PD ISO IWA 18:2016

BSI Standards Publication

Framework for integrated community-based life-long health and care services in aged societies

bsi.

National foreword

This British Standard is the UK implementation of ISO IWA 18:2016.

The UK participation in its preparation was entrusted to Technical Committee IWA/CAS, Community-based Integrated Health and Care Services for Aged Societies.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Published by BSI Standards Limited 2016

ISBN 978 0 580 94133 7
ICS 03.080.30; 11.020

Compliance with a British Standard cannot confer immunity from legal obligations.

This Published Document was published under the authority of the Standards Policy and Strategy Committee on 30 June 2016.

Amendments/corrigenda issued since publication

Date	Text affected

PD ISO IWA 18:2016

INTERNATIONAL WORKSHOP AGREEMENT

IWA 18

First edition
2016-06-15

Framework for integrated community-based life-long health and care services in aged societies

Cadre de travail pour les services de santé et de soins communautaires à vie intégrés dans les sociétés âgées

Reference number
IWA 18:2016(E)

COPYRIGHT PROTECTED DOCUMENT

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Contents

Page

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

International Workshop Agreement IWA 18 was approved at a workshop hosted by the British Dental Association (BDA), in association with the British Standards Institution (BSI), held in London, United Kingdom, in July 2015.

Introduction

This International Workshop Agreement defines principles, social issues and approaches related to aged societies in order to address the shortcomings in social infrastructure. The contents of this International Workshop Agreement, which are supported by the holistic framework of services (see Clause 4), need to be highlighted on a global platform in order to share knowledge. Countermeasures to cope with insufficiencies in social infrastructures to adapt to a global ageing society need to be addressed today.

According to projections based on the UN DESA report on *World Population Prospects*[3] by the year 2050, many countries are projected to become super-aged societies, with people aged 65 years or older exceeding more than one in five of the population.

NOTE The terms "ageing society" (where more than 7 % are 65 years or older) and "aged society" (where more than 14 % are 65 years or older) are derived from past UN population reports. The term "super-aged society" (where more than 21 % are 65 years or older) is an extension of these terms. It is used in the academia and government of Japan and is gradually spreading into use in international news arenas.

In addition, developing countries and regions with rapid economic growth will be subject to changes to their ageing population over the next few decades. A well-supported infrastructure of an aged society includes a comprehensive, holistic view covering diverse generations and their lifestyle, economic status, cultural backgrounds and much more. As life expectancy increases, governments, health care providers, service providers and the community need to adapt to enable members of the younger generation to maintain their health and active participation in society, and to support the desire for people to continue to live independently as they age. This International Workshop Agreement covers key concepts that support certain on-going social changes. It aims to promote further deliberations from service providers and standards bodies, among others, of these aspects that will not only address existing issues, but also help to prevent potential future problems.

This International Workshop Agreement recognizes the wide range of global efforts to define social infrastructure for aged societies and to offer consistent, personalized lifelong care. A common factor in academic research and national/international guidelines is the promotion of the individual as an equal partner in controlling his/her health care. This relates to all aspects of a person's life, including planning, decision making and day-to-day living, leading to a user-centred approach. The following five key principles have been identified as the core elements for future investment:

a) human dignity;

b) productive ageing;

c) community-based services;

d) systemization with people at the centre;

e) pursuit of innovation for sustainability.

Guidance on these key principles is given in 3.1.

Consideration needs to be taken in delivering person-centred services. Care needs to be provided ethically and respectfully, with the flexibility to meet the needs of diverse generations. Both the individual and the wider society benefit because the individual experiences greater satisfaction with his/her care and the social infrastructure that supports health care delivery is made more cost-effective. The focus of this International Workshop Agreement is not to provide clinical guidance, but to encourage health care service providers to drive for a shift in thinking. Harmonizing the concepts and methodology internationally will streamline the market environment of providers and users of health and care services, and build the basis for fair competition and development of related industries.

Establishing a common goal for standardization activities will help to provide life-long support for aged societies in the most efficient and productive way, by addressing common challenges. There will be closer examination on where standards can be used to bring about change. There is an increase in

global awareness of the need for a sound social infrastructure to support ageing populations. There are already some established platforms for knowledge sharing, but more needs to be done to align the language used and to outline proven good practices that may influence new behaviour and practices.

This International Workshop Agreement aims to encourage:

— sharing of knowledge and best practices at global level, relating to a gradual increase over time of aged societies;

— minimizing repetition and duplication of efforts, through the development of common approaches to the challenges associated with societies that are not able to adapt to an increase in the older population;

— improved realization and understanding of aged societies for policy makers, providers and the general public;

— creation of innovative solutions, across multiple service sectors, that will allow people to remain within their communities and outside of institutionalized care, where possible and for as long as possible;

— economic benefits for governments and the general public, through the provision of better products, services and systems.

Supporting material to accompany this International Workshop Agreement is available at the following website: shop.bsigroup.com/iwa18.

International Workshop Agreement IWA 18:2016(E)

Framework for integrated community-based life-long health and care services in aged societies

1 Scope

This International Workshop Agreement provides a framework for addressing challenges faced by societies that have been unable to adapt to an ageing population. It can also be used by stakeholders as a useful reference at regional or global level.

This International Workshop Agreement addresses health, care and social challenges (including health care needs, daily living tasks, well-being, combating isolation and keeping safe) to ensure that the needs of individuals continue to be met as they grow older. It also outlines principles related to ethics, community-based solutions, integration, person-centred solutions and innovation.

2 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

2.1
community
group of people, often living in a defined geographical area, who exhibit some awareness of their identity as a group, and who share common needs and a commitment to meeting them

[SOURCE: WHO Ageing and Health Technical Report, Vol.5[4], modified]

2.2
community-based services
community-based care
blend of health and social services provided to an individual or family in his/her place of residence for the purpose of promoting, maintaining or restoring health, minimizing the effects of illness and disability on his/her normal lifestyle

Note 1 to entry: The term “community-based programmes” is also used.

[SOURCE: ISO/TR 14639-2:2014, 2.12, modified]

2.3
dignity
right of individuals to be treated with respect as persons in their own right

[SOURCE: WHO Ageing and Health Technical Report, Vol.5[4]]

2.4
functional ability
health-related attributes that enable people to be and to do what they have reason to value

Note 1 to entry: It is made up of the intrinsic capacity of the individual, relevant environmental characteristics and the interactions between the individual and these characteristics.

[SOURCE: WHO World Report on Ageing and Health[5]]

2.5
environments
combination of factors at all levels of services in the extrinsic world that form the context of an individual’s life, including the built environment, people and their relationships, attitudes and values, health and social policies, the systems that support them and the services that they implement

[SOURCE: WHO World Report on Ageing and Health[5], modified]

2.6
health
state of complete physical, mental and social well-being and not merely the absence of disease or infirmity

Note 1 to entry: Health has many dimensions (anatomical, physiological and mental) and is largely culturally defined.

[SOURCE: WHO Ageing and Health Technical Report, Vol.5[4]]

2.7
health promotion
combination of health education and related organizational, political and economic interventions designed to facilitate behavioural and environmental adaptations that will improve or protect health

[SOURCE: WHO Ageing and Health Technical Report, Vol.5[4]]

2.8
health system
people, institutions and resources, arranged together in accordance with established policies, to improve the health of the population, while responding to people's legitimate expectations and protecting them against the cost of ill-health through a variety of activities, the primary intent of which is to improve health

Note 1 to entry: Health systems fulfil three main functions: health care delivery, fair treatment of all and meeting non-health expectations of the population. These functions are performed in the pursuit of three goals: health, responsiveness and fair financing.

Note 2 to entry: A health system is usually organized at various levels, starting at the community level or the primary level of health care and proceeding through the intermediate (district, regional or provincial) to the government level.

[SOURCE: WHO Ageing and Health Technical Report, Vol.5[4], modified]

2.9
healthy ageing
process of developing and maintaining the functional ability that enables well-being in older age

[SOURCE: WHO World Report on Ageing and Health[5]]

2.10
independence
ability to perform an activity with no or little help from others, including having control over any assistance required rather than the physical capacity to do everything oneself

[SOURCE: WHO Ageing and Health Technical Report, Vol.5[4]]

2.11
independent living
living at home without the need for continuous help and with a degree of self-determination or control over one's activities

[SOURCE: WHO Ageing and Health Technical Report, Vol.5[4]]

2.12
integrated care
integrated care services
methods and strategies for linking and coordinating the various aspects of care delivered by different care systems, such as the work of general practitioners, primary and specialty care, preventive and curative services, and acute and long-term care, as well as physical and mental health services and social care, to meet the multiple needs of an individual client or category of persons with similar needs

Note 1 to entry: In this International Workshop Agreement, the scope of integrated care services includes independence support care services as well as the interface with (but not the inclusion of) medical care. It also includes independence support care services in the community after medical (curative) care has been delivered by professionals.

[SOURCE: WHO Ageing and Health Technical Report, Vol.5[4]]

2.13
integrated health services
continuum of services that are managed and delivered at different levels and sites within the health system

Note 1 to entry: Care is provided according to the needs of the individual throughout the course of his/her life

Note 2 to entry: In this International Workshop Agreement, the scope of integrated health services includes health promotion services as well as the interface with medical services, but does not include medical (preventive and curative) services provided by professionals.

[SOURCE: WHO Ageing and Health Technical Report, Vol.5[4], modified]

2.14
integration
coherent set of methods and models, on the funding, administrative, organizational, service delivery and clinical levels, designed to create connectivity, alignment and collaboration within the health sector

[SOURCE: WHO Ageing and Health Technical Report, Vol.5[4]]

2.15
intrinsic capacity
composite of all the physical and mental capacities of an individual

[SOURCE: WHO World Report on Ageing and Health[5], modified]

2.16
lifestyle
set of habits and customs, influenced, modified, encouraged or constrained by the lifelong process of socialization, that carry health implications

[SOURCE: WHO Ageing and Health Technical Report, Vol.5[4], modified]

2.17
long-term care
range of health care, personal care and social services provided to individuals who, due to frailty or level of physical or intellectual disability, are no longer able to live independently

[SOURCE: WHO Ageing and Health Technical Report, Vol.5[4], modified]

2.18
personal care
assistance with functions and activities normally associated with body hygiene, nutrition, elimination, rest and walking, which enables an individual to live at home or in the community

[SOURCE: WHO Ageing and Health Technical Report, Vol.5[4], modified]

2.19
prevention
action aimed at promoting, preserving and restoring health when it is impaired and to minimize suffering and distress

[SOURCE: WHO Ageing and Health Technical Report, Vol.5[4], modified]

2.20
programme
organized collection of activities directed towards the attainment of defined objectives and targets which are progressively more specific than the goals to which they contribute

[SOURCE: WHO Ageing and Health Technical Report, Vol.5[4], modified]

2.21
provider
organization that provides a product or a service

EXAMPLE Producer, distributor, retailer or vendor of a product or a service.

Note 1 to entry: A provider can be internal or external to the organization.

Note 2 to entry: In a contractual situation, a provider is sometimes called “contractor”.

[SOURCE: ISO 9000:2015, 3.2.5]

2.22
quality of life
product of the balance between social, health, economic and environmental conditions which affect human and social development

Note 1 to entry: It is a broad-ranging concept, incorporating a person’s physical health, psychological state, level of independence, social relationships, personal beliefs and relationship to salient features in the environment.

[SOURCE: WHO Ageing and Health Technical Report, Vol.5[4], modified]

2.23
system
network of interdependent components that work together to attain the goals of the complex whole

[SOURCE: WHO Ageing and Health Technical Report, Vol.5[4]]

2.24
systemization
school of thought evolving from earlier systems analysis theory and advocating that virtually all outcomes are the result of systems rather than individuals

Note 1 to entry: It is characterized by attempts to improve the quality and/or efficiency of a process through improvements to the system.

Note 2 to entry: The term “systems approach” is also used.

[SOURCE: WHO Ageing and Health Technical Report, Vol.5[4], modified]

2.25
well-being
dynamic state of physical, mental and social wellness

Note 1 to entry: It is a way of life which equips the individual to realize the full potential of his/her capabilities and to overcome and compensate for weaknesses, and which recognizes the importance of nutrition, physical fitness, stress reduction and self-responsibility

Note 2 to entry: Well-being is viewed as the result of four key factors over which an individual has varying degrees of control: human biology, social and physical environment, health care organization (system) and lifestyle.

[SOURCE: WHO Ageing and Health Technical Report, Vol.5[4], modified]

3 Principles and social issues

3.1 Principles

3.1.1 General

Subclauses 3.1.2 to 3.1.6 provide guidance on five principles of solutions to health, care and social challenges related to aged society.

In order to establish aged societies where people are able to stay healthy and active for as long as possible and to continue to live in their communities with peace of mind and dignity, even when they become frail, multiple stakeholders of our society (states, local governments, non-profit organizations, enterprises and individuals) should adhere to the five principles described in 3.1.2 to 3.1.6.

3.1.2 Human dignity

Principle: Multiple stakeholders should hold firmly the principle of respect for human dignity throughout a person's life.

Dignity, the core value of human rights, is supported by an individual's independence and positive relationship with society. Although it is often overlooked due to the physical and mental changes that accompany ageing, the respect for dignity should be upheld throughout people's lives.

3.1.3 Productive ageing

Principle: Multiple stakeholders should adapt a productive ageing approach as the basis of their relevant activities.

All individuals should be enabled to pursue a healthy life for as long as possible, as well as the opportunities to work and to participate in social activities. At the same time, they should be able to endeavour to maintain productive relationships with the people around them regardless of frailty, while those people should also help to provide opportunities for them to continue to be productive.

3.1.4 Community-based services

Principle: Support and services such as health care, long-term care, preventive actions and support for activities of daily life, all of which are necessary for people to be able to fully experience productive ageing, should be rooted in communities to secure user accessibility and to enhance provider responsibility and coherence.

Support and services of this kind are meaningless unless they are easily accessible in daily life. Providers of the support and services should pursue active engagement with their stakeholders in communities.

3.1.5 Systemization with people at the centre

Principle: The support and services mentioned above should be person-centred and systemized so that they can be provided efficiently in a seamless and flexible manner in the community, with users of such services being at the centre of the system. Support and services should be flexible and adaptable to the varying needs during a person's life.

Support and services should not be provided in an uncoordinated and inflexible manner divided into speciality silos.

3.1.6 Pursuit of innovation for sustainability

Principle: Individual parts of systems and entire systems of support and services (mentioned previously) should both be improved by the pursuit of innovation based on evidence, including those from the salutogenic approach.

NOTE The salutogenic approach, introduced by Aaron Antonovsky, sees health as a movement in a continuum between total ill health and total health. It puts more importance on people's resources and capacity to create health than the classic focus on risks, ill health and disease. It focuses on the ability or "sense of coherence", composed of the elements of comprehension, manageability and meaningfulness, enabling the use of resources available to solve the problem. See Reference [6].

Health and care services and their systems should be continuously innovated to be more efficient and of better quality at all times in a sustainable manner, supported by new technology and scientific knowledge, as well as by social innovation, including behavioural changes not only of the aged but also of the younger generation.

3.2 Social issues

3.2.1 General

Subclauses 3.2.2 and 3.2.3 outline some of the aspirations for aged societies in the future. They also cover some of the challenges and barriers to meeting these aspirations that have been identified. They are based on research undertaken with carers, nurses and members of the general public in the UK during 2014, as part of a framework for standards to support innovation in long-term care (see Reference [7]).

3.2.2 Future provisions for aged societies

3.2.2.1 Common principles

This subclause outlines some of the aspirations for aged societies in the future.

There are common values for provision of products and services to aged societies, which are focused on providing health and social care needs in the home. Care and support should:

— be tailored to meet the realistic wishes of the recipient;

— be arranged in a timely manner;

— be provided in the home (where desired and if possible);

— provide flexibility over timings for receiving care services;

— be well coordinated by someone who knows the recipient and understands his/her needs;

— be delivered by a team that is trusted by the recipient.

Specific requirements for aged societies tend to increase as a person's physical and/or mental health declines. Keeping physically active and avoiding loneliness are fundamental aspects to ensuring well-being. Communities are an invaluable source of support as the health and care needs of an individual change. People need to be able to access medical and lifestyle services easily to ensure a continued positive outlook on life. As personal care requirements increase, the focus often moves towards accomplishing routine day-to-day living tasks in the home. With cognitive impairments, planning financial and personal security becomes a greater priority, along with the ever-changing contexts and technologies surrounding financial transactions and economic changes.

Changes in physical and/or mental capabilities are often predicted by key milestones that result in greater challenges, such as restrictions on mobility, memory loss or the death of a partner. An increase in single people (as opposed to couples) or single parent families may encourage greater independence

for individuals in the future, and people are now becoming more aware of the availability and choice of long-term care services in the home.

3.2.2.2 Medical needs

The medical needs of an individual are a physical and/or mental condition that requires attention from health care professionals and medical examination. Assessment of medical needs include the provision and review of medical prescriptions, examination and diagnosis, such as a comprehensive geriatric assessment (see Reference [8]). Management of medical problems in acute and chronic conditions are anticipated in a personal care plan managed by a multidisciplinary team and performed on the basis of evidence, clinical expertise and the client's values. Nursing and social care requirements may include administering medication at the right time and ensuring appropriate equipment and adaptations are in place.

NOTE In some countries, nurses and paramedics are qualified to perform medical procedures.

People should have opportunities to receive health and social care in settings beyond traditional surgeries, clinics and hospitals. These could include:

— "one-stop" health care centres that are open 24 hours every day of the week, with no waiting times and offering a full range of services;

— drop-in centres for health and other community services in shops and pharmacies;

— clinics in the high street or community centres;

— physiotherapists in leisure centres;

— service provisioning from a remote location;

— (where possible) services (e.g. podiatry, ophthalmology, dentistry and physiotherapy) in the home.

Aged societies should include support that is well coordinated across medically qualified professionals. Improvements will be required to services outside normal working hours, as well as a greater willingness of services to visit the home or other locations.

Systems for making medical appointments will need to become simpler and remote consultations (e.g. via Voice over Internet Protocol) will need to become routine. Health care professionals should be able to spend more time with individuals to assess and review their needs, wishes and aspirations. Consumers of health care services should be able to undertake regular reviews involving themselves, their family, medical and care professionals, in order to discuss their overall well-being and satisfaction.

3.2.2.3 Personal care

Personal care is related to the ability of a person to eat, dress, bathe, go to bed and get up, for example, either individually or with a third party, and the associated moving and lifting of people. It can apply in the home, in an institution or another location (e.g. on a holiday). Personal care needs to fit in with the cultural norms and attitudes of the family or community. An individual should always have a choice of carer and should expect consistency and competence.

In the future, there should be greater time provided for carers to spend with individuals, to manage their needs as defined by them, rather than being bound by the constraints of workload. There should be flexibility around the times of day for when tasks are carried out (e.g. bathing and eating at appropriate times). Housing should be developed and adapted so that it is easier to provide long-term care. Support and counselling should also be available to individuals and those close to them when the need arises. Digital technologies can play a part in providing services or requesting assistance.

People should be involved in early discussions about preferences for end-of-life care, including the option of living wills and spiritual support. Professional support should be provided by a consistent team that can work together. Greater support and counselling should be provided to all in the close

supportive network of the person who experienced a life changing event, e.g. spouses and offspring for a sustained period after a loved one has passed away.

3.2.2.4 Daily living tasks

Day-to-day living tasks include activities such as cooking, shopping, housework, laundry, gardening and transport. Suitable individuals and services need to be provided in order to allow these tasks to be carried out effectively.

Individuals and carers should not be time-pressured when undertaking these tasks. Where possible, the wider community could become involved in providing suitable services, and consideration may be given to the use of "time bank" models for providing care. An example of how such a model could be applied is if one member of the family volunteers for a certain number of hours of community work, which can include providing personal care duties, or leading an activity group based on the needs of the community. In return for these services, the same number of hours could be claimed back in care provided for other family members. This emphasizes the possibilities of communities to be more closely tailored to the needs of their population through mutual support and may also be adapted to cater for larger regions.

Private businesses should recognize the opportunity for individuals to outsource some of their daily living tasks (e.g. laundry services could be undertaken by supermarkets). Some tasks could be completed by electronic means, but any solutions considered would need to be cost-effective. Service providers should become more aware of the needs of aged societies and offer services that are specifically designed for older people. Communities should offer better transport options, including dedicated car parking spaces.

There are some daily tasks (e.g. gardening) that are considered important by people, but that are often seen as being less important in terms of overall care packages. These routine tasks should become available to those who want them.

3.2.2.5 Social inclusion

In order to combat loneliness, it is important to ensure the inclusion of individuals in appropriate exercise, leisure and spiritual activities that allow them to enjoy their life, as well as allowing them to give something back to the community if desired. Activities can involve befriending services and a role for people to support others across their community. Older people and their families see the value in paying for activities so that they enjoy life, but cost can sometimes be a barrier.

Aged societies include adults with a right to make their own choices for socializing and for leisure activities (rather than having certain activities forced on them). In the future, broader activities should become available so that there is something for everybody to enjoy. Leisure centres should run classes and programmes for different levels of fitness. For those unable or unwilling to participate, technology currently used by the digital gaming industry could provide a suitable alternative. Access to pets is also regarded as an important aspect of companionship.

It is important to provide companionship and to help people with all of their communication needs, from physical meetings to remote contact, both inside and outside the home. Family and friends are often the main source for this support, however, there is a wider role for the community. Businesses and professionals may need to encourage socializing aspects (e.g. by provision of suitable transport). Technology is seen by many people as an enabler to bring people together who want to be connected (e.g. video calls).

3.2.2.6 Keeping safe

Ensuring people are safe inside and outside the home is widely recognized as an important aspect of safeguarding an aged society against unusual, criminal or adverse events. This includes protection from violence, man-made incidences or natural disasters.

In the home, social alarms and closed-circuit television (CCTV) are well known and effective devices for monitoring and alerting for assistance, should an incident occur. However, these come at a cost, do not routinely work outside the home and can be set off in error. Some neighbourhoods provide schemes to prevent unwanted visitors coming to the doorstep, and to keep a watch on each other.

Outside the home, certain technologies have been applied to assist those with cognitive impairments, but these are not in mainstream use. Commercial organizations now train their staff to become more aware of societal issues, which demonstrates the start of a move towards tailoring services towards the needs of society.

In the future, digital technology could provide a way of integrating information from around the home, along with personal data (e.g. location) to ensure that a person is safe and secure.

3.2.3 Challenges and barriers to creating new approaches

3.2.3.1 Person-centred care provision

Challenges relating to the provision and delivery of services that are joined up and centred on the user include:

— achieving an early diagnosis (particularly where this can qualify a person for extra support);

— providing immediate access to new products and services, when a sudden deterioration in health is experienced;

— communication and sharing of information between different professionals and agencies.

One of the barriers to achieving this includes the fragmentation of different agencies and a protective attitude towards data sharing and communication. The loss of continuity between patients and trusted professionals, when they move to other jobs, also hinders good person-centred provision.

3.2.3.2 Education and training

One of the main challenges in providing high quality products and services to aged societies is having access to competent and motivated carers and support staff. The economics behind many services result in staff being employed on low wage contracts and in services not being available at the times they are needed. In many cases, training is carried out on the job, rather than as part of a formal programme.

It is important to educate older people on what to look for and to better manage health issues. Education on healthy ageing should be made available through a range of methods tailored to the needs of individuals, so that they can maintain their functional ability. Life-long care is a process that involves all age groups within a society.

3.2.3.3 Maintaining relationships and community involvement

The barriers to maintaining social relationships and involvement in the community can include:

— a lack of variety of suitable activities to suit all cultures, interest, levels of education and abilities;

— poor transport options and a lack of different environments that can be accessed;

— a lack of concessionary rates;

— a lack of facilitation to form new relationships;

— a lack of clarity in identifying suitable activities, particularly for those with cognitive impairments.

3.2.3.4 Developing the home environment

It is often difficult to adapt existing housing quickly when changes are needed due to the costs. Newly-built housing does not necessarily take into account the needs of older people, e.g. space to move around beds and suitable bathrooms. Some products could be better designed to ensure that they will be used by consumers. In some regions, retirement villages are built, but these are not always available. Newly developed housing facilities should provide a degree of adaptability to individual needs.

3.2.3.5 Interface with technology

While technology is seen as a benefit in many cases, it is not welcomed by everyone. A lack of user-friendliness, accessibility and reliability are the main challenges. End-user groups such as the elderly are often not involved in the development of the products and services they are intended to use. It is important that technology is seen as being complimentary and an enabler to interaction, and not as a replacement for it.

3.2.3.6 Economic aspects

People should be encouraged to plan ahead for their future needs, rather than waiting for a deterioration in their health and either being unwilling to seek assistance, or assuming that help would be provided automatically. This will help to reduce difficulties when there is a sudden change, and to allow for better outcomes. However, some people think there is often a lack of reward for those who have carefully planned their future, in comparison with those that have not, and this can cause resentment.

Systems and services need to be developed that are fair and affordable and that make sense to the people who use them. The service delivery and benefits of future planning need to be communicated effectively. Where funding is provided, it should allow users to freely select products and services that meet their needs rather than only allow access to a pre-established specification. Self-management of funding should be made as simple as possible for users in order to allow them to personalize their choices for care and services.

3.2.3.7 Societal attitudes

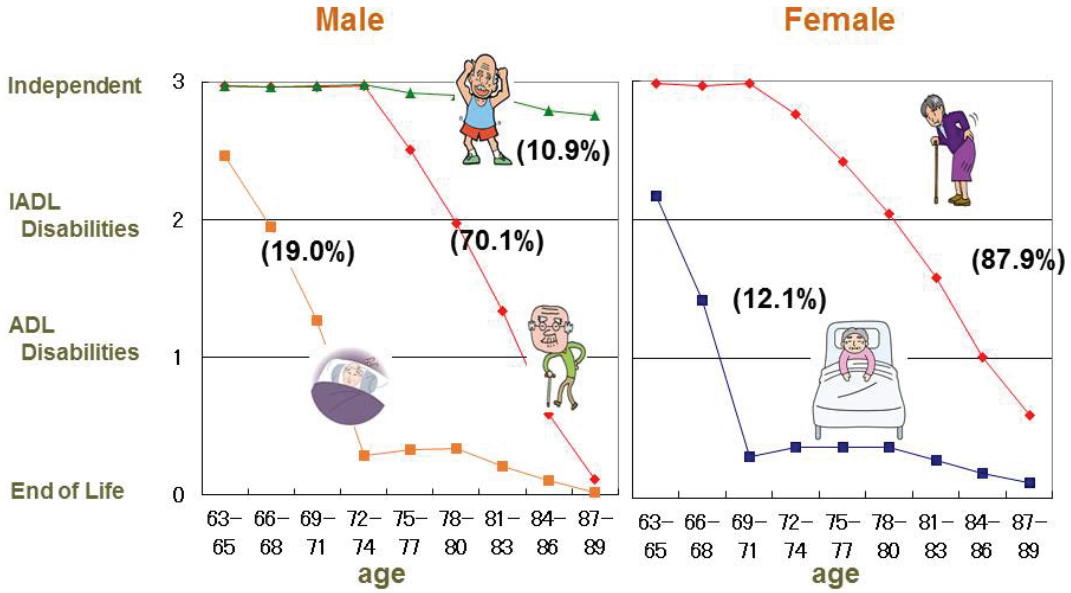
One of the key challenges to creating an effective aged society relates to building more caring and respectful attitudes within individuals and businesses. Families are not always available to provide support and other people (e.g. visiting neighbours) could provide more practical support, undertaking work experience or providing help with physically demanding tasks.

While individual professional carers are valued, there is a perception that some organizations only have an interest in making money. The perception of these organizations needs to be enhanced, in order to attract more high calibre and motivated people to work for them.

3.3 Basic approach

3.3.1 Health and care in relation to ageing

Physical ability declines as people age, as illustrated in Figure 1.



NOTE Image source: OECD *Ageing in Cities*[9] and Akiyama H. *Concept of Science and Society in Long Life Society*[10]. Reproduced with permission.

Figure 1 — Decline of physical ability among older people by age

The vertical scale of Figure 1 shows the level of independent living. A score of 3 is a state of being able to live independently. As scores drop to 2 or 1, the person's degree of independence declines and care becomes necessary. The horizontal scale is age. The definitions of instrumental activities of daily living (IADL) and activities of daily living (ADL) disabilities on the vertical scale are based on the following concept:

— IADL includes, for example, the use of transportation, answering the telephone, shopping (plus cooking, housekeeping, cleaning, medication management, monetary management);

— ADL includes the most basic human activities like walking and moving around, going up a few steps of stairs, bathing (plus eating, clothing, continence, grooming);

— IADL disability indicates the level where ADL can be carried out independently but assistance is needed with IADL;

— ADL disability indicates the level where assistance is needed with both ADL and IADL.

Independence levels can deteriorate due to diseases such as cerebral vascular illnesses, as well as due to the progress of age-related frailty. Figure 1 is the outcome of a panel survey of the daily lives of about 6,000 people aged 60 and above, selected randomly nationwide in Japan over a 20-year period between 1987 and 2006. 20 % of males either die of diseases or go into severe levels of long-term care before reaching 70 years of age. Frailty progress patterns differ slightly between men and women.

The survey also showed that females of all ages had a higher level of social activities in 1999 compared with 1987. Men, however, showed the reverse trend of becoming less social across all ages. With the baby-boomers entering their 60s, a great increase in elderly people living alone is expected, and the dilution of human bonds is a major concern. In total, 80 % of males and females start losing independence steadily from their mid-70s.

There are three major actions that need to be encouraged already (see Reference [11]):

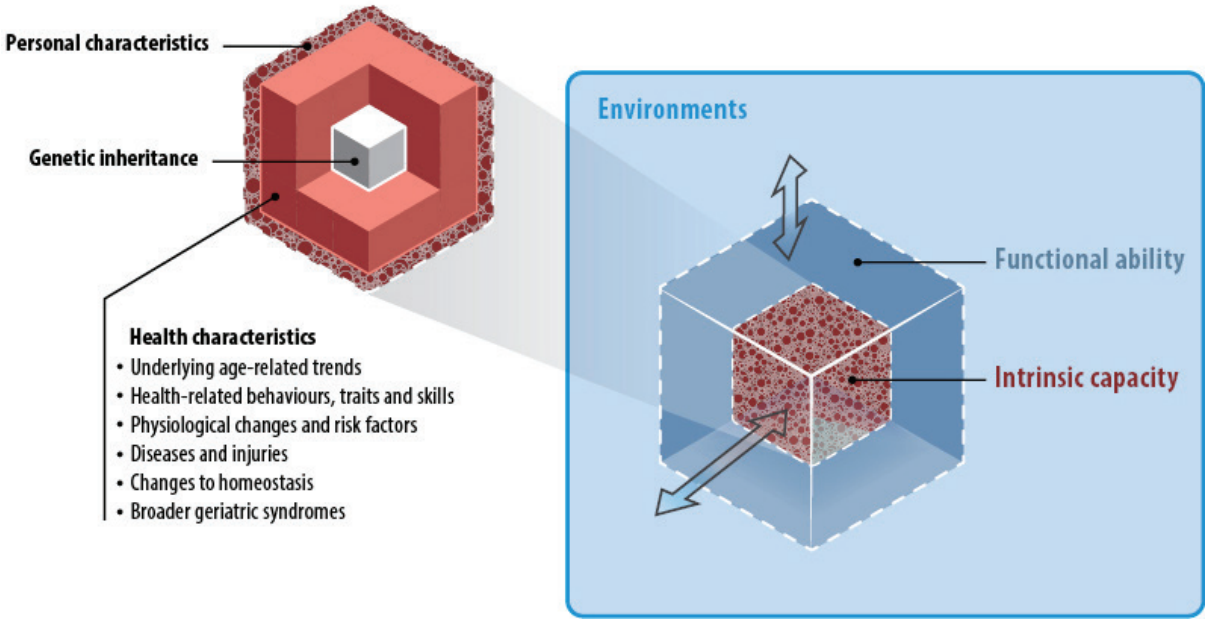
a) shift the starting age of deterioration forwards at least 2 or 3 years: the extension of healthy age and the independence period, enabled by physical and cognitive functions, benefits not only older people but the community and society as a whole;

b) create the right infrastructure for the "ageing of the aged population": as the increase of frail older people is inevitable, the social infrastructure to embrace and support them should be designed and constructed, including hard infrastructure (e.g. housing and transportation) and soft infrastructure (e.g. medical care, long-term care and pension systems);

c) implement measures to increase the connectivity within, and coherence of, the community where members of the post-retirement generation will spend the latter days of their lives.

3.3.2 Healthy ageing

Healthy ageing is the process of developing and maintaining the functional ability that enables well-being in older age, where the functional ability comprises health-related attributes that enable people to be and to do what they value. It is made up of an intrinsic capacity of the individual, relevant environmental characteristics and the interactions between the individual and these characteristics. Intrinsic capacity is a composite of all the physical and mental capacities of an individual. Environments include (from the micro- to the macro-level) components such as home, community, society, health and social policies, societal attitudes and values, systems that support people and the services provided to them. See Figure 2.



NOTE Image source: WHO *World Report on Ageing and Health*[5]. Reproduced with permission.

Figure 2 — Health systems and social care

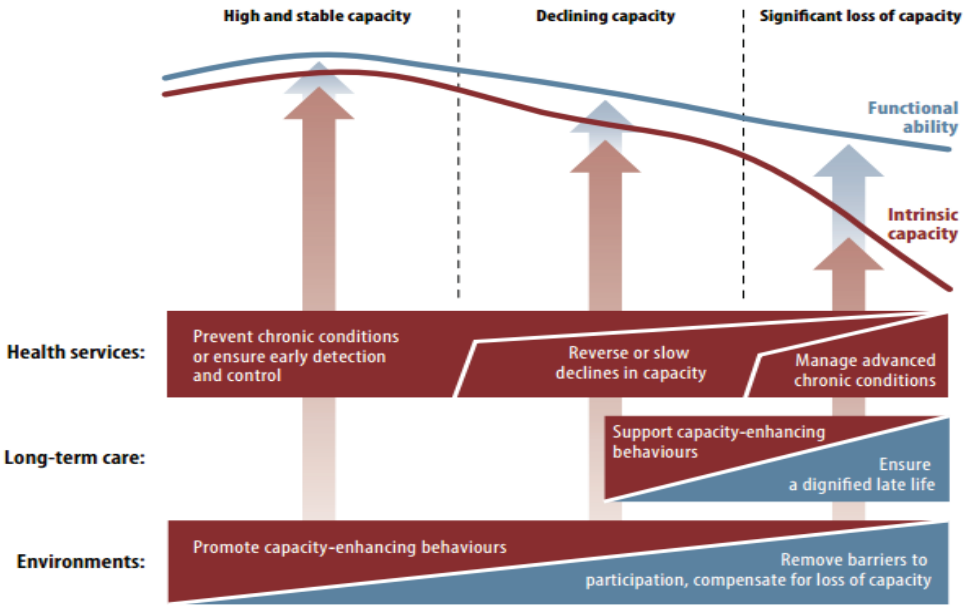
To realize the optimal trajectory of health, by developing and maintaining the functional ability based on the individual's intrinsic capacity, approaches need to be considered from three common periods:

— high and stable capacity;

— declining capacity;

— significant loss of capacity.

In each period of this continuum, supportive measures to help achieve this objective can be provided in three areas as shown in Figure 3 (health services, long-term care and environments).



NOTE Image source: WHO *World Report on Ageing and Health*[5]. Reproduced with permission.

Figure 3 — Opportunities for public-health action across the life course

3.3.3 Approaches to ageing, implementation and services

Promotion of health, prevention of diseases and frailty, and the degrees of providing care can be approached in four stages. Each stage has objectives that need to be achieved, with certain expected effects, and should have relevant international standards in line with established objectives. The four stages of approach are as follows:

a) health promotion and prevention of lifestyle diseases;

b) prevention of frailty;

c) care for assisting independence;

d) care for living in the community.

The objective of promoting health and preventing lifestyle diseases and frailty is to prolong healthy life expectancy and also to develop and maintain functional ability. It aims to enable people of all ages to live independently from care or hospitals. Its expected effects are the overall improvement of social efficiency, including the reduction of costs of medical and long-term care both for the individual and for the society.

The objective of providing care for assisting independence is to maintain functional ability, and its expected effect is the minimization of long-term care costs. The ultimate objective of providing care for living in the community is to improve the quality of life of older people. Its expected effect is the improvement of long-term care cost efficiency.

The matrix in Figure 1 illustrates the concepts described above.

Table 1 — Objectives and effects for the four stages of approach

Approach to ageing	Objectives	Effects
Health promotion and prevention of lifestyle diseases	Prolongation of healthy life expectancy [a]	Improvement of social efficiency and reduction of medical costs
Prevention of frailty (including dementia)	Prolongation of healthy life expectancy [a] Developing and maintaining the functional ability	Improvement of social efficiency and reduction of medical and long-term care costs
Independence support care (including dementia)	Developing and maintaining the functional ability	Improvement of long-term care cost efficiency
Long-term care in the community (including dementia)	Improvement of quality of life [b]	Improvement of long-term care cost efficiency

[a] Influencing factors include nutrition/malnutrition, injury prevention, physical activity, mental activity (life-long learning) and social connectedness (inclusion/participation).

[b] According to the definition of the World Health Organization Quality of Life (WHOQOL).

Each of the four stages of the approach can contain three levels of international standards:

— 1. social level;

— 2. projects level;

— 3. services and products level.

See Table 2, as well as the cube in Figure 5 and the matrix in Clause 4.

The services and products are delivered to facilitate implementation at project level through a well-supported and defined framework within a given social infrastructure.

Table 2 — Three levels of implementation in relation to four stages of approach to ageing

Approach to ageing	Related level		
	Social level	Projects level	Services and products level
Health promotion and prevention of lifestyle diseases	Community-based health support plan (see Example 1). See social levels in the matrix (Clause 4).	See the projects levels in the matrix (Clause 4)	See the services and projects levels in the matrix (Clause 4).
Prevention of frailty (including dementia)	Community-based health support plan (see Example 1). See social levels in the matrix (Clause 4).	See the projects levels in the matrix (Clause 4).	See the services and projects levels in the matrix (Clause 4).
Independence support care (including dementia)	Community-based care support plan (see Example 1). See social levels in the matrix (Clause 4).	See the projects levels in the matrix (Clause 4).	See the services and projects levels in the matrix (Clause 4).
Long-term care in the community (including dementia)	Community-based care support plan (see Example 1). See social levels in the matrix (Clause 4).	See the projects levels in the matrix. (Clause 4)	See the services and projects levels in the matrix (Clause 4).

On the social level (see Table 2) two categories of social plans need to be developed. The first category consists of two stages of community-based health support plans. The second category consists of two stages of community-based care support plans. See Example 1.

EXAMPLE 1 Community-based health support plan

In Japan, a variety of community-based project plans are built into the activities of local municipalities under the mandate of the Japanese government, including a health promotion plan, a data health plan, a long-term care insurance plan and an aged person's welfare plan. Japan's community-based integrated care system has been developed in order to group these plans in a bundle. The five components of Japan's community-based integrated care system are: health care, long-term care, prevention, housing and livelihood support services.

The social level is overseen mainly by municipal governments to provide health and care services needed in the communities. The projects level is carried out mainly by the multiple services providers based on the needs of the people in the communities. The services and products level is achieved by the specific services delivered to the people who are in need of them.

Integrated health services provide health checks and guidance, as well as health promotion services including social participation. Integrated care services provide independence/autonomy support and social care services in coordination with medical care services. To support these services, a social infrastructure system would provide the housing, community, economy, technology and innovation.

The holistic framework of services is shown in Clause 4. Its main service categories are health services, care services and social infrastructure. The framework itemizes services extensively (but is not exclusive) and it is able to develop continuously into the future. See Figure 4.

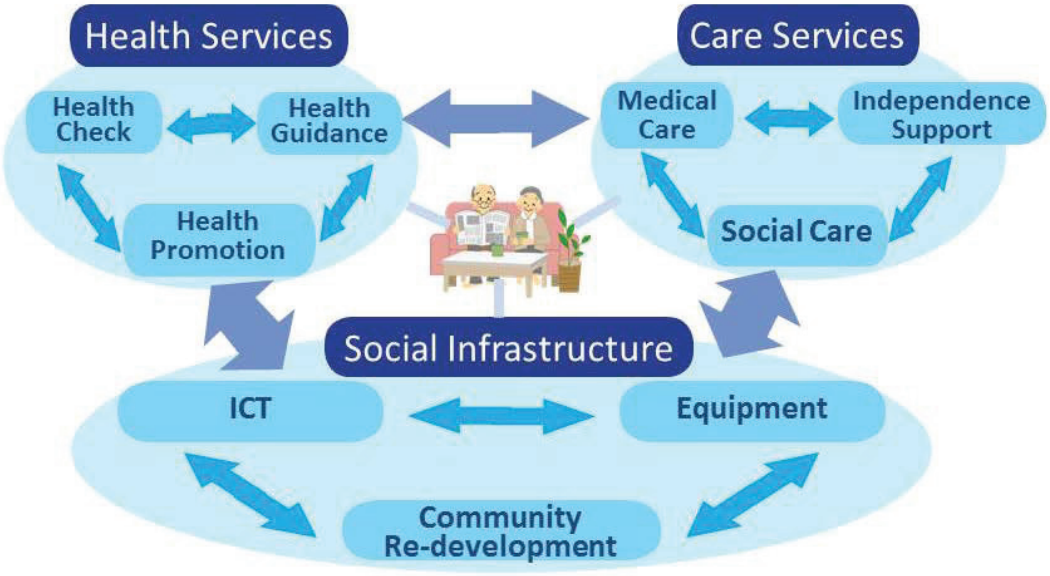


Figure 4 — Three genres of services: person-centred triangle

The cube in Figure 5 (comprising three levels by four stages by three genres) is a cabinet to organize the services (currently more than 40) listed in Clause 4. The services are a continuum that needs to be linked and integrated seamlessly to optimize efficiency and effectiveness.

In Figure 5, the three-level approach and four stages of ageing depicted on the top face and the side face of the cube, respectively, as well as the relationship between these two dimensions, are a graphic illustration of the content of Tables 1 and 2.

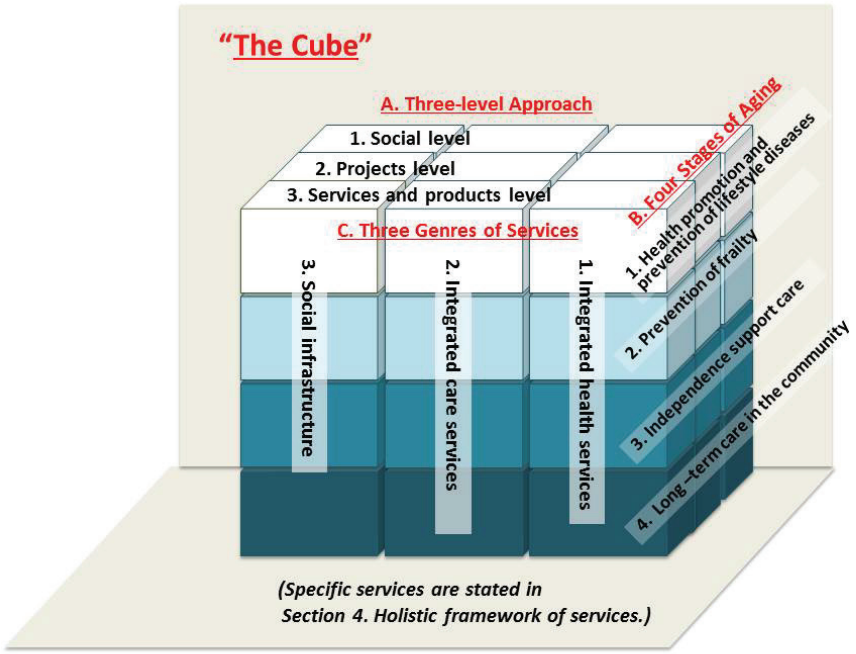


Figure 5 — The cube

3.3.4 Guidance for maintaining the quality of services

The following enable the quality of health and care services to be maintained and improved:

— upholding the overarching five principles;

— focusing on achieving the four objectives in Table 1;

— conducting the Plan-Do-Check-Act (PDCA) cycles at all three levels of implementation for innovation for sustainability.

With respect to the management of the health and care services system, three categories of standards need to be developed based on the three-step concept of the PDCA cycle:

a) standardization of specific activities such as criteria establishment (health screening criteria, frailty screening criteria, comprehensive geriatric assessment, evaluation criteria of long-term care) (see Example 2 and Table 3);

b) programme development (health promotion programme, independence support programme, long-term care programme);

c) assessment of the outcome by data utilization (health data, frailty data, ADL data, care data).

These standardization efforts are repeated in cycles of "criteria establishment - programme development – assessment - criteria review" along the lines of the PDCA cycle (see Table 4).

EXAMPLE 2 Evaluation of long-term care

In order to provide care efficiently and effectively to elderly people requiring long-term care, predetermined criteria need to be established, based on which the degree of necessary long-term care can be specifically measured and the amount and categories of appropriate long-term care to be provided can be judged.

In Japan, for example, each aged person in need of long-term care is officially evaluated on the basis a five-grade system authorized by the government, each grade indicating the total amount of long-term care within which necessary care services are appropriately mixed and provided. By using this kind of system, it is possible to measure the effect of provided care on the improvement of long-term care need. It also makes it possible to measure and quantify how much physical labour has been successfully substituted by information and communications technology (ICT) and/or robots developed and used for providing such care.

Table 3 gives an example of the criteria for long-term care levels as established by the Ministry of Health, Labour and Welfare in Japan, based on the "one-minute time study" method resulting from 48-hour observations of 3 500 patients in care-providing institutions.

Table 3 — Criteria for long-term care levels

Long-term care level	Criteria
Support required 1	Standard time required for long-term care assessed at 25 min or more, but less than 32 min, or equivalent
Support required 2	Standard time required for long-term care assessed at 32 min or more, but less than 50 min, or equivalent
Care level 1	Standard time required for long-term care assessed at 32 min or more, but less than 50 min, or equivalent
Care level 2	Standard time required for long-term care assessed at 50 min or more, but less than 70 min, or equivalent
Care level 3	Standard time required for long-term care assessed at 70 min or more, but less than 90 min, or equivalent
Care level 4	Standard time required for long-term care assessed at 90 min or more, but less than 110 min, or equivalent
Care level 5	Standard time required for long-term care assessed at 110 min or more

Table 4 — Four stages of approach to ageing and the criteria-programme-assessment cycle

Approach to ageing	Cycle		
	Criteria	Programme	Assessment
Health promotion and prevention of lifestyle diseases	Health screening criteria	Health promotion criteria	Outcome by data utilization (health data)
Prevention of frailty	Frailty screening criteria	Health promotion criteria	Outcome by data utilization (frailty data)
Independence support care	Evaluation criteria	Independence support programme	Outcome by data utilization (ADL data)
Long-term care in the community	Long-term care criteria	Long-term care programme	Outcome by data utilization (care data)

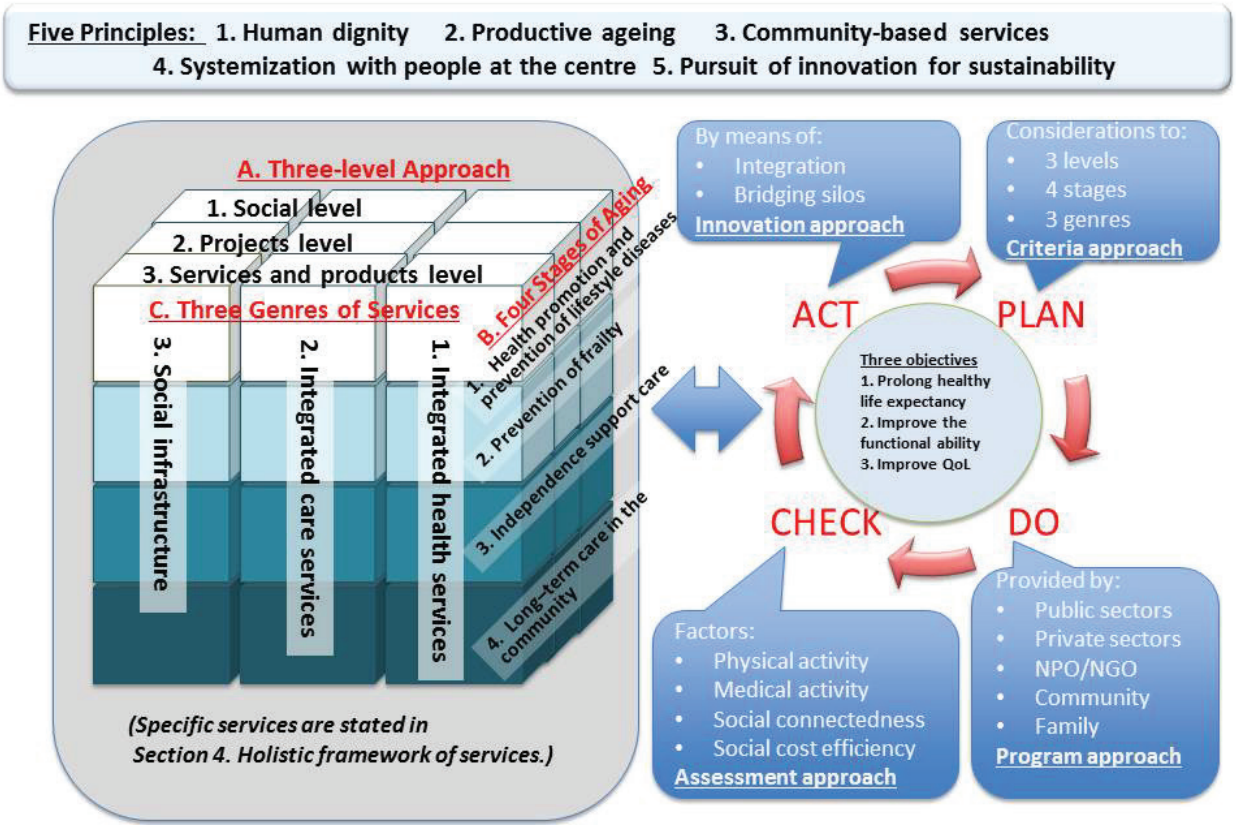


Figure 6 — The cube, the principles and the PDCA cycle

4 Holistic framework of services

4.1 General

In the delivery of holistic health and care services to any society, consideration should be given to the needs of individuals, as well as how the range of services are connected to each other. This framework includes a variety of services relevant to health and care in aged societies. It shows the diversity of service sectors involved, many of which will be catering to a wide range of age groups.

A non-exclusive list of services is given in 4.2, 4.3 and 4.4, as well as a matrix of the inter-relationship between specific services of the holistic framework of services and the three levels of approach and four stages of ageing.

4.2 Integrated health services

Integrated health services include the following:

— health check and guidance services;

— health check and guidance services on non-professional level;

— health check and guidance services by professionals;

— “data health” project;

— health guidance services based on health information;

— health care data trust services;

— health check devices;

— health promotion services;

— walking support services;

— sleep care services;

— exercise/fitness services;

— diet and dietary support services;

— oral care services;

— beauty services;

— tourism services;

— social participation;

— job matching, volunteer/part-time work;

— hobbies, community activities.

Table 5 provides a matrix of the inter-relationship between health check and guidance services and the three levels of approach and four stages of ageing.

Table 5 — Health check and guidance services

Level of approach	Stage of ageing	Health check and guidance services on non-professional level	Health check and guidance services by professionals	"Data health" project	Health guidance services based on health information	Health care data trust services	Health check devices
1 Social level	1 Prevention of lifestyle disease		•	•			
1 Social level	2 Prevention of frailty		•	•			
1 Social level	3 Independence support care			•			
1 Social level	4 Long-term care in the community			•			
2 Projects level	1 Prevention of lifestyle disease	•		•	•	•	
2 Projects level	2 Prevention of frailty	•		•	•	•	
2 Projects level	3 Independence support care			•		•	
2 Projects level	4 Long-term care in the community			•		•	
3 Services and products level	1 Prevention of lifestyle disease						•
3 Services and products level	2 Prevention of frailty						•
3 Services and products level	3 Independence support care						•
3 Services and products level	4 Long-term care in the community						•

Table 6 provides a matrix of the inter-relationship between health promotion services and the three levels of approach and four stages of ageing.

Table 6 — Health promotion services

Level of approach	Stage of ageing	Walking support services	Sleep care services	Exercise/ fitness services	Diet and dietary support services	Oral care services	Beauty services	Tourism services
1 Social level	1 Prevention of lifestyle disease							
1 Social level	2 Prevention of frailty							
1 Social level	3 Independence support care							
1 Social level	4 Long-term care in the community							
2 Projects level	1 Prevention of lifestyle disease							
2 Projects level	2 Prevention of frailty							
2 Projects level	3 Independence support care							
2 Projects level	4 Long-term care in the community							
3 Services and products level	1 Prevention of lifestyle disease	•		•	•			
3 Services and products level	2 Prevention of frailty	•	•	•	•	•	•	•
3 Services and products level	3 Independence support care	•	•	•	•	•	•	•
3 Services and products level	4 Long-term care in the community		•		•	•	•	

Table 7 provides a matrix of the inter-relationship between social participation and the three levels of approach and four stages of ageing.

Table 7 — Social participation

Level of approach	Stage of ageing	Job matching, volunteer/part-time work	Hobbies, community activities
1 Social level	1 Prevention of lifestyle disease		
1 Social level	2 Prevention of frailty	•	
1 Social level	3 Independence support care	•	
1 Social level	4 Long-term care in the community		
2 Business/project level	1 Prevention of lifestyle disease		
2 Business/project level	2 Prevention of frailty	•	•
2 Business/project level	3 Independence support care	•	•
2 Business/project level	4 Long-term care in the community		•
3 Services and products level	1 Prevention of lifestyle disease		

Table 7 *(continued)*

Level of approach	Stage of ageing	Job matching, volunteer/part-time work	Hobbies, community activities
3 Services and products level	2 Prevention of frailty		
3 Services and products level	3 Independence support care		
3 Services and products level	4 Long-term care in the community		

4.3 Integrated care services

Integrated care services include the following:

— independence support services;

— welfare equipment providing services;

— care/communication robots;

— home ICT;

— continence care services;

— toileting and bathing services;

— care foods and delivery services;

— living support services (watching, counselling, housekeeping, etc.);

— independence/rehabilitation assistance care services;

— guardian of adults;

— long-term care services;

— house visitation services;

— day services;

— short stay services;

— small-scale, multi-functional at home care services;

— periodic/on-going visits by a long-term care provider or nurse.

Table 8 provides a matrix of the inter-relationship between independence support services and the three levels of approach and four stages of ageing.

Table 8 — Independence support services

Level of approach	Stage of ageing	Welfare equipment providing services	Care/ communication robots	Home ICT	Continence care services	Toileting and bathing services	Care foods and delivery services	Living support services (watching/ counselling/ housekeeping)	Independence/ rehabilitation assistance care services	Guardian of adults
1 Social level	1 Prevention of lifestyle disease									
1 Social level	2 Prevention of frailty									
1 Social level	3 Independence support care									•
1 Social level	4 Long-term care in the community									•
2 Projects level	1 Prevention of lifestyle disease									
2 Projects level	2 Prevention of frailty			•						
2 Projects level	3 Independence support care	•		•		•		•		•
2 Projects level	4 Long-term care in the community	•		•		•		•		•
3 Services and products level	1 Prevention of lifestyle disease									
3 Services and products level	2 Prevention of frailty									
3 Services and products level	3 Independence support care		•		•		•		•	
3 Services and products level	4 Long-term care in the community		•		•		•		•	

Table 9 provides a matrix of the inter-relationship between long-term care services and the three levels of approach and four stages of ageing.

Table 9 — Long-term care services

Level of approach	Stage of ageing	House visitation services	Day services	Short stay services	Small-scale, multi-functional at home care services	Periodic/ ongoing visits by a long-term care provider or nurse
1 Social level	1 Prevention of lifestyle disease					
1 Social level	2 Prevention of frailty					
1 Social level	3 Independence support care					
1 Social level	4 Long-term care in the community					

Table 9 *(continued)*

Level of approach	Stage of ageing	House visitation services	Day services	Short stay services	Small-scale, multi-functional at home care services	Periodic/ ongoing visits by a long-term care provider or nurse
2 Business/ project level	1 Prevention of Lifestyle disease					
2 Business/ project level	2 Prevention of frailty					
2 Business/ project level	3 Independence support care				•	•
2 Business/ project level	4 Long-term care in the community				•	•
3 Services and products level	1 Prevention of lifestyle disease					
3 Services and products level	2 Prevention of frailty					
3 Services and products level	3 Independence support care	•	•	•		
3 Services and products level	4 Long-term care in the community	•	•	•		

4.4 Social infrastructure

Social infrastructure includes the following:

— risk management;

— insurance services (life insurance, long-term care insurance);

— financial services;

— housing;

— city planning and management;

— community coordination;

— ICT services;

— transportation support services;

— home delivery services;

— home security services;

— protection from fraud;

— fostering of experts and procuring of labour;

— social interaction services;

— community information services.

Tables 10 and 11 provide a matrix of the inter-relationship between social infrastructure and the three levels of approach and four stages of ageing.

Table 10 — Social infrastructure (1)

Level of approach	Stage of ageing	Risk management	Insurance services (life insurance, long-term care insurance)	Financial services	Housing
1 Social level	1 Prevention of life-style disease		•		
1 Social level	2 Prevention of frailty		•		
1 Social level	3 Independence support care		•		•
1 Social level	4 Long-term care in the community		•		•
2 Projects level	1 Prevention of life-style disease	•	•		
2 Projects level	2 Prevention of frailty	•	•		
2 Projects level	3 Independence support care	•	•		•
2 Projects level	4 Long-term care in the community	•	•		•
3 Services and products level	1 Prevention of life-style disease				
3 Services and products level	2 Prevention of frailty				
3 Services and products level	3 Independence support care			•	
3 Services and products level	4 Long-term care in the community			•	

Table 11 — Social infrastructure (2)

Level of approach	Stage of ageing	Transportation support services	Home delivery services	Home security services	Protection from fraud
1 Social level	1 Prevention of life-style disease				
1 Social level	2 Prevention of frailty				
1 Social level	3 Independence support care	•			•
1 Social level	4 Long-term care in the community	•			•
2 Business/project level	1 Prevention of life-style disease				
2 Business/project level	2 Prevention of frailty				
2 Business/project level	3 Independence support care	•			•
2 Business/project level	4 Long-term care in the community	•			•
3 Services and products level	1 Prevention of life-style disease				
3 Services and products level	2 Prevention of frailty				
3 Services and products level	3 Independence support care		•	•	
3 Services and products level	4 Long-term care in the Community		•	•	

5 Recommendations

It is intended that this International Workshop Agreement will be used as a basis for exploring further international standards development activities around the theme of integrated community-based life-long health and care services in aged societies. It is anticipated that these activities will involve the participation of national and international innovation bodies, product/services producers/providers, existing ISO and IEC technical committees that have developed related standards and healthcare professionals across participating countries, in collaboration with other international bodies that have an interest in aged societies, including WHO and OECD.

Annex A
(informative)

Workshop contributors

Name	Representation
Aisha Naseer	Fujitsu Laboratories of Europe Limited
Alex Ross	Director, WHO Centre for Health Development (WHO Kobe Centre)
Alexander Peine	Utrecht University
Alison Ingram	Age UK
Amanda Richardson	BSI (British Standards Institution)
Andy Morley	SW Digital Health Cluster and New Level Health Ltd
Anna Eldestrand	Swedish Standards Institute
Anne Livingstone	Global Community Resourcing Pty Ltd Australia
Anthony Ciccarello	Philips
Azusa Yano	Mitsui Sumitomo Insurance Co., Ltd.
Bert Mulder	Haagse Hogeschool eSociety
Billi Ryska	German Society for Orthopaedics and Trauma
Blandine Rougon-Sarlin	A 26 Architecture
Bo Hu	Fujitsu Laboratories of Europe
Carla Gomes	IPQ (Instituto Português da Qualidade)
Carolien Smits	Windesheim, Kenniscentrum Gezondheid and Welzijn
Cees van der Schans	Hanze Hogeschool
Chantal Erault	Ministry of Social Affairs, Health and Women's Rights (France)
Christophe Damian	A 26 Architecture
Dana Kissinger-Matray	ISO's Committee on Consumer Policy (COPOLCO)
Emelie Bratt	IWA Secretary
Filiz Kocyigit	ISO/TC 43 Acoustics; Atilim University
Fiona Taylor (Housing)	Longhurst Group
Fred te Riet	Espria Icare en Kicun Advies (Domotica)
Hazel Harper	Innovate UK, Independent Living Innovation Platform Programme Manager
Hideshige Hasegawa	JISC; JAHIS TC215WG1Expert
Hideto Takase	Kao Corporation
Hirokazu Okumura	University of Tokyo
Hiroshi Genda	Mitsui Sumitomo Insurance Co., Ltd.
Hiroshi Sasaki	IS-INOTEK
Hiroshi Sato	ISO/TC 159; National Institute of Advanced Industrial Science and Technology, Japan
Il Kon Kim	HoD of Korean National Body for TC215 Health informatics
Isao Endou	ISO/TC 268/SC 1 "Smart community infrastructures"
Jackie Marshall-Balloch	Innovate UK
Jacobijn Gussekloo	Leiden University Medical Centre
Jane Finnerty	The Society of Later Life Advisers (SOLLA)
Jan-Erik Nyberg	CEN/TC 431 Service Chain for Social Care Alarms; Swedish Consumers' Association
Jean Michel Hervouet	Hager Electro SAS
Jeremy Thorp	Health and Social Care Information Centre (HSCIC)
Johann Wilhelm Weidringer	German Society for Orthopaedics and Trauma
John Beard	World Health Organization (WHO)

Name	Representation
John Maingay	British Medical Association
Joon Hyun Song	South Korea
Jose ALCORTA	ISO (International Organization for Standardization)
José Arredondo	INN (Instituto Nacional De Normalizacion)
Julie Hunter	PAS 278 independent living
Junichiro Okata	Institute of Gerontology, The University of Tokyo
Kåre Hagen	Norwegian Social Research, Oslo and Akershus University College fort Applied Sciences
Karen Batt	Standards Australia
Kathryn Bloomfield	London Fire Brigade
Ken Tsugane	Hitachi Ltd
Kozue Nomura	BSI Group Japan K.K
Kunihiro Shiina	HIP, Mitsui Fudosan Co., Ltd.
Kyoko Okami	Kao Corporation
Lisa Spellman	ISO/TC215, Health informatics
Loic Garcon	World Health Organization Centre for Health in Development (WKC)
Luttervelt	wmo-raad Pijnacker-Nootdorp
Malcolm Fisk	Coventry University
Marcel Gielen	Mextal (TKH Care Solutions company)
Maria João Graca	Portuguese Institute for Quality (IPQ)
Mariana Soledad Funes	IRAM (Instituto Argentino de Normalización y Certificación)
Marlou Bijlsma	NEN (The Netherlands Standardization Institute)
Mary Lou PELAPRAT	ISO (International Organization for Standardization)
Maude Luherne	AGE Platform Europe
Melvin Reynolds	AMS Consulting
Michael Glickman	ISO/TC215, Health informatics
Michel Ballereau	Le Noble Age - France
Minkman	Vilans
Mitsuhiro Katashima	Kao Corporation
Motonori Sato	Totec Amenity Limited
Nancy Bestic	CSA Group (Canadian Standards Association)
Nick Guldemond	European EIP Active and Healthy Aging; University Medical Centre Utrecht, NEN (The Netherlands Standardization Institute)
Nobuyuki Takakura	Teijin Limited
Noriaki Sawa	NHS GP attending as an independent
Olof Nordangård	The Swedish Consumers' Association
Paul Laffin	British Medical Association
Per Kr Andersen	Norwegian Directorate of Health/SAGS-ABHS ad hoc Healthcare services
Pierre Sebellin	IEC SEG 3 Ambient Assisted Living (AAL)
Prof Takashi Matsuura	Kyoto University European Center
Rob Turpin	BSI (British Standards Institution)
Sabrina Pit	University Centre for Rural Health, University of Sydney, Lismore Australia
Sandra Feliciano	IPQ (Instituto Português da Qualidade)
Sartaj Singh	SCC (Standards Council of Canada)
Satoshi Aida	Toshiba Corporation Healthcare Company
Setsuko Saya	OECD (Organization for Economic Cooperation and Development)
Shahid Husain Sheikh	AGROSOL PAKISTAN
Shigeomi Suzuki	HIP (The Institute of Healthcare Innovation Project)
Shigeru Miyake	Hitachi Ltd
Shuichi Tsuchiya	HIP (The Institute of Healthcare Innovation Project)
Stefan Lundberg	Vårdförbundet, Swedish Association of Health Professionals

Name	Representation
Stephen Kay	ISO/TC 215/WG 1 Architecture, Frameworks and Models
Susan Harker	ISO/TC 159 Ergonomics
Takeshi Koizumi	Nichirei Corporation
Takuji Yasukawa	Kao Corporation
Tetsu Tsuji	HIP (The Institute of Healthcare Innovation Project)
Tetsuro Kamiya	HIP (The Institute of Healthcare Innovation Project)
Tohru Itukube	University of Tokyo
Toshihiko Miyajima	Institute of Gerontology, The University of Tokyo
Willeke van Staalduinen	Dutch Centre for Health Assets
Xavier Aumont	ARCHEAN Technologies
Yoshiaki Ichikawa	IWA Chairman
Yoshifumi Niki	Kao Corporation
Yoshio Izumi	BSI Group Japan K.K
Yoshio Nakamura	Saint-Care Holding Corporation
Yusuke Chiba	ISO (International Organization for Standardization)

Bibliography

[1] ISO 9000:2015, *Quality management systems — Fundamentals and vocabulary*

[2] ISO/TR 14639-2:2014, *Health informatics — Capacity-based eHealth architecture roadmap — Part 2: Architectural components and maturity model*

[3] UN DESA. *World Population Prospects*, United Nations, 2015. Available at: http://esa.un.org/unpd/wpp/

[4] *Ageing and Health Technical Report, Vol.5, A Glossary of Terms for Community Health Care and Services for Older Persons*, World Health Organization, 2004. Available at: http://www.who.int/kobe_centre/publications/Ageing_Tech_Report_5/en/

[5] *World Report on Ageing and Health*, World Health Organization, 2015. Available at: http://www.who.int/ageing/publications/world-report-2015/en/

[6] Lindström B., & Eriksson M. "Salutogenesis", Journal of Epidemiology and Community Health, 2005. Available at: http://jech.bmj.com/content/59/6/440.full

[7] *A Framework for standards to support innovation in Long Term Care*, BSI, 2014. Available at: http://www.bsigroup.com/LocalFiles/en-GB/standards/BSI-A-framework-for-standards-to-support-innovation-in-Long-Term-Care-UK-EN.pdf

[8] British Geriatrics Society. *Good Practice Guides*. Available at: http://www.bgs.org.uk/index.php/topresources/publicationfind/goodpractice/

[9] *Ageing in Cities*, Organization for Economic Cooperation and Development, 2015. Available at: http://www.keepeek.com/Digital-Asset-Management/oecd/urban-rural-and-regional-development/ageing-in-cities_9789264231160-en#page26

[10] Akiyama H. *Concept of Science and Society in Long Life Society*, "Science", Iwanami shoten, Tokyo, 2010

[11] Komiyama H. *Platinum Vision Handbook*, 2013

[12] UN DESA. *World Population Ageing*, United Nations, 2013. Available at: http://www.un.org/en/development/desa/population/publications/pdf/ageing/WorldPopulationAgeing2013.pdf

[13] *Healthy Ageing*, World Health Organization, 2015. Available at: http://www.euro.who.int/en/health-topics/Life-stages/healthy-ageing/healthy-ageing

[14] Huber M. How should we define health? BMJ. Available at, 2011https://www.researchgate.net/publication/51523299_How_should_we_define_health

[15] Huber M. *Towards a new, dynamic concept of health – its operationalisation and use in public health and healthcare, and in evaluating health effects of food*, 2014. Available at: http://www.nvag.nl/afbeeldingen/2014/Thesis%20Machteld%20Huber.pdf

This page deliberately left blank

This page deliberately left blank

British Standards Institution (BSI)

BSI is the national body responsible for preparing British Standards and other standards-related publications, information and services.

BSI is incorporated by Royal Charter. British Standards and other standardization products are published by BSI Standards Limited.

About us

We bring together business, industry, government, consumers, innovators and others to shape their combined experience and expertise into standards -based solutions.

The knowledge embodied in our standards has been carefully assembled in a dependable format and refined through our open consultation process. Organizations of all sizes and across all sectors choose standards to help them achieve their goals.

Information on standards

We can provide you with the knowledge that your organization needs to succeed. Find out more about British Standards by visiting our website at bsigroup.com/standards or contacting our Customer Services team or Knowledge Centre.

Buying standards

You can buy and download PDF versions of BSI publications, including British and adopted European and international standards, through our website at bsigroup.com/shop, where hard copies can also be purchased.

If you need international and foreign standards from other Standards Development Organizations, hard copies can be ordered from our Customer Services team.

Copyright in BSI publications

All the content in BSI publications, including British Standards, is the property of and copyrighted by BSI or some person or entity that owns copyright in the information used (such as the international standardization bodies) and has formally licensed such information to BSI for commercial publication and use.

Save for the provisions below, you may not transfer, share or disseminate any portion of the standard to any other person. You may not adapt, distribute, commercially exploit, or publicly display the standard or any portion thereof in any manner whatsoever without BSI's prior written consent.

Storing and using standards

Standards purchased in soft copy format:

- A British Standard purchased in soft copy format is licensed to a sole named user for personal or internal company use only.
- The standard may be stored on more than 1 device provided that it is accessible by the sole named user only and that only 1 copy is accessed at any one time.
- A single paper copy may be printed for personal or internal company use only.

Standards purchased in hard copy format:

- A British Standard purchased in hard copy format is for personal or internal company use only.
- It may not be further reproduced – in any format – to create an additional copy. This includes scanning of the document.

If you need more than 1 copy of the document, or if you wish to share the document on an internal network, you can save money by choosing a subscription product (see 'Subscriptions').

Reproducing extracts

For permission to reproduce content from BSI publications contact the BSI Copyright & Licensing team.

Subscriptions

Our range of subscription services are designed to make using standards easier for you. For further information on our subscription products go to bsigroup.com/subscriptions.

With **British Standards Online (BSOL)** you'll have instant access to over 55,000 British and adopted European and international standards from your desktop. It's available 24/7 and is refreshed daily so you'll always be up to date.

You can keep in touch with standards developments and receive substantial discounts on the purchase price of standards, both in single copy and subscription format, by becoming a **BSI Subscribing Member**.

PLUS is an updating service exclusive to BSI Subscribing Members. You will automatically receive the latest hard copy of your standards when they're revised or replaced.

To find out more about becoming a BSI Subscribing Member and the benefits of membership, please visit bsigroup.com/shop.

With a **Multi-User Network Licence (MUNL)** you are able to host standards publications on your intranet. Licences can cover as few or as many users as you wish. With updates supplied as soon as they're available, you can be sure your documentation is current. For further information, email subscriptions@bsigroup.com.

Revisions

Our British Standards and other publications are updated by amendment or revision.

We continually improve the quality of our products and services to benefit your business. If you find an inaccuracy or ambiguity within a British Standard or other BSI publication please inform the Knowledge Centre.

Useful Contacts

Customer Services
Tel: +44 345 086 9001
Email (orders): orders@bsigroup.com
Email (enquiries): cservices@bsigroup.com

Subscriptions
Tel: +44 345 086 9001
Email: subscriptions@bsigroup.com

Knowledge Centre
Tel: +44 20 8996 7004
Email: knowledgecentre@bsigroup.com

Copyright & Licensing
Tel: +44 20 8996 7070
Email: copyright@bsigroup.com

BSI Group Headquarters

389 Chiswick High Road London W4 4AL UK

bsi.