Tate, Mein, Freeman & Maguire, 2006; Queensland Government, 2010).

Factors Influencing Future Moving Decisions

Reporting on their survey of over 3,000 older Western Australians, Boldy et al. (2010) noted that it was clear that ageing in place was not the same as ‘staying put’, with older people “as likely as people of all ages to be involved in an ongoing assessment of the suitability of the place they are living in” (p.1). In developing a framework to understand the moving decisions of survey respondents, Boldy et al. utilised the push-pull framework developed by Stimson and McCrea (2004) to understand the reasons behind moving or staying put. Within this framework, a ‘push’ is something which encourages people to move from their current location (e.g. inability to maintain the house due to poor health), whereas a ‘pull’ is something which attracts people to a new location (e.g. access to health services, family, lifestyle factors etc). The study found that the mix of push and pull factors varied with age and that for most, pull factors predominated. The younger age groups, i.e. those aged 50-54 years, were more likely to cite lifestyle change, whereas older participants reported moving to be closer to services or community facilities. For those 75+, one of the key push factors was the difficulty

maintaining the house and garden. The authors note that attachment to a particular ‘place’ appears to become more important with age.

Interestingly, Boldy et al. reported that while retirement complexes were identified by some participants as a potential future option, other participants across all age groups expressed a strong preference not to move to this type of housing. The authors recommended that policymakers take a more holistic view of place to enable older people, regardless of age group or ability, to have the support they need to live in places that they enjoy.

In a national survey of the future housing intentions of almost 7,000 National Seniors members, Olsberg and Winters (2005) found that older people are now accepting of changes in housing tenure, noting that attachment to place was more associated with a locality rather than with a family home. These findings confirm those already cited by Boldy et al. and Sparrow. Members of the Baby Boom cohort (born between 1946 and 1965) were most comfortable with moving house and being willing to draw down on the financial assets. Olsberg and Winters refer to some of the colloquial expressions used to describe this activity, including ‘SKI - Spending the Kid’s Inheritance’ and ‘OWLS - Oldies Withdrawing Loot Sensibly’. They note that this activity will test the foundations of traditional family obligation. Several factors which play a critical role in future moving decisions were also identified by Olsberg and Winters:

- **Age:** They found an inverse relationship between age and intention to move, with almost three-quarters of the oldest participants (those aged 75+) having no intentions of moving in the future, compared to just over half of those aged 50 to 59 years.
- **Home tenure:** As the greatest financial asset for a majority of older people, home ownership enables greater choice for people to elect to move to new locations by drawing upon these resources. The authors noted that “One quarter of respondents expect to use up all their assets before they die. One third of Baby Boomers expect that to be the case” (p VIII).
- **Gender:** Gender was strongly associated with current and future housing intentions. Women were almost twice as likely to be living alone.
- **Health:** Declining health, coupled with the death of a spouse were cited as major reasons for future moves.

Ageing and the Needs of Diverse Groups

While we have so far considered ageing of the general population, along with some of the issues associated with ageing in rural and regional locations, it should also be recognised that there are specific groups of older people whose needs differ from the general population. This includes older people with intellectual difficulties and older migrants.

Older people with intellectual difficulties - Bigby (2008) argues that Ageing in Place policies targeting the general community are problematic for disadvantaged minorities, such as older people with intellectual disabilities, who have poor or unstable housing conditions or high support needs. The care support and housing for these people is primarily the responsibility of their children. Commonly, a mid-life transition occurs as a result of parental death or incapacity, usually resulting in their move to a group home. As a result, few have the choice to decide where they may wish to age.

Older migrants - According to the 2006 Census of the Australian population, 22% of Australians were born overseas (ABS, 2006), however, they are over-represented in the older age groups accounting for 38% of people 65-84 and 47% of those 85+ (AIHW, 2007). This means that services provided to assist older migrants to age well, either in the community or in residential care, need to be culturally appropriate. This can be particularly important for older migrants from non-English speaking backgrounds with dementia, as they may revert to their first language as the dementia progresses, or may never have learnt English in the first place (Dixon, 2008). Dixon cites the example of an older Greek man who was admitted to hospital after a bout of illness. During his period of hospitalisation, he began exhibiting problem behaviours and confusion and was subsequently diagnosed with dementia. Fortunately for him, he was admitted to a residential care facility targeting the Greek-Australian community, and so was able to communicate with Greek-speaking staff and eat familiar food. Within six months, his behavioural issues had eased and he was able to return home.

Dixon's report provides examples of culture-specific care provided in the community (including Italian specific Community Aged Care Packages) and in residential care. In addition to culture-specific facilities, Dixon highlights the Benetas Colton Close facility on the northern edge of Melbourne which has residents

from 11 different cultural backgrounds and staff from even more diverse backgrounds. According to the AIHW (2007), new migrant cohorts from different countries are beginning to age, such as the post-war cohort from Viet Nam), suggesting that future policy and practice will need to be flexible enough to deal with these changing needs. In a review of the literature on older people from Culturally and Linguistically Diverse (CALD) backgrounds, Rao, Warburton and Bartlett (2006) found that there is a myriad of issues associated with being from CALD backgrounds, both positive and negative. The review found that older people from CALD backgrounds can have different care needs than people from English-speaking backgrounds, and particularly in the last year of life, have a higher rate of mental disorders, and may be more susceptible to social isolation. This greater need for support is coupled with increased difficulty accessing culturally appropriate care. The authors note, however, that the experience of CALD older people is not all negative, with many able to benefit from stronger familial and community arrangements.

Policy and Practice Developments Supporting Ageing in Place

The development of healthy or active ageing strategies over recent years, at both the state and local government levels, has been an important response to population ageing in Australia (see for e.g. Kendig, Andrews, Browning, Quine & Parsons, 2000; Commonwealth Department of Health and Aged Care, 2002). The link between healthy, supportive and connected communities and ageing in place is increasingly recognised.

Positive ageing at the local level - In Victoria, a key policy goal of Ageing in Place and the need to enable older people to be able to choose where they age, inspired a state-wide project - The Positive Ageing in Local Communities project - to build the capacity of local government through locally-focused strategies for positive ageing (Project Partnerships, 2008). Jointly directed by the Municipal Association of Victoria (MAV) and Council on The Ageing (COTA) Victoria, the project provided support for a series of 31 demonstration projects involving 38 Victorian councils and involving over 11,000 older people across the state. These demonstration projects included support for development of positive ageing strategies, assistance

with the community consultative process to ensure that the strategies were informed by local needs, and implementation of actions identified in the strategies.

By the end of the 5-year project, 92% of the local government areas in Victoria had enacted positive ageing strategies or were in the process of developing them. This is a significant achievement given that prior to the commencement of the project only 16.5% of councils had ageing strategies in place. This response from local councils was facilitated through the exchange of information from the MAV/COTA on evidence-based responses to population ageing, as well as considerable information sharing between the councils themselves. The strategies developed by councils ranged from focusing on the delivery of aged care services to a broader whole-of-government focus on making the community a better place to live for older people, including improved urban design, safety, access to services and information, and promoting healthy ageing activities. During the evaluation of the project, older participants reported an increased sense of feeling connected to their community, including feeling like they were listened to and that their experiences, knowledge and skills were valued by councils.

The role of collaboration in building appropriate models of ageing well - While collaborative approaches to working with communities are important in the development and implementation of appropriate ageing well strategies, recent research has demonstrated that this is not easy to achieve (Warburton, Everingham, Cuthill, Bartlett & Underwood, 2011). In a study aimed at developing a model for ageing well at the community level (Everingham, Liu, Bartlett, Warburton & Cuthill, 2010), the activities taking place in two contrasting communities in the state of Queensland were reviewed. One community selected was a large coastal city of almost half a million people and a popular retirement destination, with one quarter of the population aged 55 years and over. The other community was an inland regional town characterised by ageing in place where only 17 per cent of the population aged over 55 years. The project interviewed local stakeholders in both communities, including representatives from government departments, service providers, advocacy organisations and seniors' organisations. The 31 participants were asked about their perceptions of how to achieve effective collaborations to help their communities age well and the strategies necessary to support them.

The findings highlighted the need for a multifaceted model of ageing well, involving the “three dimensions of social engagement, health, and facilities for safe, independent living” (Everingham et al, p.767). A variety of strategies to achieve ageing well were identified, which can be summarised as self-help initiatives, collective or community action, and government intervention. In particular, participants agreed that a “preventive focus and an enabling and supportive environment are essential to maintain the health and well-being of people as they age.” (Everingham et al., p.771). While there was consensus regarding the need for a multifaceted approach, the study found that there was a disjuncture between the views of community and government stakeholders, with the former seeing the need for more direct government intervention, whereas the latter placed more focus on individual responsibility and the need to prevent dependence. The authors concluded that an increasing focus on government intervention is needed to more effectively address the issues arising from population ageing.

Best practice models - Recent practical examples of Ageing in Place innovations are emerging, although few are yet reported in the literature. The Benevolent Society (TBS), Australia's oldest charity, has a long track record of providing community and residential care for older Australians in Sydney, New South Wales and has developed the Apartments for Life model, based on the Humanitas Organisation in Rotterdam (TBS 2010). A key feature of this model is that it offers older people the chance to purchase housing in their local community which will meet the support requirements needed to enable them to age in place and avoid the need to move again should their health decline. The TBS plan also includes provision for 40% of the apartments to be subsidised so that they are affordable for disadvantaged older people. After considerable consultation with the local community and local council, the plan is being finalised prior to construction commencing.

As part of their planning activities for the development of an AFL complex, TBS commissioned Galaxy Research to include a series of questions related to population ageing and aged care issues in its regular fortnightly Galaxy Omnibus national survey, which involves a representative sample of 1000+ Australians aged 18 years and over across the country. The survey was conducted in July 2010 and found that 92% of

respondents supported the Apartments for Life concept, with strong support for the inclusion of subsidised or low cost housing (Galaxy, 2010). The features of the model identified as important by respondents included the ability to maintain independence (22%), easy access to healthcare services (20%) and proximity to family and friends (17%). The survey also found that younger participants felt that access to healthcare was the principal benefit of the model, whereas older respondents valued the opportunity to remain in the neighbourhood and close to friends.

Final Caveat – Ageing in Place is Not Always Positive

In their review of the literature on Ageing in Place, Jeong and Stein (2003) point out that supporting ageing in place at home is not necessarily the best solution for older people or their families. They argue that in many cases, older people may seek to remain in their homes in order to avoid the stress, including financial stress, associated with moving to a residential care facility. Jeong and Stein also point to research showing that the increased focus on community care has led to older people being discharged earlier from hospital, increasing the burden on families. So, while it is generally accepted that enabling older people to age well in the places of their choosing is a positive policy, this needs to be tempered with a clear understanding of individual needs and available service options. The simplified gateway to aged care proposed in the current Productivity Commission review aims to provide such a flexible assessment of individual needs and options.

Conclusions

It is clear that Ageing in Place is no longer a simple choice between ageing at home or within a residential care setting. Older Australians, particularly members of the Baby Boom cohort, are more mobile and willing to seek out new places in which to age. This has implications for policymakers at the national and regional level, particularly in more isolated rural and coastal locations that may not have the facilities in place to meet the care needs of older residents. The diversity of the Australian population also means care services, whether in the community or in residential care, need to be sensitive to the specific needs of sub-groups. The need for a responsive and simple aged care system that meets population

and individual level needs, now and into the future, is now being recognised by Commonwealth, state and local government, researchers, and care providers.

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REFERENCES

- Australian Bureau of Statistics. (2006). *2006 Census of Population and Housing: CDATA ONLINE*, ABS Cat. no. 2064.0. Canberra: ABS. Retrieved from <http://www.abs.gov.au/cdataonline>
- Australian Bureau of Statistics. (2009). *Population by Age and Sex, Australian States and Territories*. Cat. no. 3201. Canberra: ABS
- Australian Institute of Health and Welfare. (2002). Ageing in Place: Before and after the 1997 aged care reforms. *AIHW Bulletin*, Issue 1.
- Australian Institute of Health and Welfare. (2007). *Older Australia at a glance* (4th edition). Cat. no. AGE 52. Canberra: AIHW.
- Australian Institute of Health and Welfare. (2010). *Residential aged care in Australia 2008–09: a statistical overview*. Aged care statistics series no. 31. Cat. no. AGE 62. Canberra: AIHW.
- Bigby, C. (2008). Beset by obstacles: A review of Australian policy development to support ageing in place for people with intellectual disability. *Journal of Intellectual & Developmental Disability*, 33(1), 76–86
- Boldy, D., Grenade, L., Lewin, G., Karol, E., & Burton, E. (2010). Older people's decisions regarding 'Ageing in Place': A Western Australian case study. *Australasian Journal on Ageing*, published online: 1 Oct 2010
- Commonwealth Department of Health and Aged Care. (2002). *The National strategy for an ageing Australia: An older Australia, challenges and opportunities for all*. Canberra: Commonwealth Department of Health and Aged Care.
- Commonwealth of Australia. (2010). *Intergenerational report 2010. Australia to 2050: Future challenges*. Canberra: Commonwealth of Australia. Retrieved from www.treasury.gov.au/igr/igr2010/
- Cridland, S. (2008). *An analysis of the winter movement of grey nomads to northern Australia: Planning for increased senior visitation*. PhD Thesis, James Cook University. Retrieved from JCU ePrints <http://eprints.jcu.edu.au/7901>
- Davis, S., & Bartlett, H. (2008). Healthy ageing in rural Australia: Issues & challenges. *Australasian Journal on Ageing*, 27(2), 56–60.
- Dixon, T. (2008). Ageing in Place: Lessons in diversity from a place 'CALD' Melbourne. *Australian Ageing Agenda*, Nov/Dec, 60–63.
- Everingham, J.-A., Liu, C.-W., Bartlett, H., Warburton, J., Cuthill, M. (2010). Rhetoric to action: A study of stakeholder perceptions of aging well in two local communities. *Journal of Gerontological Social Work*, 53,760–775
- Galaxy Research. (2010). *Coping with the impacts of our growing and ageing population: a universal concern. Report prepared for The Benevolent Society*. Chatswood: Galaxy Research. Retrieved from <http://www.bensoc.org.au/uploads/documents/Galaxy2010AgeingPopulationMainFindings.pdf>
- Healy, J. (1990). Community services: Long-term care at home? In H. Kendig & J. McCallum (eds), *Grey policy: Australian policies for an ageing society* (pp127–149). North Sydney: Allen and Unwin
- Hillman, W. (2009). *Social needs of grey nomads travelling in Queensland*. Paper presented at the Australian Sociological Association 2009 Annual Conference. Retrieved from <http://www.tasa.org.au/conferences/conferencepapers09/papers/Hillman,%20Wendy.pdf>
- Jeong, S.Y-S. & Stein, I. (2003). Literature review: Ageing in place. *Geriatrics*, 21(3), 24–27.
- Kendig, H., Andrews, G., Browning, C., Quine, S., & Parsons, A. (2001). *A review of healthy ageing research in Australia*. Report prepared for the Office for Older Australians, Commonwealth Department of Health and Aged Care, Commonwealth of Australia, Canberra, 2001.
- O'Connor, M. & Pearson, A. (2004). Ageing in place – Dying in place: Competing discourses for care of the dying in aged care policy. *Australian Journal of Advanced Nursing*, 22(2), 32–38.
- Olsberg, D., & Winters, M. (2005). *Ageing in place: Intergenerational and intrafamilial housing transfers and shifts in later life*. Melbourne: AHURI
- Onyx, J. & Leonard, R. (2005). Australian grey nomads and American snowbirds: Similarities and differences. *The Journal Of Tourism Studies*, 16(1), 61–68.
- Productivity Commission. (2010). *Caring for Older Australians, Draft Inquiry Report*. Canberra: Productivity Commission.
- Project Partnerships. (2008). *MAV COTA Positive Ageing in Local Communities Project: Evaluation, December 2008*. Caniambo: Project Partnerships.
- Queensland Government. (2010). *Response to the Economic Development Committee's Issues Paper No. 3: Grey Nomad Tourism*. Brisbane: Queensland Government.
- Rao, D.V., Warburton, J., & Bartlett, H.P. (2006). Health and social needs of older Australians from culturally and linguistically diverse backgrounds: Issues and implications. *Australasian Journal on Ageing*, 25 (4), 174–179
- Richardson, B., & Bartlett, H.P. (2009). The impact of ageing-in-place policies on structural change in residential aged care. *Australasian Journal on Ageing*, 28 (1), 28–31.

- Sparrow, L. (2006). Migration and return migration in the older population of the Southern Fleurieu Peninsula – an overview In *Ageing in Place: Implications for local government*, Australian Local Government Association, Occasional Paper, pp6-10, Canberra.
- Stimson, R.J., & McCrea, R. (2004). A push-pull framework for modelling the relocation of retirees to a retirement village: The Australian experience. *Environment and Planning*, 36, 1451-1470.
- Tate, J., Mein, J., Freeman, H., & Maguire, G. (2006). Grey nomads: Health and health preparation of older travellers in remote Australia. *Australian Family Physician*, 35 (1/2), 70-72.
- Temple, J. (2006). Understanding population ageing in NSW: What is the effect of retirement migration and ageing in place? In *Ageing in Place: Implications for local government*, Australian Local Government Association, Occasional Paper, pp11-26, Canberra.
- The Benevolent Society. (2009). *Apartments for Life in Australia: Lessons for Australia from Humanitas in the Netherlands*. Paddington: The Benevolent Society. Retrieved from <http://www.bensoc.org.au/uploads/documents/HumanitasAFLinAustraliaReportJune2009.pdf>
- Victorian Department of Human Services. (2008). *Victorian Summary Report: Ageing-in-Place - The Way Forward. Proceedings of the Senior Government Officials' Meeting: International Federation on Ageing*, 4 September 2008. Retrieved from http://ifa-fiv.org/attachments/127_Victoria%20Australia%20Summary%20Report.pdf
- Warburton, J., Everingham, J-A., Cuthill, M., Bartlett, H., & Underwood, M. (2011). More than just a talkfest: The process of developing collaborations in ageing across two different community types. *Urban Policy and Research*, 29(2), 183-200.

Key Conditions in Diffusion of Innovative Practices in The Netherlands

A case study of the most eminent key conditions in regional innovations to support elderly people to stay at home longer

Introduction

What The Netherlands will look like in the years to come is anyone's guess, but one thing seems inevitable: from 2011 onwards, population ageing will be presenting society with obstacles. There are many questions that need to be addressed. What does population ageing entail and what kinds of problems are likely to arise from it? Ageing citizens will be putting ever more pressure on available resources. In general, government policies on population ageing in The Netherlands are primarily formulated to deal with the mounting costs of healthcare, but projections also tell us that the demand for care is going to exceed the supply. One of the developments we have observed is the transition from a welfare state towards a participation society, a shift designed to relieve some of the pressure on the healthcare system. We have also found several examples of innovative practices aimed at strengthening self-reliance and setting the right conditions for elderly people to stay at home longer. We did find, however, that the diffusion of these innovative practices is still lagging behind. In this article we will be discussing the key conditions that are necessary to successfully diffuse innovative practices on a regional and national level.

Ageing in The Netherlands

Despite what many people think, population ageing is not a new phenomenon in The Netherlands. With developments in healthcare, shorter working hours, improved living conditions and the resulting drop in mortality rates, the population of pensionable age has been expanding slowly but steadily ever since the 1920s. This trend is likely to progress at an ever more rapid pace. According to Statistics Netherlands, male life expectancy has on average been rising by 0.5 years per annum these past few years, with female life expectancy showing an annual 0.4 year increase. Caused in part by this century's falling fertility rates, one of the most important changes in The Netherlands is a noticeable decrease in working population. Dutch birth rates increased briefly but dramatically in the years after 1945. This so-called baby boom generation will reach

the pensionable age of 65 from 2010 onwards. With the birth rate steadily declining since the first half of the 1970s, the percentage of young people in the population is dropping. This combined with increased life expectancy will result in increasing old-age dependency ratios (i.e. the proportion of citizens aged 65 or over to citizens aged 20-64).

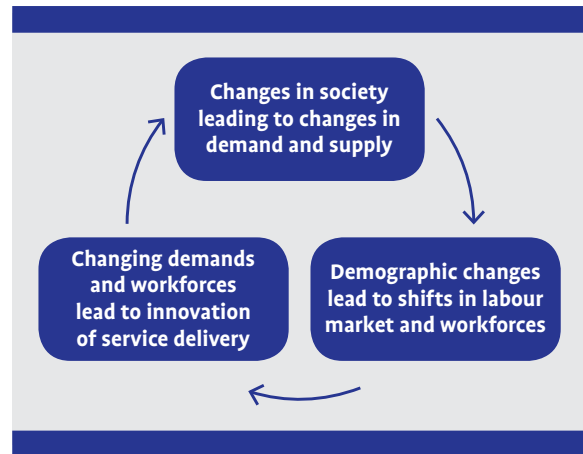
In The Netherlands, population ageing is projected to peak around the year 2035, when over 4 million people will be aged 65 or over. The projected old-age dependency ratio for 2035 is 42 - 46 per cent (compared to an old-age dependency ratio of almost 24 in 2010), after which time the proportion of over-65's will slowly start to decline due to the falling fertility rates we are currently experiencing. Parallel to increasing life expectancy and declining birth rates, immigration is expected to rise. As most immigrants tend to fall within the young adult to middle age range, high immigration levels may help to mitigate the trend of increasing dependency ratios. According to Statistics Netherlands, a limited influx of immigrants will result in a drop in population size.

Three Perspectives on the Effects of Ageing

Much has been said and written about the consequences of population ageing. For the most part, the debate has been revolving around its repercussions for healthcare costs, staffing policies or gross domestic product (GDP). This is to some extent unfortunate, as a broader view of the relations between developments in various domains may reveal many challenges and opportunities to explore. In a deliberative process with several public sector professionals and backed by our extensive experience in the field of consultancy, a thought model has been developed as a more comprehensive view of population ageing in order to address some of the most pivotal effects of population ageing. The starting point is the observation that ageing populations have effects in several domains and that these developments cannot be viewed separately. Rather than merely focussing on one aspect of the effects of ageing, Baars & Offereins (2010) in their 'ageing model' look at a spectrum of potential changes. The model addresses the following questions: "What will be the changes in patterns of supply and demand? : The effects of population ageing on society", "Who shall produce the required supply? : The effects of population ageing on production volume" and "How

can supply and demand be brought into alignment? : Innovative practices to capitalise on the opportunities population ageing has to offer". These questions are interrelated and should be considered consecutively.

FIGURE 1. Ageing Model (Baars & Offereins, 2010)



Effects of population ageing

The precise effects of an increasingly elderly population are hard to estimate. However, we do know that there is a strong relation between ageing and the prevalence of diseases, particularly chronic diseases. Diseases often lead to physical and mental limitations (Van de Berg Jeths, Timmermans, Hoeymans, & Woittiez, 2004). This process is called disablement (Gezondheidsraad, 2005). Disablement leads to an increase in the need for support and healthcare, both in volume and complexity. Seen on a macro level, population ageing is expected to affect the affordability of the healthcare system in The Netherlands, with a projected rise in the qualitative and quantitative demand for care and cure.

The question is whether there will be enough personnel on hand to provide the required volume and type of care and cure. From 2010 onwards, a growing number of workers will be moving into retirement, leaving a smaller number of people to do a possibly even bigger job. Labour shortages are expected to rise. Growing pressure on employees may result in higher staff turnover with its associated risks of losing valuable know-how about products, services and business processes. New insights into human resource policies are needed to deal with this problem, as well as ways in which organisations may hold on to their expertise and tap into changing patterns of demand.

In order to mitigate the effects of population ageing on the Dutch healthcare system, various interventions have been implemented in a number of domains. They are aimed at decreasing the demand for care, bringing healthcare training programmes into alignment with modern care practices and remodelling care services through the implementation of innovative practices.

Interventions

Socialisation of care and cure is the motto: we want people to remain self-reliant and stay out of the healthcare system for as long as possible. We have observed several developments designed to bring about the required social changes.

From Welfare State to Participation Society

The paradigm of the welfare state, with its focus on central and large-scale interventions, uniformity and equality is seen no longer to be appropriate for current societal issues. A transition towards a participation society is desired (Raad voor Maatschappelijke Ontwikkeling, 2002). The central idea in a participation society is socialisation: not the government but society is actively responsible for its own well-being and welfare. Key elements of this perspective are people's self-reliance and the strength of social infrastructures: society takes care of itself and promotes people's ability to participate in it to their full potential. Society can only function if everyone contributes; for that reason people should be encouraged to participate in many different social arenas (Raad voor Maatschappelijke Ontwikkeling, 2002; Raad voor Maatschappelijke Ontwikkeling, 2004a and Raad voor Maatschappelijke Ontwikkeling, 2004b). By getting people more actively involved in society throughout their lives, social structures are strengthened, self-reliance is increased and the need for formal care decreases. This concept is called 'community care' (Beraadsgroep Community Care, 1998 and Raad voor Maatschappelijke Ontwikkeling, 2003). Supporting people to live at home longer fits into this perspective.

From Large-Scale Interventions to Customisation in the Vicinity

Large-scale and collective interventions no longer suffice when it comes to dealing with the effects of an ageing society. However, routines of the welfare state

have remained dominant both in the expectations of citizens and in the interventions of the government (Raad voor Maatschappelijke Ontwikkeling, 2002). Therefore, according to the Raad voor Maatschappelijke Ontwikkeling (2002), in order to break existing deadlocks and achieve an effective transition to a participation society, decentralisation is key. Policy should be made as close as possible to society: "Better than any other tier of government, municipalities are able to mobilise citizens and arrange support close to citizens: customisation in the vicinity" (MvT Wmo).

From Policy-Execution to a New Governing Concept

In their advice, the Counsel for Societal Development (RMO) (2002 and 2004b) outlines the essence of a new concept of governing. The first tenet is regulation setting: the government withdraws. The focus is on regulations and government involvement is limited to a supervisory level. This entails governance with a limited set of regulations that are strictly managed but leave institutions, professionals and citizens space to manoeuvre. The second tenet is horizontalisation: institutions and professionals are to focus on each other instead of the government, with the government taking on the role of director/supervisor. These trends seem congruent with changes in society: a new paradigm is appropriate with a new equilibrium between society and government (RMO, 2002).

Innovative Practices to Increase Self-Reliance

In the coming years, there will be a noticeable change in the percentage of elderly people moving to nursing homes, as many will choose to live at home for a longer period of time. This development is the result of the growing individualisation of society and an increase in the number of people who are willing and able to pay for comfort and privacy. Unlike the current generation of elderly people, the future generation, passionate about maintaining their independence, will no longer be willing to share a room with six others at the eighth floor of some nursing home. This will irrevocably lead to higher expenditures, unless smart solutions are put in place to push down the costs. Technology can play an important role in enabling people to stay at home longer. It can provide them with comfort and a sense of

safety and make care more efficient due to its labour-saving potential

Implementing new technologies will be a key factor in achieving and maintaining convenience (e.g. light, sound and motion sensors) and social interaction (e.g. keeping in touch with children and grandchildren). Technology can provide entertainment and be a means of socialising with others. Informal care will also benefit from new technologies. Care TV and interactive communication over the Internet will make caring for elderly relatives that much simpler for the active population, as it enables them to provide remote care.

It is to be expected that technology will play a greater role in an individual-oriented society than a collective-oriented society. As long as the government is responsible for the collective organisation and financing of (technological) care solutions, people will be less inclined to take care of themselves. Moreover, in economically unfavourable conditions, there will be little space for innovation and investments (Niet van Later Zorg, 2007). This is why private or semi-public innovations will be more successful than initiatives that are collectively steered. This article describes two examples of innovations that are aimed at supporting elderly people to stay at home longer. Both cases are illustrative of innovations that are driven internally by various stakeholders within and beyond the care arena in two regions in The Netherlands. Both examples differ as to the extent to which they have evolved over time. They also differ in terms of the involvement of private organisations.

The first case is Brainport Health Innovation (BHI), a programme of Brainport Development. Brainport Development is a regional cooperation between public and private organisations in the Southeast of The Netherlands, aimed at strengthening economic capacities of the region and centred around technology and innovation. The region has characteristics of a life-tech and med-tech cluster, in which some large innovative companies are active. Also, the region is facing the effects of population ageing, expressing itself in an increase of the older population and a decrease of the available workforce. This puts pressure on amongst others, the regional healthcare system. In order to be able to deal with the effects of ageing, the aim of the BHI programme is bundle and combine initiatives aimed at decreasing healthcare costs and improving labour-saving capacity

by using technology to create life-tech solutions. The central idea of these solutions is, that by using technology a broad variety of services can be provided to people, varying from maintaining social contacts to extramural care. The utilization of technology enables people to live at their homes as long as possible. A key element of Brainport's approach is using innovations developed by small and medium-sized companies and rapidly scaling up the applications in a business incubator programme. Innovations are directly tested and implemented in the field so that care providers or end-users can use the technological devices immediately, while employees are trained to work with them along the way. All innovative services are provided to the citizens via Broadbent. They for instance provide remote care facilities and develop programmes for specific groups, such as people with (early stages of) dementia.

The second case is a regional initiative in the province of Drenthe, which is aimed at making optimal use of the available care capacity in a rural area with a rapidly ageing population. This area is suffering from population decline; many small villages see a rise in the number of vacant homes as young people are leaving the area to live and work in big cities like Groningen or Utrecht. The elderly people stay behind and will need support or care at a certain moment in time. However, due to the rural area, the travelling time to deliver the required care is quite long. This has been the driver to launch an initiative by the municipality of Borger-Odoorn in joint cooperation with the municipality of Aa & Hunze. They have invited care providers, housing corporations, the local hospital and health insurers to discuss the opportunities to collaborate and ensure that senior citizens receive the care they need while they are living at home. One of the pillars of this innovation is building a coordination centre to allocate the required capacity to the villages and towns in both municipalities. By bundling the capacity of the care providers in a region, the capacity distribution can be organised more efficiently in the rural area. Instead of competing they will now cooperate which will enhance the accessibility of villages and lower costs. This will bring areas that were difficult to service within reach and enable elderly people to stay at home longer. The municipality of Borger-Odoorn currently fulfils an important role as the catalyst behind the innovation. As yet, no private stakeholders are involved with the initiative, which is

still in its early stages, and its progress will depend on the commitment of the stakeholders. According to the municipality of Borger-Odoorn, dialogue is key. “It is all about making people aware that in the long term, the collective advantages will outweigh any short-term individual disadvantages.”

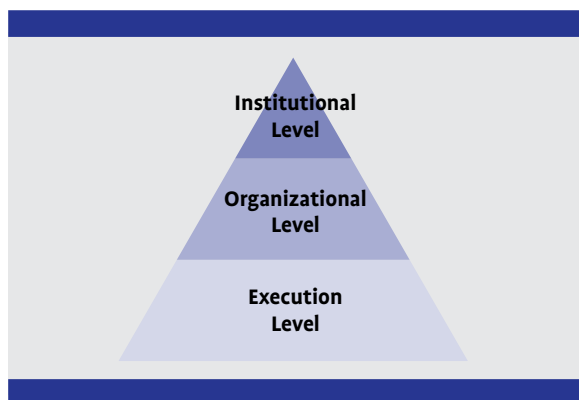
Process of Innovation

Mulgan & Albury (2003: 3) use the following definition of successful innovation: “*the creation and implementation of new processes, products, services and methods of delivery which result in significant improvements in outcomes’ efficiency, effectiveness or quality*”. We have found that across The Netherlands, various innovations aimed at allowing the elderly to stay at home longer have been implemented. However, we have also observed that the successful diffusion of these innovative practices can be a hard nut to crack. This view is supported by the findings of the Dutch Advisory Council for Science and Technology Policy (AWT) (2008), which indicated that innovation is moving at a slower pace in the public sector than in the private sector.

Levels of Innovation

The AWT distinguishes three levels of innovation: execution level, organisational level and institutional level. We feel it is important to highlight these different levels of innovation, as they are interrelated (both ways), complementary or conditional. The way an innovation is defined or approached influences its potential value, effects and scope. The definition of an innovation also influences the approach, support, success factors and barriers in its diffusion. The three levels of innovation are shown in Figure 2.

FIGURE 2. Levels of Innovation



Looking at the innovative practices that are in place to enhance the possibilities for the elderly to stay at home longer, we have found innovations are mainly limited to the execution level. On an organisational level there are far fewer initiatives. When it comes to the institutional level, The Netherlands are currently undergoing a transition, moving from a welfare state to a participation society. This process is ongoing.

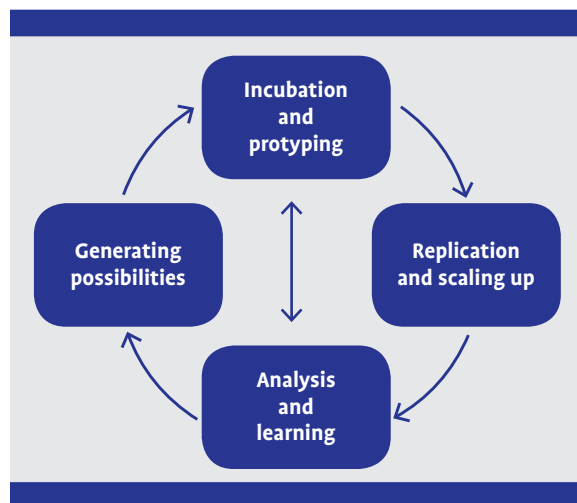
Innovation as a Process

Mulgan & Albury (2003) see innovation as a process with four stages. The process of innovation and the diffusion of innovation is non-linear, and it is difficult to draw clear lines between the stages. The stages are:

1. **Generating possibilities to stimulate and support innovative practices:** Setting the relevant mechanisms to develop innovative ideas, such as political manifestos.
2. **Incubation, prototyping and risk management:** Defining the probability rules, using prototypes and setting the mechanisms to mitigate related risks.
3. **Replicating and scaling up:** The diffusion of innovative practices. In this article we define diffusion as ‘the process by which an innovation is communicated through certain channels over time among the members of a social system’ (Rogers, 1995:5).
4. **Evaluation of achieved results aimed at future improvement:** Evaluate the results in order to learn and improve the innovative practice.

The four stages are shown in Figure 3.

FIGURE 3. Process of innovation (Mulgan & Albury, 2003)



Mulgan & Albury (2003) have identified factors that will foster innovation. These factors are shown in Appendix 1.

Barriers

We have used the distinction between the levels of innovation and the stages of the model to conduct an exploratory research on barriers to the diffusion of innovative practices, aimed at creating possibilities for the elderly to stay at home longer. At every stage, elements can be distinguished that influence the innovation. We have studied the two innovative practices by doing desk research and conducting additional interviews with experts in the field. We will discuss the most important findings per region.

Brainport Region

The Brainport region is currently moving from the ‘incubation and prototyping’ phase to the ‘replication and scaling up’ phase in the model of Mulgan & Albury (2003). However, some activities in the analysis and learning phase are also being carried out and some barriers in the ‘generating possibilities’ phase are yet to be overcome.

Generating possibilities

The Brainport region is a region with a tradition and stimulation of innovation. Large-scale companies, such as Philips, ASMI, ASML and MSD have research facilities in the vicinity of the city of Eindhoven. Several actors in both the public and private sector collaborate in the network administrative organisation, Brainport Health Innovation, with four programmes for realising regional ambitions. These programmes are ‘Health and Technology Campuses’, ‘Living Lab’, ‘School for Health and Technology’ and ‘e-Health Experience Centres’. The organisations in the region act on a global level and are used to extensive competition. Due to their international appeal, many organisations have a diverse and highly-educated staff. The capacity for creative thinking is in place. Spaces for facilitating innovation processes are realised in the programmes Health and Technology Campuses and e-Health Experience Centres.

Despite the region’s efforts to create an innovative climate, there are still some barriers that hinder the phase of generating possibilities. There is a lack of political consensus when it comes to the region’s ambitions in the

field of Health Innovation, resulting in a virtual absence of political manifestos. This makes institutional change difficult to realise. Innovations mainly occur incrementally and take place on the execution level. Legislation is formulated on a municipal, regional, provincial and national level, so the absence of political manifestos limits the speed of the up-scaling and replication of innovations.

Incubation, prototyping and managing risks

In the Brainport region, safe spaces and incubators are being developed; for example, as part of the programme ‘Health and Technology Campuses’ and ‘e-Health Experience Centres’. At the campuses, new organisations can be set up. At the e-Health Experience Centres, new innovations can be tested. Resources involving end-users are being realised as well, for example by providing Fibre to the Home (FTTH) to all households in the region.

However, due to the absence of political consensus and cutbacks, government organisations are unable and unwilling to provide the funding for early development. Large companies also suffer from the effects of the recent economic downturn. The lack of sufficient funding creates barriers in the innovative processes in the region. The actual involvement of end-users is a condition that is key to Brainport for realising its strategy. The adoption of innovations by end-users functions as a pushing mechanism to create commercial value. However, it is important to bear in mind for whom the products or applications are developed. Technological development moves at a faster pace than the ability of end-users to become accustomed to using these new technologies. Many innovative practices focus on technology that allows us to provide care at home, and therefore makes it possible for the elderly to stay at home longer. However, the current generation of elderly people have difficulties accepting and using technologies such as telemedicine. This might hamper the process of scaling up the innovations. User involvement in the application of innovations could be a key driver in pushing innovations into the market.

Replication and scaling up

The Brainport region is home to many different organisations across a number of sectors and of various forms and sizes. In this region, the technical and healthcare

sector work together. Electronics companies such as Philips and MSD are known for their innovative capacity and ability to create new technologies. Implementation of these technologies has proved difficult, however. This is mainly due to the fact that the Dutch healthcare sector lacks the required innovative capacity to keep pace with technical advances and is more reluctant to change. This affects the speed with which innovations are adopted.

Analysis and learning

We have found that Brainport is yet to move into the ‘analysis and learning’ phase, even though the success of innovations is already being measured. It has proved difficult to define metrics for the success of innovative practices. While we believe the old adage ‘if it isn’t measured, it isn’t managed’, measuring the wrong thing can lead to poor outcomes and results. The lack of good metrics in turn results in a lack of commitment on the part of politicians and funders. Until innovations are shown to have economic value, the benefits of these innovations are generally not fully realised (PwC, 2011).

Province of Drenthe

Generating possibilities

A regional collaboration in the province of Drenthe is an example of an innovation that is still in the phase of generating possibilities. Driving force behind the collaboration are politicians at the municipal level who have taken on the role of director and are working towards realising institutional change by reorganising the provision of care in the region. Care providers find themselves challenged by an ageing society and the rapid increase in care demand in a rural area with a dwindling population. The problem owner in this case appears to be the municipality that is initiating, steering and creating space for innovation. The aim is to turn over ownership gradually as soon as key stakeholders start taking ownership and begin working according to the newly developed programme. This confirms the notion that municipalities are able to mobilise stakeholders and are an important factor in pushing innovation forward.

The key challenge is to propel innovation into the phase of incubation, prototyping and managing risks, so that it will be adopted by care providers. This requires a willingness on the part of stakeholders to invest resources and organisational capacity in designing, implementing

and evaluating innovation. After municipalities have set the right conditions, stakeholders will have to take up and champion the cause of innovation. We have found that many innovations fail at the point where they are evolving beyond the stage of novel idea and are moving towards the stage of actual implementation. Important success factors are the willingness of end-users to pay for the product or service and the willingness of providers to work together and take on financial and managerial risks. This requires safe spaces and a sound business model to test the innovation. The business model should encompass all stakeholders and there should be a clear distribution of tasks and responsibilities.

Conclusion and Discussion

We have compared two cases of regional innovations in which a number of stakeholders from the public and private sector are working together on a large-scale innovation aimed at supporting elderly people to live at home for as long as possible. Both cases are in different stages of the innovation process. The Brainport region has developed the Brainport Health Innovation programme, which has moved from the phase of generating possibilities and commitment to the incubation, prototyping and managing risks phase, and is now evolving towards the replication and scaling up phase. The province of Drenthe has only just launched its innovation by establishing regional cooperation between care providers. The two regional initiatives also differ in terms of the kinds of stakeholders that are involved. Brainport is an open innovation platform made up of public organisations, knowledge institutes, private SMEs and large-scale companies (triple helix). The Drenthe initiative focuses on collaboration between municipalities and stakeholders in the healthcare sector. Despite the differences between the regions and the relatively small set of cases, some lessons can be learned when it comes to the diffusion of innovative practices that make it possible for elderly people to live at home longer. We will discuss the most important findings.

The key conditions that are determinative for both cases will have different accents according to their development phase in the innovation process. The Mulgan & Albury model (2003) provides some interesting insights. We recommend that policymakers focus on the aspects that are applicable to the phase their organisation or region is in. It is also important, however, to

keep an eye on aspects that are relevant in other phases. Political manifestos and commitment are particularly important in the ‘generating possibilities’ phase. This is determinative for the level and type of innovation. When political consensus is lacking, innovation is more likely to be limited to execution level and occur more incrementally. The absence of political commitment can be explained by the difficulty of designing the right metrics: if you can’t measure it, it can’t be managed. In times of economic hardship, the demand for a sound assessment of the benefits is likely to be stronger: costs have to be justified. Another important finding is the importance of clear problem ownership. The ownership of problems and desired outcomes is what makes working backwards from outcome goals possible.

Both cases involve regional collaborations between public and private organisations and are illustrations of innovative practices at the execution level. The question is whether innovations on the execution level will suffice to deal with the current developments in Dutch society. More institutional innovations are desired, and to bring those about the national government needs to reconsider its role. According to the AWT, the (central) government has two roles in the diffusion of local innovations. The first role is that of a coordinating and leading government, in cases where large institutional innovations are desirable. The innovation is part of a larger whole and must also be viewed in that context. The second role is that of a listening government, in situations where innovation is happening within certain limits and rules. The central government should play a limited role and only provide the frameworks that allow innovative practices to flourish.

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REFERENCES

- Adviesraad voor het Wetenschaps- en Technologiebeleid. (2008). *Meer laten gebeuren. Innovatiebeleid voor de publieke sector*. Den Haag: Adviesraad voor het Wetenschaps- en Technologiebeleid.
- Baars, G.J. & Offereins, A. (2010). *Ageing in the Public Sector. The vision of executive management and decision-makers in the Dutch public sector*. Amsterdam: Reed Business.
- Beraadsgroep Community Care. (1998). *Leven in de lokale samenleving: Advies over community care met een (verstandelijke) beperking*. Den Haag: Beraadsgroep Community Care.
- Berg Jeths, A. v., Timmermans, J., Hoeymans, N., & Woittiez, I. (2004). *Ouderen nu en in de toekomst. Gezondheid, verpleging en verzorging 2000-2020*. Bilthoven: Rijksinstituut voor Volksgezondheid en Milieu.
- Gezondheidsraad. (2005). *Vergrijzen met ambitie*. Den Haag: Gezondheidsraad, publicatie nr. 2005/06.
- Lucht, F. v., & Polder, J. (2010). *Van gezond naar beter. Volksgezondheid Toekomstverkenning 2010*. Bilthoven: Rijksinstituut voor Volksgezondheid en Milieu.
- Ministry of Health Netherlands. (2007). *Niet van later zorg*. VWS
- Mulgan, G. & Albury, D. (2003). Innovation in the Public Sector. *Discussion paper*.
- PwC (2011). *If Innovation isn't measured, can it be managed? How universities manage innovation though disciplined and novel measures*. New York
- Raad voor Maatschappelijke Ontwikkeling. (2002). *Advies 24. Bevrijdende Kadens*. Den Haag: Sdu Uitgevers.
- Raad voor Maatschappelijke Ontwikkeling. (2003). *Advies 25. De handicap van de samenleving*. Den Haag: Sdu Uitgevers.
- Raad voor Maatschappelijke Ontwikkeling. (2004). *Advies 34. Ouderen tellen mee. Advies aan de Themacommissie Ouderenbeleid van de Tweede Kamer*. Den Haag: Sdu Uitgevers.
- Raad voor Maatschappelijke Ontwikkeling. (2004). *Advies 36. Lokalisering van maatschappelijke ondersteuning*. Den Haag: Sdu Uitgevers.
- Rogers, E.M. (1995). *The diffusion of innovations*. New York: The Free Press.

Technology for Ageing in Place

Introduction

Ageing in Place, enabling older people to remain at home in their community and avoid institutional care for as long as possible, has been the dominant paradigm for successful aging over the last decade. On the face of it, ageing in place is praiseworthy as an ideal state of affairs. Putatively, it offers the best prospects for quality of life among the older population while contributing to cost reduction for institutional care and relief of the financial and resources burden upon the geriatric healthcare system. Moreover, the prospect of transposing the primary point-of-care to the older person's home offers potentially substantial social and economic benefits to stakeholders, care recipients and providers alike. Nevertheless, various operational factors oppose the effective implementation of sustainable ageing-in-place infrastructures capable of supporting independent living by older people into advanced aged. To address these limitations, technological interventions, in particular information, computing, and communications technologies (ICT), are receiving increased recognition as the lynchpin to support successful ageing in place, through mitigating many of the complex practical challenges presented by independent living in the community. This article is an informal and synoptic review of the current state-of-the-art in ageing-in-place technologies, with an outlook to future possibilities with the advent of nascent technologies in the fields of robotics, smart sensors, neural interfaces, and artificial intelligence.

Objectives and Prerequisites

To establish the role of technology for ageing in place within proper context, it is necessary first to consider the foundational objectives and prerequisites, abstracted from any particular technological approach implementation, for a secure and safe environment designed for older people living independently in the community.

Fundamentally, the purpose of ageing-in-place technology is to create an ambulatory 'safe zone' within which the older resident's functional, physical, medical, and social needs dictate the appropriate type and necessary level of intervention the system will provide.

Viability of an ageing-in-place scheme that meets the above criteria depends upon various factors that control the ability of the care system to accommodate the changing functional needs of the older person, usually in the context of declining health and increasing physical and cognitive impairment. A minimally viable system requires the deployment of basic medical and social support services for monitoring and maintenance of physical and psychological wellbeing, safety, accessibility and mobility. Equally imperative are the logistical support requirements and constraints of the care provider, whether formal or informal, that can render economically sustainable an ageing-in-place programme.

When developing technological interventions, it is essential to consider both sides of the care service model (cared-for and carer). Monitoring technologies, in particular, exemplify this challenge. For example, a scenario in which technological means are available for detecting night-wandering of a cognitively disoriented person is ineffective if no protocols for human intervention or alternative mediated response are in place (Rowe, Campbell, Lane).

Independent Living with Declining Health and Frailty

As people get older, the majority acquire multiple and chronic medical conditions. Such age-related chronic co-morbidities often are accompanied by physical and cognitive impairments that are liable to affect, with varying severity, basic and instrumental activities of daily living. Beyond a certain threshold of impairment, independent living becomes unsustainable without physical support and intervention. There also is an increased risk of social isolation and loneliness that accompanies reduced mobility.

Management and treatment of multiple co-morbidities demands efficacious solutions to maintain adherence to strict medication regimes; this is particularly true for older citizens living at home lacking direct support from family members or a 24-hour caregiver. Typically, an older person is required to take three or more different medicines several times daily in order to maintain nominal health. Many of these medicines are in tablet form and the multiplicity of prescriptions for different hours of the day presents a formidable memory burden and inconvenience for the self-medicating patient. Frequently the result is non-adherence to the

medication regime with the potential consequences of declining health, function, and shortened lifespan. The self-medication compliance deficit among older people has spawned a plethora of medication reminder and timed dispensing systems. Many devices of this sort are designed to operate independently of the health delivery service, relying significantly upon the consistent cooperation and vigilance of the patient. More advanced compliance solutions communicate with the care system's information network and in some varieties, integrated with the personal emergency response system (PERS). This networked feature is now appearing as part of comprehensive ageing-in-place support service packages offered by commercial suppliers, especially in the USA.

Falls Intervention

An effective ageing-in-place scheme must include adequate protocols to address the risk of falls and their prevention. Diverse technical solutions have been proposed and several developed to address the question of falls prevention among the older population. These range from appropriate design of the built and home environment and 'smart' orthotics that provide biofeedback or adaptive mechanical compensation to promote improved balance or alter the centre of gravity of a patient. However, notwithstanding a much improved and detailed understanding of the complex environmental, physiological and biomechanical processes involved, very few (if any) of these 'active' solutions have yet been demonstrated to be efficacious in statistically reducing the risk of falling.

Self-Neglect

Remote monitoring and detection for self-neglect is gaining increased attention in the research community (Bakkes, Morsch, & Kröse, 2011). Deployment of validated systems to monitor and respond to self-neglect, however, is minimal; several small or medium sized pilot installations have or currently are being evaluated in the USA, Europe, and Austral-Asia.

A key challenge to reliable detection of self neglect, in particular, is rooted in the diverse yet inter-related modalities in which the neglect process can occur, for example, malnutrition, personal care and hygiene, and self medication compliance. A holistic (multimodal) self-neglect monitoring protocol therefore is required in

order to provide effective monitoring and intervention protocols. Such protocols necessarily would include regular medical examinations (potentially implemented via a telemedicine service platform) and non-intrusive monitoring (as far as possible) of location, behaviour, and activities of daily living.

Smart Home Technologies

The socio-economic viability and sustainability of regional and national aging in place and assisted living care schemes (as an alternative to sheltered accommodation) is predicated upon appropriate and adequate information processing and communications infrastructures to support networking and embedded systems (Bronswijk, Kearns, Normie, 2007). Decentralization of healthcare provision is resulting in the migration from secondary and tertiary care frameworks towards enabled primary and community delivered care (Augusto, 2007). In the case of the older population, the shift is from in-patient and institutional care to assisted care for ageing in place. This is greatly facilitated by advances in information and communication technologies (ICT), exemplified by ubiquitous intelligent sensor networks that are dynamically responsive to a wide range of measured environmental, physiological, and affective parameters. Incorporation of these features into the domestic living environment is essentially what constitutes the concept of 'Smart Home'.

The "Smart" or "Intelligent" home environment has been extensively promoted in "techno" circles as the ultimate solution for the older person living independently and has been accompanied by more than its fair share of hype. The putative goal of the smart home in the ageing-in-place context is to enable older citizens to age in place with autonomy, security, dignity, and reasonable quality of life, whereby the subject's medical status and welfare is constantly, yet unobtrusively, monitored and functional assistance for home management and personal motility provided as needed. Conceptually, the smart home is required to monitor and evaluate the physiological, cognitive, and emotional status of the subject, and respond accordingly. In functional terms, a smart home is equipped to deliver advanced technology-based services to its users via a variety of installed devices and systems, usually networked via an executive control hub (a decision-support computer server that may be located in the home, or communicate remotely from a commercial service provider's premises).

Potential benefits include: enhanced safety and security (for example, by behaviour and activity monitoring and provision of emergency assistance when an imminent harmful situation is determined), environmental control responsive to the user's medical status, control of lighting and home appliances to provide networked assistive technology support for basic and instrumental activities of daily living (ADL/IADL). Notable recent implementations of smart homes systems include creation of semi-autonomous supervised environments for people with mild cognitive impairment.

The degree of success of smart home applications ultimately relies upon the extent to which their design and implementation follows a model that empowers elders, making them active participants in the healthcare process and in the monitoring of their condition rather than passive recipients of care services. (Demiris, 2008).

The essential elements comprising a smart home environment are: Sensors, Communications, Actuators, and User interfaces. Sensors, systems and applications are coordinated and supported and by server-based computer software applications known as 'middleware'.

User control of an integrated smart home system is accomplished through a variety of interfaces, including existing home appliances already familiar to older adults, such as the telephone, television, and music entertainment centre. But increasingly, a new class of experimental user interfaces are being introduced that employ voice and gesture recognition, and also remotely sensed physiological signals such as body temperature, pulse, and even patterns on brain electrical activity (see below in "Future Directions").

To concretise the smart home concept and indeed the preceding discussion on health maintenance, consider the following scenario. Miriam, a widow in her mid-eighties, still lives in the house where she raised her family. Miriam takes daily medication for osteoporosis, diabetes, and atherosclerosis. The latter condition is responsible for a noticeable decline in Miriam's cognitive function and she is increasingly forgetful and disorientated. Miriam's children live overseas and she refuses to enter institutional care or sheltered accommodation. With the help of local authority grants, Miriam's house has undergone some structural modifications to help maintain her independence, including a stair lift and grab bars in the bathroom. Last year Miriam subscribed to a community alarm service and she wears an emergency

response button on the wrist (when she remembers to put it on). Six months ago, Miriam volunteered as a subject for a smart home project run by the local university. Several items of technology were recently installed in the house. These include microphone and vibration sensor fall detection sensors embedded in the floor of the bedroom, kitchen and bathroom. Miriam also now has an upgraded to the community alarm, which is connected to the fall detection system just described. In the bedroom, pressure sensors have been inserted under the mattress; these automatically cause night lights distributed between the bedroom and bathroom to illuminate, when Miriam gets out of bed during the night. As with the fall detection system and community alarm, information from the bed sensors are wirelessly routed to the TV set-top box, which in turn is connected via ADSL to a 24-hour call centre. Wall-mounted television flat panel screens in the bedroom and kitchen also are routed wirelessly to the set-top box.

In the kitchen, the refrigerator door has been fitted with a sensor which logs when and how frequently the door is opened. The cold water faucet also has a sensor monitoring the volume of water used. If the faucet is not opened at least twice in a 12-hour period, an automatic alert is flagged at the call centre.

Retrofitting Technology

A significant impediment to provisioning technology for ageing-in-place facilities is that older people's homes often are structurally unsuitable or unprepared for the straightforward installation of smart-home systems and devices. Adaptation can be a complex and costly affair, frequently requiring structural modifications to accommodate sensors and actuators. New building regulations for accessibility and ICT infrastructure do not address the problem when buildings, often as old as the resident, are considered. This situation is problematic to greater or lesser degree according to country and region, and national or municipal building regulations (Johansson, Josephsson and Lilja, 2009). Another contributing cofactor is the lack of mature technical standards both for harmonised interfaces and interoperability of devices and products from disparate manufacturers. Various industry-led initiatives are in the progress to redress this, including KNX (a pan-European collaborative standard for home and building control¹).

Usability and Acceptability

It has been established through numerous studies (e.g., Gentry 2009 and Kaye et al., 2011), that technology for ageing in place requires at least the following three attributes from the perspective of the user, as prerequisites for usability and acceptability:

- Unobtrusiveness
- Familiarity
- Choice - optional override and control by the user

The attribute of 'unobtrusiveness' is typified in systems that are not visually or otherwise apparent during the everyday activities of the subject. Examples are miniature sensors embedded in the home building structure, furniture, utilities, kitchen appliances, telephone apparatus, entertainment systems, and even clothing. A wirelessly networked array comprising environmentally embedded sensors can provide a comprehensive health and welfare monitoring capability for the older resident without he or she having to be constantly aware of its existence.

Familiarity of surroundings is particularly important in the context of the older person ageing in place with cognitive decline. Unfamiliar features impinging within the home environment are liable to elicit confusion and anxiety from a subject with mild cognitive impairment (MCI) or early stage dementia. Therefore, familiar objects may be co-opted into a technologically enabled living environment for ageing in place, which might include a standard telephone handset incorporating internal modifications for enhanced functionality, such as being intelligently networked into a personal emergency response system (PERS). The telephones (typically placed in the bedroom, living room, and possibly bathroom), can be configured as the platform for a host of situation monitoring systems, communicating information (appropriately filtered and formatted) to the remote call centre or caregiver's terminal device (e.g. PDA or iPhone). Television receivers, with the addition of a modified set-top cable/satellite decoder, incorporating a steerable videocam module, can provide interactive communication capabilities, such as video-conferencing with caregivers and family members. Functional usability factors, however, are insufficient to ascertain the feasibility or appropriateness of an ageing-in-place programme. The cultural backdrop is equally important when determining whether a technology-led strategy will be accepted and used effectively by the older beneficiary (Lindly, Harper, and Salen 2008).

Ethical Considerations

As technological costs fall, and assistive technology becomes more affordable and easier to use, we are likely to witness an increased range of available products and services, and larger numbers of older people utilizing them. However, smart home technologies for ageing in place may also result in increased or exacerbated social isolation.

Yet, the development of an ethical framework within which to evaluate the appropriateness of ageing-in-place technologies is proceeding somewhat behind the newly introduced. This is partly owing to the accelerating rate of progress in technological innovation and shorter lead-time between proof of concept and commercial availability. But, it is also due to the often unanticipated nature of ground-breaking, so-called ‘disruptive’ technological advances, which emerge to shatter previous paradigms about the social role and scope of technology. The measure of success of ageing-in-place applications ultimately will rely on the extent to which their design and implementation follows a model that empowers elders, making them active participants in the healthcare process and in the monitoring of their condition rather than passive recipients of care services. (Demiris, 2008; Mordini, 2010).

Future Directions

A plethora of smart home and ageing-in-place support applications, currently in development at university, government, and industrial research centres around the globe, is rapidly advancing the field through the sustained market introduction of more powerful, more versatile, more intelligent, and more affordable ageing-in-place technological interventions. Leading the field are multidisciplinary research consortia formed under the aegis of the European Commission. Key shared-cost research initiatives are being carried within the EC’s Seventh Framework Programme (FP7) on the themes of “Ageing Well in the Information Society”, “e-Inclusion”², and “e-Accessibility”³. Another EC supported initiative is “Ambient Assisted Living” joint programme (AAL)⁴. Many of the projects in these programmes concern the creation of intelligently responsive living environments, embedded with activity and health-monitoring sensors, and voice and video mediated guidance systems for the older resident (Wadhwa & Wright, 2010). Several of the projects are investigating the role of autonomous

homecare robots. Results from several of FP7 (and earlier FP6) projects already have been validated in pilot installations and are expected to reach the market during the present decade.

Personal Hygiene

Several groups, working independently, have created prototype restrooms and toilets equipped with an array of biosensors designed to measure parameters such as urine and stool production and biochemical composition, and frequency of evacuation. Various metabolic and health status factors that may be diagnosed and monitored in this manner include nephritic, hepatic, and endocrine function; in particular, indications of dehydration, malnutrition, diabetes, and haemorrhage can be detected (Coughlin, 2010). Other interesting developments in hygiene management provide gentle guidance (through artificial intelligence scene pattern recognition and synthesised voice interaction) to cognitively impaired elders while washing hands (von Bertoldi et al, 2008).

Home Service Robots

In a smart home ageing-in-place environment, mobile or stationary robotic systems are envisaged to operate autonomously, when required, but will be federated to a distributed intelligent smart home network; in other words, exchanging information with other ageing-in-place systems, whether fixed sensor nodes or various communication and actuation systems (e.g., security, heating, ventilation, entertainment). In such an arrangement, the robot responds contextually to the status of the older resident interacting with his or her environment.

Owing to the mobile attributes of most service robots, they possess more degrees of freedom for performing adaptive tasks for caregiver functions. However, the possibility for malfunction and potential danger to the human subject also is present. Consequently, the design of home service robotic systems requires considerable vigilance in respect of fail-safe and security features; this requirement is especially pertinent with respect to old and frail human subjects (Franchimon & Brink, 2009).

Robots with affective-response capability have recently entered the market. Japan pioneered this field a decade ago through the development of robotic pets and further research in this direction has taken place in Europe (Heerink, et al., 2010). More recently, companies

such as Alderbaran Robotics (France), have introduced human-form “android” robots such as ‘Nao’, that are responsive to voice, eye-gaze, and gesticulation (Heinrich & Wermter, 2011). Currently, several national and international ageing-in-place technology collaborative projects involving robots of this type are in progress. Examples are FLORENCE (Multi Purpose Mobile Robot for Ambient Assisted Living)⁵; KSERa (Knowledgeable Service Robots for Aging)⁶; and SRS (Multi-Role Shadow Robotic System for Independent Living)⁷.

Emotional Engineering

Notwithstanding endogenous medical causes, social isolation experienced by many older people living alone is likely to be a contributing factor to depression, anxiety, and other possible symptoms of clinical psychosis.

Well-being monitoring systems are responsive to the emotional (affective) state of the subject by detecting signs of depression or agitation through, for example, pattern recognition algorithms for gestures, facial expression, and movement activity (Such et al., 2006). Affective systems currently being researched employ a variety of interventions, that by various stimulatory means attempt to ameliorate episodic depression and anxiety. These include the modulation of temperature, humidity, ambient lighting, and the production of soothing music or recorded sounds, and even pleasant aromas. The affective system also, where appropriate, can automatically establish an audio or video link with a family member or caregiver. Additional modalities include the use of functional materials (which modify their properties according to environmental or system predicated conditions), for example to modify the visual scheme and ambience of the subject’s surroundings, including the colour of wall coverings and the displayed images on “smart” picture frames.

Neural Interfaces

The last several years have witnessed the emergence of new modality for assistive technology, such as non-invasive brain-computer interfaces (BCI), as a novel means for people with severe motor or communication disability to interact with their surroundings and other people. BCI technology is based primarily on the detection and processing of tiny voltages generated in the cortex and measured by electrodes placed on the scalp. The technique, known as electroencephalography (EEG), for

many decades was used routinely for clinical diagnostics and neurological research; it is only since 2006 that the technology began to move out of the clinical laboratory into consumer applications. Consumer level brain-computer interfaces are starting to be introduced into home-based rehabilitation support with remote point of care. To be sure, BCI technology for practical applications on a wide scale still is in its infancy, but recently the domain has received a boost through the market introduction of low-cost consumer equipment aimed at the computer games and entertainment sector. Several companies have created special research editions of their products, which are now being harnessed for use in disability and rehabilitation applications. The capabilities of these devices are being investigated for several practical applications, including operation of virtual keyboards for text communication and the control of smart home appliances, such as TV, lights, and even powered wheelchairs. The European Commission, through its “Seventh Framework Programme” has directed substantial funds to support collaborative research by international consortia developing applications for older citizens, using BCI controlled environments. Such projects include the control and reduction of neurological tremor, such as in Parkinson’s and MS sufferers (Grimaldi & Manto) and a means for emotional expression, social interaction, and environmental control for victims of cerebral trauma and stroke (Navarro et al).

Conclusions

The goal of technological intervention for ageing in place is to empower older citizens to live and socially engage with a maximum degree of autonomy, safety, security, and dignity. Technology potentially can facilitate this objective by furnishing the means and infrastructure to monitor the older citizen’s medical status and welfare, while appropriately and flexibly responding to situations requiring human assistance and support. Technology also can assist in activities of daily living through automation of household functions and accessibility of the living environment for improved mobility throughout the home.

Drawing together the main threads concerning proposals for implementing technology for ageing in place, several key issues are apparent. First, technology has the potential as a powerful solution for successful independent living. Second, the ethical implications and

protocols are not yet adequately clarified; in particular, there is risk of overreliance on technology to supplant appropriate human intervention, thereby exasperating a condition of social isolation by the technology beneficiary. Third, looking to the future, technological advances are proceeding at an exponential rate, with new ‘disruptive’ technologies being introduced in rapid succession. Consequently, it is increasingly difficult to establish firm baselines upon which to benchmark the social and functional value of new ageing-in-place support technology-based systems and services. Nevertheless, few probably would disagree that the role of technology for successful ageing in place is paramount and merits high priority on the research agenda.

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NOTES

- ¹ <http://www.knk.org>
- ² http://ec.europa.eu/information_society/activities/einclusion
- ³ <http://www.eaccessibility.org>
- ⁴ <http://www.aal-europe.eu>
- ⁵ <http://www.florence-project.eu>
- ⁶ <http://ksera.ieis.tue.nl>
- ⁷ <http://srs-project.eu>

REFERENCES

- Adlam T., Carey-Smith B., Evans N., Harris N. (2010). *Implementing smart home technology for people with dementia in the community*. *Gerontechnology*, 9(2):146-147
- Augusto, J.C., McCullagh, P., McClelland, V., Walkden, J.A. (2007) *Enhanced Healthcare Provision Through Assisted Decision-Making in a Smart Home Environment*. Proceedings of the 2nd Workshop on Artificial Intelligence Techniques for Ambient Intelligence (AITAm'07), pp. 27-32. IJCAI.
- Bakkes S, Morsch R, and Kröse B (2011). *Telemonitoring for Independently Living Elderly: Inventory of Needs & Requirements*. In Proceedings of the Pervasive Health 2011 Conference (eds. Julie Maitland, Juan Carlos Augusto, and Brian Caulfield).
- von Bertoldi A, Boger J, Hoey J, Poupard P, Fernie G, Boutilier C, & Mihailidis A. (2008) *Autonomous Guidance Through Handwashing Using A Partially Observable Markov Decision Process*. In *Technology and Aging - Selected Papers from the 2007 International Conference on Technology and Aging*. Eds. Mihailidis A, Boger J, Kautz H, and Normie L.
- Bronswijk J.E.M.H. van, Kearns W.D., Normie L.R., 2007 *ICT infrastructures in the aging society* *Gerontechnology*, 6(3):129-134
- Coughlin, J.F., (2010) *Understanding the Janus Face of Technology and Ageing: Implications for Older Consumers, Business Innovation. and Society*. *International Journal of Emerging Technologies and Society*. 8: 2, pp: 62-67
- Demiris, G., Parker Oliver D., Dickey, G., Skubic, M., Rantz, M. (2008). *Findings from a participatory evaluation of a smart home application for older adults*. *Technology and Health Care* 16:111-118
- Demiris G, Hensel BK, Skubic M, Rantz M. *Senior residents' perceived need of and preferences for "smart home" sensor technologies*. *International Journal of Technology Assessment in Health Care*, 24:1 (2008), 120-124.
- Franchimon F, Brink M. (2009). *Matching technologies of home automation, robotics, assistance, geriatric telecare and telemedicine*. *Gerontechnology* 8(2):88-93
- Gentry T. (2009). *Smart homes for people with neurological disability: State of the art*. *NeuroRehabilitation* 25 209-217
- Grimaldi, G, Manto, M (2010) *Neurological Tremor: Sensors, Signal Processing and Emerging Applications*. *Sensors*, 10: 1399-1422.
- Hayes T.L, Larimer N, Adami A, and Kaye J.A, (2009). *Medication adherence in healthy elders: small cognitive changes make a big difference*. *Aging Health*; 21(4): 567-580.
- Heerink, M., Kröse, B., Evers, V., Wielinga, B., (2010). *Relating conversational expressiveness to social presence and acceptance of an assistive social robot*. *Virtual Reality* 14:77-84
- Navarro N, Weber C, and Wermter S (2011). *Real-World Reinforcement Learning for Autonomous Humanoid Robot Charging in a Home Environment*. In *Towards Autonomous Robotic Systems*. Lecture Notes in Computer Science, Volume 6856/2011, 231-240
- Johansson, K., Josephsson, S., Lilja, M., (2009) *Creating possibilities for action in the presence of environmental barriers in the process of 'ageing in place'*. *Ageing & Society* 29, 49-70.
- Kaye JA, Maxwell S.A, Mattek N, Hayes T.L, Dodge H, Paveli M, Jimison H.B, Wild K, Boise L, and Zitzelberger T.A, (2011). *Intelligent Systems for Assessing Aging Changes: Home-Based, Unobtrusive, and Continuous Assessment of Aging*. *J Gerontol B Psychol Sci Soc Sci* (2011) 66B (suppl 1): i180-i190.
- Lee H., Kim Y.T., Jung J.W., Park K.H., Kim D.J., Bang B., Bien Z.Z. (2008). *A 24-hour health monitoring system in a smart home*. *Gerontechnology* 7(1):22-35
- Lindly S.E., Harper R, Sellen A (2008). *Designing for Elders: Exploring the Complexity of Relationships in Later Life*. Proc. BCS-HCI '08 Proceedings of the 22nd British HCI Group Annual Conference on People and Computers: Culture, Creativity, Interaction - Volume 1; British Computer Society. p77-86.
- Mordini, E. (2010). *Ethical Recommendations In Ageing and Invisibility*. Mordini E. and de Hert P(Eds.) ; IOS Press ; pp. 195-218
- Navarro A.A., Ceccaroni L, Velickovski F, Torrellas S, Miralles F, Allison B.Z., Scherer R, and Fallner J (2011). *Context-Awareness as an Enhancement of Brain-Computer Interfaces*. In *Ambient Assisted Living Lecture Notes in Computer Science*, Volume 6693/2011, 216-223.

- Regnier, V. & Denton, (2009) A. *Ten new and emerging trends in residential group living environments*. *NeuroRehabilitation, Architecture and Gerontology*. 25:169-188
- Rowe M.A., Campbell J, Lane S. *Using a Home Monitoring System to Improve Night Home Safety for Community-Dwelling Persons with Dementia*. *Technology and Aging* (Eds. Mihailidis A, Boger J, Kautz H, Normie L) pp 114-121 ; 2008, IOS Press
- Silva J., Chau T, Mihailidis A *Automatic Activity Detection for In-Place Care*. *Technology and Aging* (Eds. Mihailidis A, Boger J, Kautz H, Normie L) pp 11-18 ; 2008, IOS Press
- Wadhwa, K.; Wright, D. (2010) *A survey of Technology for the Elderly*. In *Ageing and Invisibility*; Mordini E. and de Hert P(Eds.); IOS Press, 2010; pp.143-172.
- Wallace, J., Mulvenna, M., Martin, S., Stephens, S., and Burns, W., (2010) *ICT Interface Design for Ageing People and People with Dementia*. In: *Supporting People with Dementia Using Pervasive Health Technologies*. (Eds: Mulvenna, Maurice and Nugent, CD), Springer, pp. 165-188.
- Such MJ., Barberà R, Poveda R, Belda-Lois J.M., Gomez A, Lopez A, Cort J.M., Sanchez M, (2006). *The Use of Emotional Design Techniques in User Oriented Design of Interfaces Within a Smart House Environment: Case Study*. *Technology and Disability*, Vol. 18, No. 4, pp. 201-206

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