

Cost analysis between accessible and non-accessible housing and its relation with the cost of falls among Elderly People in Argentina

Authors: Architects Viviana Saez, Gisela Bogado, Silvina Vera, Eduardo Schmunis, Geriatrician Doctor Ricardo Blanco.

Collaborators: Martín Morgenstern, PhD in Economics, and Geriatrician Doctor Fernando Ciraco.

The ever growing number of Elderly People (EP) aged 60 or older in Argentina, together with a rising life expectancy, usually coexists with higher levels of disability and the possible appearance of resulting dependence. Also, 80-years + is the fastest-growing segment within this group.

Due to the aging population and a longer life expectancy, age-related health issues have become more and more frequent. Falls is one of the most frequent problems among the EP. (See Annex: ENCaVIAM 2012, Series Studies INDEC N°46). According to the World Health Organization, 70% of falls among EP take place at home.

Falls (predictable events in the life of EP), possible disabilities and dependences generate high costs in the healthcare subsystems (public, private and social security), and among the parties concerned and their family. One must bear in mind that, in most cases of disability -temporary or permanent- and dependence, at least one person of the household is dedicated to the care of the person who needs it. And most often, this care is provided by women.

The importance of falls stems from the consequences they generate:

Lesions, mild or severe. 84% of the falls produce hip fracture.

Hospitalization, with or without surgery.

– Disability, temporary or permanent.

– Immobility, partial or total.

– Rehabilitation treatment at physical and psychological level.

- Post-fall syndrome (fear of falling again).

– Lower mobility. Sedentary lifestyle.

– Loss of autonomy (capacity to decide for themselves).

– Decrease or loss of self-esteem.

- Depression and use of psychiatric drugs.

– Loss of family and social roles.

– Social exclusion.

– In some cases, sent to a Long Term Residence (LTR) due to the impossibility of providing home care.

- Finally, all these consequences generate high personal, psychological and financial costs to the EP, their family and society overall.

In Argentina, a percentage varying between 5% and 10% of homes in the social housing system is allotted to Persons with disabilities (PwD) and to EP who require Accessibility (1*); all are placed at ground floor level in housing developments or single family houses.

Most often, the final users of social homes lack the resources or future possibilities to make the necessary adjustments (such as are currently projected) in the face of disability and dependence. It has been observed that many of the people who live in the different types of social plans and housing have not and maybe will not be able to make changes in the place where they live for different socio-economic reasons that occur during their lifetime, a poverty-stricken environment, lack of replacement and improvements in the existing housing stock that lags behind demographic growth. For all these reasons, it is likely that they will grow old in these homes and, should disability appear, the possible dependence plus the impossibility of providing Accessibility or, at least, Practicability (2*) to their homes, will put them in a very difficult situation, with high cost to them and the healthcare subsystems in our country.

Noteworthy, the housing stock in Argentina stands out for its obsolescence and this, along with the intrinsic factors of aging, the causes and consequences of disability in all age groups, and the external factors –environmental and physical barriers (3*)- imply a high cost in the healthcare subsystems.

Furthermore, we know that even today, disability and poverty go hand in hand. And the risk of being poor in old age is high, especially in the case of women.

Persons 65 y.o. and older	65-69 y.o.	70-79 y.o.	80 y.o. and older	Total
Need help for personal care	48.221	142.037	185.000	375.258
% need help for care	5,4	9,6	30,9	12,7

Table: Source: Dr. Nélica Redondo, using the raw data base of the ECV-SIEMPRO, 2001.

These facts lead to analyzing why not all the houses are built with Accessibility or Practicability, since these characteristics could help avoid some very serious issues in the life of their residents, pave the way towards the autonomy and independence of the affected parties and reduce the burden of care for the family. Furthermore, it would help reduce the direct and indirect costs of home care (whether formal or informal). Given the importance of these problems, when referring to housing we mean not only social-interest homes -target topic of this research- but all

the housing to be built in Argentina, as disability and dependence are issues common to all age groups, with different incidence in each one.

Research objective: this research intends to compare, though in different situations, the costs of accessible and non-accessible housing with the costs produced by falls, disability and dependence. We have ascertained that practically all the social-interest homes built in Argentina in the past years are not accessible and hardly practicable, given their typological and building characteristics (except those that admit extension, although that doesn't necessarily make them accessible or practicable, much less their sanitary facilities.)

Research framework

1. - Legal framework at International Level

-2ª Asamblea Internacional sobre Envejecimiento, (World Assembly on Aging) Madrid 2002, that spoke about a Habitat tailored for Elderly People.

-Declaración de la Convención de los DDHH de las Personas con discapacidad (Statement of the Convention on Human Rights of Persons with Disabilities, 2008.

- Convención de los DDH de las Personas Mayores (Convention on the HRR of Elderly People), 2015.

- Convención sobre los Derechos de las Personas con discapacidad y su protocolo facultativo (Convention on the Rights of Persons with Disability and their mandatory protocol), approved by resolution of the UN General Assembly, on December 13, 2006

- Convención Interamericana sobre Derechos de las Personas Mayores (Inter-American Convention on the Rights of Elderly People). Approved June 15, 2015, during the 45th session of the OAS Assembly. Argentina adhered by law 27.360/17 and deposited its adhesion before the OAS in November of that same year.

2. - Legal Framework at National Level:

-Ley Nacional de Accesibilidad al medio físico para las Personas con discapacidad Nº 24.314/94 y Decreto Reglamentario 914/97 (National Law on Accessibility to the physical environment for Persons with disability Nº24.314/94 and Regulatory Decree 914/97)

- The Argentine Congress passes the Law 26.378 approving the Convention on Human Rights of Persons with Disability and their optional protocol. Passed May 21, 2008 and promulgated June 6, 2008.

–Guidelines for Accessibility to the physical environment for social housing and Accessibility to the urban environment /Department of Federal Planning, Public Investment and Services, 2004.

–Provision 34 of the Department of Housing and Urban Development / Ministry of Federal Planning, Public Investment and Services, File 8622/2005 of 14.9.2005, which says in its article 2: "Compliance to these guidelines will be mandatory for all works financed through the ongoing Federal Programs and those to be implemented in future". And Article 3 : "The Federal Housing Council is invited to promote their approval, so that compliance will be mandatory in all works financed by the National Housing Fund (FO.NA.VI)".

–Minimum quality standards for social-interest housing /review 2006 of the aforementioned Ministry. Annex X, page 45 specifically mentions “For the design of accessible urban areas and homes, the project architect must apply the Guidelines of Accessibility of the Department of Housing and Urban Design (SSDUV)”.

On the other hand, in the World Report on Aging and Health, the World Health Organization 2015 (page 39) states:

“Promote Aging in the community.

The impairment of abilities often forces elderly people to change their living environment, either making adjustments in their home or moving somewhere more favorable to their needs. On deciding where to live, elderly people often consider that their home or their community have the advantage of allowing them to keep a sense of bonding, security and familiarity, besides connecting them with their identity and autonomy.

In fact, the right of all people with some type of functional limitation to live and be included in the community is a core aspect in the *UN Convention on the Rights of Persons with Disability*.

Also, centers of institutional attention are sometimes considered dehumanizing and having structural and cultural obstacles that prevent social interaction.

Therefore, the most usual policy in relation to the aging population has been to foster what is known as *aging in the community where one has lived*, that is, that the elderly may have the possibility of living in their own home and community in a way that is safe, independent and comfortable, regardless of age, income or intrinsic ability. Generally speaking, this approach is considered better for the elderly, and may also have considerable financial advantages in terms of the expense in sanitary assistance.

Thanks to the new technologies —particularly those that foster communication and integration, offer learning opportunities, monitor and guarantee the safety of an elderly person— this objective may be easy to reach in the future.

Aging in the community can be encouraged even more through the creation of environments adapted to elderly people, enabling their mobility and participation in basic activities.

However, as with other policies that concern aging, it is not advisable to focus strictly on one solution for all the cases. For example, aging in the community cannot be the main objective for elderly people who live isolated, lack the attention they need, live in unsuitable homes or in unsafe or unfavorable neighborhoods.

Besides, it should not be considered as a policy that allows governments to simply reduce to a minimum the costs just because they don’t have to provide other more expensive options. In fact, it has been suggested that aging at home and in the community is feasible provided there is a team of care givers and proper medical attention.

Furthermore, elderly people usually have a nuanced and realistic view of the decisions they will have to make in relation to their home. The new forms of assisted living and residential attention are real alternatives to the stereotyped idea of having to choose between living at home or in a LTR. Thanks to these options, many elderly persons can lead their lives in ways that wouldn’t have been possible in their home community (4)”.

And further on, in page 145 of the WHO report 2015, it says:

“Promote aging in the right place.

As described in chapter 2, aging in the community where one has lived refers to a preference

shared by elderly people to stay in their local community and maintain their social networks during the aging process. There are many ways that elderly people can grow old in their community. For some, it means staying in the same place; in other words, continue living in the same house. For others, it means moving to a house that is safer and better fits their needs, without giving up their lifelong bonds with the community, family and friends. In all cases, it's about growing old in the right place. Aging in the right place may require different services and caregivers. Together, they can broaden the options so that the elderly are not forced to choose only between permanent care in a LTR or living at home without support of any kind".

In the same report, WHO 2015, on page 175, it says:

"The right to adequate housing

The right to adequate housing implies more than just four walls and a roof (article 11.1 of the International Covenant of Economic, Social and Cultural Rights).

It includes the right to safe housing and a community where it is possible to live in peace and with dignity. The right to adequate housing covers different concepts related to elderly people, as residences with the following characteristics:

- Ownership legally protected against forced eviction, harassment and other threats;
- Affordable enough, so that the costs don't jeopardize or compromise other basic needs of its occupants;
- Guaranteed access to safe drinking water, adequate sewage, waste disposal and power for cooking, heating and lighting purposes, and to preserve foods.
- Habitability, that is, guaranteeing physical safety, providing adequate space, protection against health threats and structural damage and located in areas that are not contaminated or dangerous;
- Guaranteed accessibility and usability, for example, bearing in mind declining abilities;
- Facilitate access to transportation, shopping, job opportunities, health care services, and other social services;
- Respectful of any expression of cultural identity".

Finally, along with the information of WHO 2015, we add to the same report (pages 182 and 183):

"Develop policies to broaden the options of adequate housing for elderly people. It is cheaper to build new housing with accessibility and more efficient energy usage than to modernize houses that already exist. In many countries, the laws and regulations that concern disability and accessibility claim the need to provide access to everyone.

Even though the renovation rates for the housing stock are low and the project of building new houses in the short term is not feasible, it is important to guarantee that state-supported housing is in line with the principles of Universal Design, offers efficient energy usage and uses the innovations in home design to fit the needs of people as they grow old. It is also possible to use construction codes that include accessible features to guarantee that the property developers of housing governed by market prices will build houses and refurbish existing ones in keeping with the needs of elderly people. Architects, constructors and urban planners should be aware of the importance of guaranteeing accessibility.

This is particularly important in large-scale urban renovation projects and during reconstruction in the aftermath of a disaster".

Research Development

We analyzed some of the projects of social-interest housing carried out by the governments of La Rioja and San Luis Provinces in the past four years. Also, before the research was conducted we were aware that, except for very few honorable exceptions, the majority of social-interest houses had been developed without accessibility.

A budget was calculated of the houses found in Internet as forming part of the social housing plans of La Rioja and San Luis Provinces, respecting their construction specifications and based on the prices of the month of June 2016, according to data of the magazine CLARIN Arq.

The starting point was the original typology of the houses, to make them accessible or practicable, with the prerequisite of making the lowest number possible of interventions. The next step after finishing this redesign process was to calculate the costs of the new designs, in order to compare costs between the accessible or practicable houses of this proposal and those lacking this characteristic.

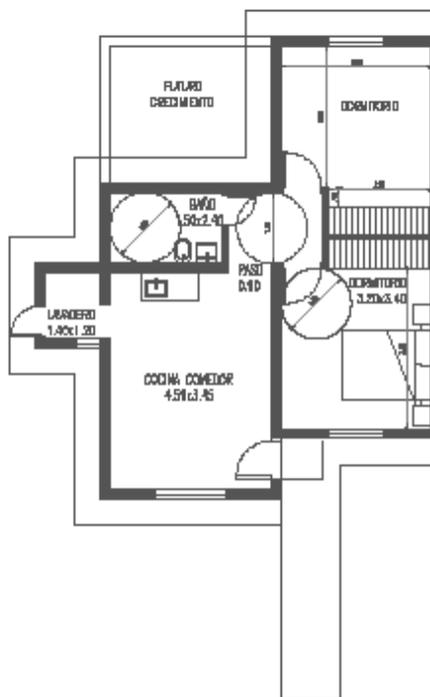
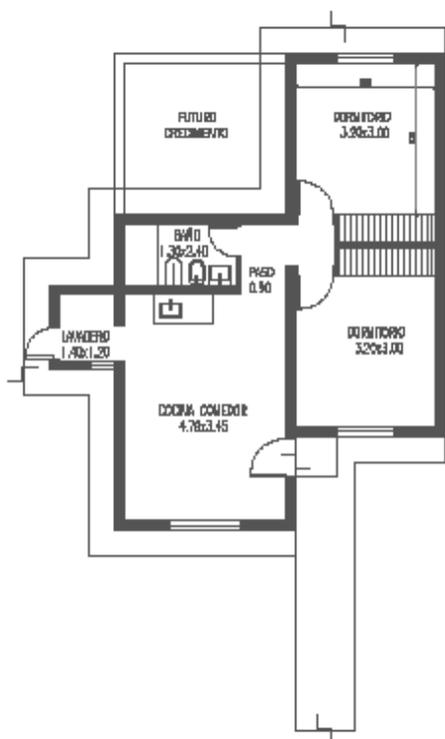
Proposal of modification providing accessibility to 2-bedroom houses in La Rioja, District 26 de Mayo, 2012.

NOT ACCESSIBLE

Square meters 53,62
 Total cost
 \$ 658.707,86
 Cost per square meter
 \$ 12.284,74

ACCESSIBLE

Square meters 56,60
 Total cost
 \$ 675.413,72
 Cost per square meter
 \$ 11.933,10



- Dormitorio:** Bedroom
- Futuro dormitorio:** Future bedroom
- Baño:** Bathroom
- Cocina-Comedor:** Kitchen diner
- Lavadero:** Laundry

It is verified that a 5.56% increase of surface is matched by a price rise of 2.54% \$ = \$ Argentine.
 Data base to determine costs for comparative purposes: Prices on June 26, 2016. Source: Clarín Arquitectura June 2016.-

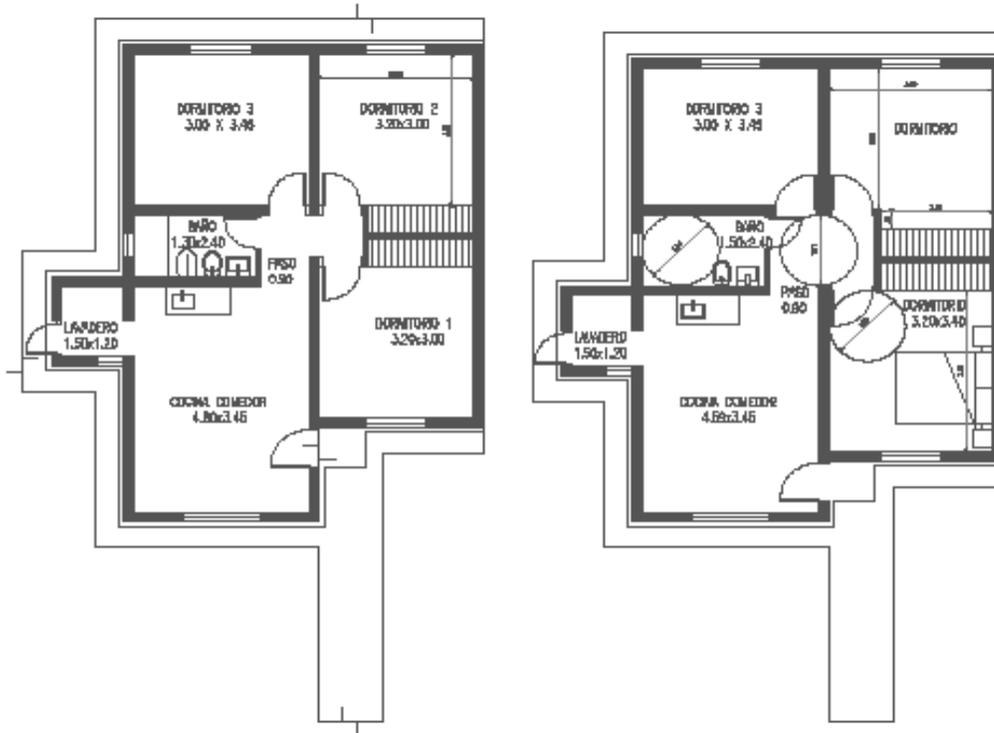
Proposal of modification to provide accessibility in 3-bedroom houses, in La Rioja, District 26 de Mayo, 2012.

NOT ACCESSIBLE

Square meters: 67,19
 Total cost
 \$ 825.220,45
 Cost per square meter
 \$ 12.281,89

ACCESSIBLE

Square meters: 71,04
 Total cost
 \$ 846.756,14
 Cost per square meter
 \$ 11.919,43



It is verified that a 5.73% increase of surface is matched by a price rise of 2.61% \$ = \$ Argentine.
 Data base to determine costs for comparative purposes: Prices on June 26, 2016. Source: Clarín Arquitectura June 2016.-

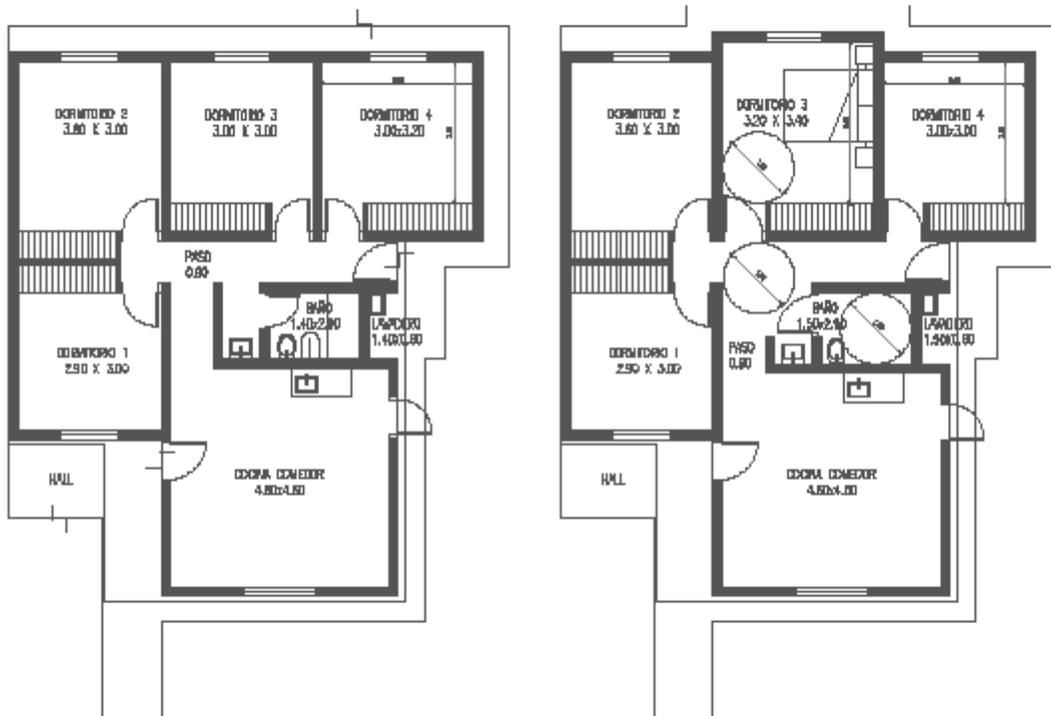
Proposal of modification providing accessibility in 4-bedroom houses, in La Rioja, District 26 de Mayo, 2012.

NOT ACCESSIBLE

Square meters: 91,77
 Total cost
 \$ 1.067.069,07
 Cost per square meter
 \$ 11.627,65

ACCESSIBLE

Square meters: 93,27
 Total cost
 \$ 1.077.953,11
 Cost per square meter
 \$ 11.557,34



It is verified that a 1.63% increase of surface is matched by a price rise of 1.02%. \$ = \$ Argentine.
 Data base to determine costs for comparative purposes: Prices on June 26, 2016. Source: Clarín Arquitectura June 2016.-

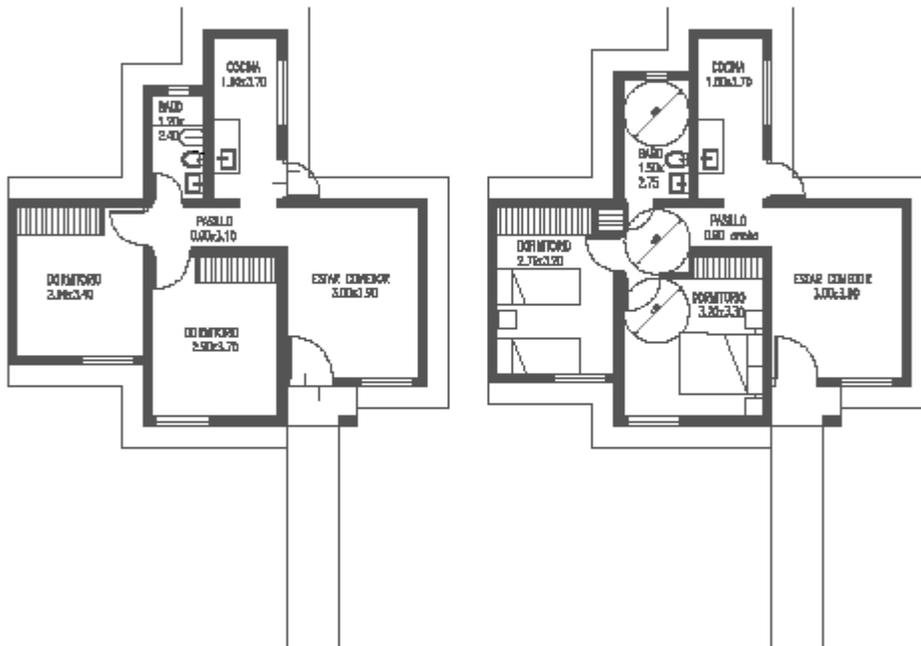
Proposal of modification providing accessibility in 2-bedroom houses in San Luis , 2012.

NOT ACCESSIBLE

Square meters: 53,57
Total cost
\$ 718.745,48
Cost per square meter
\$ 13.416,94

ACCESSIBLE

Square meters: 57,83
Total cost
\$ 744.452,18
Cost per square meter
\$ 12.873,11



**It is verified that a 7.95% increase of surface is matched by a price rise of 3.58%. \$ = \$ Argentine.
Data base to determine costs for comparative purposes: Prices on June 26, 2016. Source: Clarín Arquitectura June 2016.-**

DIFFERENCES IN COSTS PER SQUARE METER JUNE 2016

	Type	Surface		Total cost	Cost per M2	DIF M2		dif \$	Increase of surface %	Increase of cost %
San Luis	2-bedroom house					4.26	m2	\$25,706.70	7.95%	3,58%
	2-bedroom house	53,57	M2	\$ 718.745,48	\$ 13.416,94					
	2-bedroom house ACCESSIBLE	57,83	M2	\$ 744.452,18	\$ 12.873,11					
La Rioja	2-bedroom house					2.98	M2	\$16,705.86	5.56%	2,54%
	2-bedroom house	53,62	M2	\$ 658.707,86	\$ 12.284,74					
	2-bedroom house ACCESSIBLE	56,6	M2	\$ 675.413,72	\$ 11.933,10					
La Rioja	3-bedroom house					3,85	M2	\$21.535,69	5,73%	2,61%
	3-bedroom house	67,19	M2	\$ 825.220,45	\$ 12.281,89					
	3-bedroom house ACCESSIBLE	71,04	M2	\$ 846.756,14	\$ 11.919,43					
La Rioja	4-bedroom house					1,5	m2	\$10.884,04	1.63%	1.02%
	4-bedroom house	91,77	M2	\$ 1.067.069,07	\$ 11.627,65					
	4-bedroom house ACCESSIBLE	93,27	M2	\$ 1.077.953,11	\$ 11.557,34					

The value of these houses is determined by the price of building materials and labor cost according to data provided by Clarín Arquitectura of June 2016. \$ = \$ **argentine**.

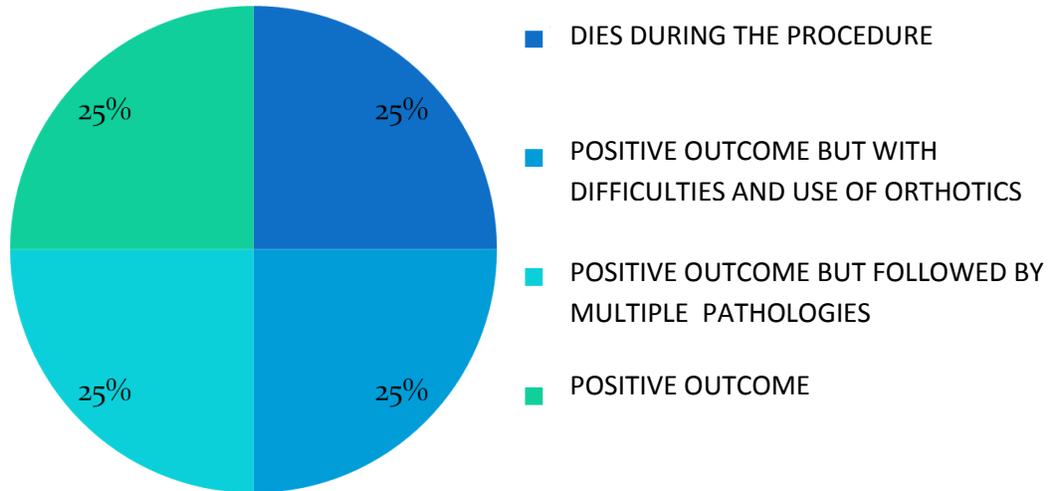
Neither the cost of presentations to the City Council nor the VAT were considered, as the objective of the analysis was to measure the incidence of the increase of surface in the building cost of an accessible house.

APPROXIMATE VALUES OF FRACTURES ATTENDED IN HOSPITALS AND SOCIAL SECURITY

\$ = \$ argentine, 2016.

	HIP		ANKLE	
Costs	\$ 84.100,00		\$ 71.100,00	
Replacement surgery		\$ 35.000,00		\$ 25.000,00
Prosthesis (national)		\$ 30.000,00		\$ 30.000,00
Hospitalization	X DAY	MINIMUM 3 DAYS	PER DAY	MINIMUM 2 DAYS
Hospital ward	\$ 2.870,00	\$ 8.610,00	\$ 2.870,00	\$ 5.700,00
Intensive Care	\$ 3.930,00	\$ 11.700,00	\$ 3.930,00	\$ 7.860,00
Treatment				
Hospital Ward		\$ 73.610,00		\$ 60.700,00
Intensive Care		\$ 76.700,00		\$ 62.860,00
Average		\$ 75.000,00		\$ 62.000,00
Rehabilitation				
40 sessions	\$ 200,00	\$ 8.000,00	\$ 200,00	\$ 8.000,00
Medication				
Antibiotics, analgesics, anti-inflammatory drugs		\$ 1.100,00		\$ 1.100,00

APPROXIMATE PERCENTAGES OF OUTCOMES OF FRACTURES ATTENDED IN HOSPITALS AND SOCIAL SECURITY



According to the Resolution 2001-E/2016 of the National Health Ministry dated 11/11/2016, the values effective as from July 1, 2016, for the Basic Benefits for Persons with disabilities varied between the following amounts:

<u>Module</u>		<u>Values as from</u> <u>01/07/2016</u>		
		Cat. A	Cat. B	Cat. C
DAY CARE CENTER – FULL DAY	Monthly	\$ 16.745,08	\$ 14.064,49	\$ 10.709,25
DAY CARE CENTER – HALF DAY	Monthly	\$ 11.143,19	\$ 9.376,33	\$ 7.144,41
NURSING HOME - PERMANENT	Monthly	\$ 19.910,36	\$ 16.718,88	\$ 13.296,50
NURSING HOME MONDAY-FRIDAY	Monthly	\$ 15.878,84	\$ 13.345,63	\$ 10.630,65
NURSING HOME WITH DC MONDAY-FRIDAY	Monthly	\$ 22.897,16	\$ 19.235,71	\$ 15.336,83
NURSING HOME WITH CET MONDAY-FRIDAY	Monthly	\$ 25.242,06	\$ 21.194,16	\$ 16.158,85
NURSING HOME WITH DC PERMANENT	Monthly	\$ 28.122,43	\$ 23.630,76	\$ 17.986,30
NURSING HOME WITH CET PERMANENT	Monthly	\$ 31.115,78	\$ 26.147,60	\$ 20.206,75
SMALL NURSING HOME MONDAY-FRIDAY	Monthly	\$ 14.922,54	\$ 12.546,53	\$ 11.546,01
SMALL NURSING HOME PERMANENT	Monthly	\$ 18.408,78	\$ 14.744,05	\$ 14.441,11

RESIDENCE MONDAY-FRIDAY	Monthly	\$ 15.030,61	\$ 12.492,49	\$ 11.546,01
RESIDENCE PERMANENT	Monthly	\$ 18.598,73	\$ 15.620,11	\$ 14.441,11
REHABILITACIÓN – COMPREHENSIVE MODULE - INTENSIVE	Weekly	\$ 2.777,20		
REHABILITACIÓN – COMPREHENSIVE MODULE - SIMPLE	Weekly	\$ 1.729,20		
REHABILITACIÓN – DAY CLINIC HALF DAY SIMPLE	Monthly	\$ 11.842,40		
REHABILITACIÓN – DAY CLINIC FULL DAY	Monthly	\$ 16.581,33		
REHABILITACIÓN - HOSPITALIZATION	Monthly	\$ 62.880,00		

An additional TWENTY PERCENT (20%) on the basic fee (for unfavorable area) is applied to services provided in the Patagonian area.

IOMA, the Social Health system for Buenos Aires Province, pays home caregivers of the 4th category (5) according to Resolution 30.6.2016 of the Ministry of Labor, Employment and Social Security, National Committee of Employment in Private Households, in joint agreement with UCACP (Private Care Workers Association), as from the 1st of June 2016, the following amounts:
 Live-in worker, for 8-hour workday.....\$ 7.030,50 Annualized value: \$ 91.396,50.-
 Live-out worker, for 8-hour workday....\$ 7.835,50 Annualized value: \$ 101.861,50.-
 In Neuquén, Río Negro, Chubut, Santa Cruz and Tierra del Fuego provinces, an additional 15% is added to the abovementioned amounts.

Background references: the cost of housing in relation to surface has been addressed in two relevant and interesting studies in our country: one written by Arch. Cónsoli de Recabarren, “Relación de costo y superficie. Estudio económico de la vivienda unifamiliar de interés social” (“Cost-surface relation. Economic survey of social-interest single-family housing”) published in the Architecture Magazine SUMMA, July 1978 and the other by Eng. José Luis Mascaró, published by the National University of La Plata (1983).

Furthermore, there are Finnish, French and English studies on high-rise buildings, claiming that the cost increases by only a 5% or 6% when the total surface increases by a 10%. The size of the facilities is a very important factor of satisfaction or dissatisfaction among the residents, regardless of the existence or not of overcrowding. Recently, a project of accessible housing was developed by the Housing Institute of Corrientes Province (INVICO), in 2017.

Individual findings: our conclusion in the case of housing analyzed in La Rioja Province, particularly 3-bedroom houses, is that the cost of 100 non-accessible units (\$ 82.522.045.-) covers the building cost of 97 accessible or practicable units (\$ 82.522.045.-).

Given the advantages of accessible or practicable housing, we consider that developing 3% fewer units in a housing plan is not a value significant enough to justify not building them. The difference of unit cost between an accessible or practicable house with one that isn't, is of \$ 21.535,69.-

Dividing this amount by 300 months (25 years multiplied by 12 months), the result is an incidence of \$71,78/monthly in constant currency. The differential percentages of costs between one type of housing and the rest are not significant considering the scale of the projects under way.

Quite obviously, any cost produced by falls, disability, dependence, home care, etc., is far superior to the abovementioned building costs.

General findings:

- This study proves that it is possible to achieve wellbeing with Accessibility with a very small difference in costs.
- Thus, it is proven that the increase of surfaces and costs are not directly proportional.
- The inner space of a house -determined by the measurement of its surfaces-plus features that comply with the basic requirements of accessibility or practicability, like spaces wide enough to allow moving around with wheelchairs; nonskid, opaque flooring with no level differences; even lighting - are fundamental to guarantee physical and psychological safety.
- In order to gain accessibility and adapt the spaces to new needs, - for example, the bathrooms in the accessible or practicable projects we presented still had a bathtub and bidet- the bathroom should be big enough for entering and turning around with a wheelchair once those fixtures were removed, making safe usage of shower and W.C.

NOTES:

(1)Accessibility: is the characteristic of a space (built or not) or means of transport that enables any person, regardless of age, gender and physical or mental condition, to carry out all their activities and needs with total self-confidence , developing their autonomy and independence.

(2)Practicability: it's a degree less than Accessibility. In the case of housing, it admits premises that may not be accessible but can be modified or adjusted to provide the highest level of accessibility possible.

(3) Physical barriers: those that hinder or are an obstacle to reach Accessibility. They are:
1°.architectural barriers; 2°.urban planning barriers; 3°.transportation barriers and
4°.communication barriers (verbal or non verbal).

(4) "Aging in Place". John E. Morley, Division of Geriatric Medicine, Saint Louis University School of Medicine, Saint Louis, Missouri. Journal of the American Medical Directors Association, Vol.16, Issue 6, June 11, 2012.

(5) 4th. category: assistance and care of people: it applies to the non-therapeutic assistance and care of people such as persons who are sick, have a disability, children, teenagers and seniors.

ANNEX I

National Survey on the life quality of elderly people ENCaVIAM 2012, Series Studies INDEC N°46

5.1.4. Falls

Falls frequently occur at an advanced age, and often come together with fractures. Consequences among seniors can be severe, causing different degrees of functional impairment (23). The risks in this population are high. This is partly due to the physical, sensory and cognitive disorders related to aging, as well as to the lack of adjustments in the environment to fit the needs of old age(24). 32% of the interviewed elderly persons had suffered falls in the past two years, and more than half of that total (56%) fell more than once.

The highest percentage of falls occurs in the oldest age group. 40% of persons aged 75+ had suffered at least one fall in the past two years.

Although women are more prone to suffering falls than men (of the total number of women, four out of every ten suffered a fall in the past two years, whereas the proportion among men was two out of every ten), the gap gets smaller as age increases.

Table 16. Population aged 60+ by age group and sex, according to the occurrence of falls in the past two years. Total at national level. Year 2012

<u>Age group and sex</u>	<u>Occurrence of falls in the past two years</u>	
	<u>YES</u>	<u>NO</u>
Total 60 y.o. and older	31.9	68.1
Men	21.6	78.4
Women	39.6	60.4
Total 60-74 y.o.	28.4	71.6
Men	19.1	80.9
Women	36.1	63.9
Total 75 y.o. and older	40.3	59.7
Men	29.0	71.0
Women	47.1	52.9

Source: National Survey on the Life Quality of Elderly People 2012 (ENCaVIAM 2012)

Of those who suffered falls in the past two years, half (49.2%) had bone fracture as consequence. The incidence of fractures increases with age:

46% of persons 60-74 years old and 57% among persons over 75. In the younger age group we observe no relevant differences as regards sex in the occurrence of fractures. This situation

changes significantly in the older segment: fractures occur in 29% of men aged 75 and older, whereas this percentage reaches a 63% of the women in this same age group.

5.1.7. Dependence

When one discusses health and wellbeing in elderly people, the socio-functional age prevails as one of the most relevant paradigms.

Two differentiated stages appear: the first is mainly determined by the exit from the labor market; the second is defined by the decline of health conditions, greater dependence and lower functional autonomy (28).

In order to operationalize the level of dependence, one evaluates the individual's capacity to carry out daily life activities. Functional evaluation is divided in basic and instrumental. The first refers to the elderly persons' possibility to move around on their own in their room or home, perform daily activities such as eating, bathing or getting dressed. The other, i.e. instrumental functionality, refers to carrying out activities of greater complexity, such as using money, shopping, cooking or administering their medicines, all necessary to lead an independent life (29).

Around 10% of elderly people have basic dependence. As age increases, the elderly population becomes more dependent in this type of activities –practically quadruples - with 5% in the 60-74 age group and 21% among the 75+.

The dependence for basic daily activities is predominant among women. Women with basic dependence double the amount of men in all age groups.

The task of helping persons with any basic dependence is mostly up to someone in the family (77.4%). To a lesser extent, it is carried out by a domestic helper or non-specialized caregiver (12.2%), a friend or neighbor (5.5%) or specialized caregiver (3.5%). However, there are differences according to age. In the younger segment of the elderly group (60-74 y.o.) with basic dependences, the help provided by the family environment holds the highest predominance (85.6%) followed by friends and neighbors (7%). Among the oldest (aged 75 and older) there is a higher presence of domestic helpers (16%) and specialized caregivers (4.7%).

As regards instrumental dependence, 22% of the interviewed elderly persons present at least one of these limitations. 13% need assistance with shopping, 12% with the household chores and 11% to travel in public means of transport, taxi or personal car.

Women hold a higher relative presence in this type of dependence.

Instrumental dependence also grows with age. Whereas it reaches 14% of the interviewees aged 60-74 years old, it triples among those aged 75 and older, reaching 41% of the oldest members of the segment.

Although this increase involves both men and women, the sex-based differences grow with age. Among the elderly people aged 60-74, the gap between men and women is smaller, whereas in the older segment women clearly hold the highest levels in this indicator, maybe due to their higher survival rate -around 50% of women vs. 28% of men-.

With respect to the providers of the assistance the elderly receive in their limitations with instrumental activities, the family members are mostly in charge, in all age groups -almost 80%-, followed by non-specialized caregivers or domestic help, with 16.3%.

A 91% of the elderly persons regularly leave home, with slight over-representation of the male sector. As age increases, outings diminish: 16% of persons aged 75 or older stay at home, with a predominance of the female sector.

ANNEX II

Healthy Life Expectancy in Argentina 201.0 / National Health Ministry

1.3. Healthy Life Expectancy Life expectancy at birth is a general indicator that provides information on the mortality rate of a population regardless of age structures. For this reason, it has been the measure most used so far to make comparative analyses of the global health of the populations involved. However, as mortality migrated to advanced age and the leading role was assumed by morbidity due to chronic non-communicable diseases, life expectancy at birth became insufficient to assess the global health status of the populations, which could suffer during long periods the consequences of disabling diseases acquired earlier on.

The recommendations of the World Health Organization (WHO) promote the development and use of Healthy Life Expectancy (HALE) to follow up its health strategy at universal level.

Summarizing, HALE (a.k.a. life expectancy free of disability (LEFD) or life expectancy free of permanent limitations (LEFPL)) can be defined as the average years of life that an individual can expect to live in “good health” within a certain population, moment and age, in a context of unchanging mortality rates and prevalence of chronic diseases, permanent limitations or disabilities (or of self-perceived health) by ages that one can observe in that population. In this scenario, “good health” is understood as the absence or non-significant presence of one or more pathologies/ limitations.

These indicators divide total life expectancy in average years to live in different health status, adding the dimension of quality to the expected number of years (Goerlich and Pinilla, 2009). Therefore, if a population’s healthy life expectancy grows quicker than total life expectancy, that population not only increases its longevity but also improves its health status.

As from the 1990’s, the countries with aged populations began to gather health-related data by applying sets of specific questions in censuses and surveys of statistics systems at both national and supranational level; in the middle of that decade began the serial production of the indicator, which is created by applying the method developed by Sullivan (1971) (Mathers et al., 1999).

Notwithstanding the limitations of the indicator proposed by Sullivan, due to its difficulty in grasping the complexity of the interactions between the individual life cycle, the cohort effect and the changes in incidence and recovery of the morbidities in a given population (Crimmis et al., 2009), the development of complex indicators requires the availability of morbidity data obtained through longitudinal studies which the majority of countries don’t carry out due to their high cost. Authors like Mathers and Robine (1997) studied the possible bias in the estimation of HALE when using the Sullivan method –or of multiple reduction -, concluding that the difference observed in relatively stable contexts is very small. All these reasons explain the widespread use of the Sullivan method for estimating HALE.

CHAPTER 6. CONCLUSIONS AND DISCUSSION

In this research, the Sullivan method was applied to two sources of data of the national statistics system of Argentina: a) the 2010 Census and b) the National Survey of Risk Factors 2009 (ENFR 2009). In the case of the Census 2010, it was possible to carry out the comparative analysis of all

the Argentinian provinces; however, the ENFR 2009 study was limited to the total number of urban clusters included in the survey, which means that the calculated indicators correspond to the total urban population of the country. Even though the ENFR 2009 admits disaggregation at regional level, the comparative study of chronic morbidity in the different regions nationwide exceeded the framework of this research. Each of the studies yielded findings that deserve to be analyzed separately.

6.1. The polarized epidemiological transition in Argentina according to the Census 2010

The Sullivan method applied to the census data is potentially useful as it allows making a comparative analysis between the jurisdictions around the country. As mentioned previously, when using subjective morbidity data, the method's weakest point is neutralized when one considers information that comes from one single source. In this research, the data obtained from the Census 2010 referred to permanent limitations caused by physical or cognitive ailments were matched with the mortality charts of the Argentinian population for the period 2008-2010 (year 2009). The census data offer the possibility of disaggregating the information obtained at national level among the country's twenty four jurisdictions. Given that the Census 2010 is the first to gather information about permanent limitations in the population, a cross-cut analysis is the only possibility, but it will also serve as groundwork to gain insight into healthy life expectancy (HALE) or free of permanent limitations in the country and each one of its provinces.

The mortality charts show that in the inter-census period 2001-2010, life expectancy at birth increased in all the provinces. The most important relative variations were observed mainly in the jurisdictions with the lowest life expectancy at birth.

On the other hand, the study carried out so far shows that the average years of life that were added to the Argentinian population did not result in health situations equivalent nationwide; rather, in 2010 one could observe three clearly differentiated profiles. One profile was characterized by the combination of the highest HALE rate with the lowest number of expected years with permanent limitations in every degree of severity and in all the different types. This profile corresponds in general to the provinces of the center-coastal region, but it applies also to Autonomous City of Buenos Aires (CABA) in particular.

At the opposite end we have the Northern provinces (Northeast and Northwest), with a different profile, characterized by a lower HALE and more expected years with at least one limitation and with permanent, severe limitations.

At the same time, the comparative analysis reveals the existence of two sub-profiles in the northern region. The Northeast provinces have the lowest HALE rates, whereas those in the Northwest present the highest number of expected years with permanent limitations with different degrees of severity. Noteworthy, Tucuman province shows values quite similar to those at national level. The indicator could be showing that in Northwestern provinces the mortality rate is diminishing in advanced ages but the consequent increase of longevity comes with the prevalence of permanent limitations.

Finally, the provinces of Cuyo region (Mendoza, San Luis and San Juan) and the Patagonian region form a profile with values similar to those at national level; in some provinces like Mendoza and Tierra del Fuego, values tend to liken those of the center-coastal region. On the other hand, the

analysis of information applying the approach of the differential impact of disability on total life expectancy shows that more women than men expect to live more years free of disability, but with a greater burden of disability. Furthermore, CABA is the jurisdiction with highest life expectancy free of disability and smallest burden of disability in the country, whereas the Northern province of Jujuy is the jurisdiction that shows the highest impact of disability in the total life expectancy of the population.

The Census 2010 was the first to explore permanent limitations in the population. Consequently, the diagnosis obtained through this research can be considered basal for future measurements that follow a historical line. The findings obtained will help outline the differential health profiles of the populations in the country's jurisdictions and big regions, and plan the financial flow that will be allotted over time to the attention of each population stock, according to its cohort composition.

6.2. Life expectancy with or without chronic morbidities in urban areas of Argentina

This analysis offers criteria that can help guide the policies and health plans developed in the country. In the first place, the study of the population that claims never having measured their cholesterol levels in blood shows a very high proportion of young adults, mainly among the male sector. It is only after fifty years of age that the No-Answer response descends to less than 30%. This information indicates that the policies for the prevention of chronic diseases, or at least, of hypercholesterolemia, have been unsuccessful. In urban clusters, the adult population (20+) can be expected to live more than fifteen years with hypercholesterolemia, more than nineteen with hypertension, yet only six with diabetes. As mentioned before, healthy life habits, with special focus on proper nutrition, systematic physical activity and no alcohol or tobacco, avoid the onset or improve the progression of the disease. However, periodic medical controls and pharmacological treatments are indicated when morbidities advance towards moderate or severe levels. For this reason one believes that the information presented, once disaggregated for sub-national levels, is of interest and value for programming the actions of the health system.

ANNEX III

According to the National Disability Survey (Encuesta Nacional de Discapacidad) 2005 (Chart 1, page 38) the total population with disability (carried out at national level in urban centers with 5,000 inhabitants or more) was of 2,176,123 persons, which represented a 7.1% prevalence, of which 28.3% was made up by EP aged 65+, with 28.8% women and 27.5% men.

The Argentina Statistical Yearbook on Disability 2016, of the National Disability Service (NDS) reveals that the cumulative total of Persons with Disability (PwD) holders of the Disability Certificate (DC) between 2009 and 2016 was 957,610 and that the certificates issued during 2016 were 225,865. In 2016, there were 187,802 with one disability and 38,063 with more than one.

Of the 100% of DCs issued during 2016, the disabilities were:

- 32.6% mental,
- 28.1% motor,

- 16.9% multiple,
- 9.1% visceral,
- 8.5% auditory and
- 4.8% visual.

The ratios compared by Type of disability between 2010 and 2016 have remained practically unchanged. Only multiple disability showed a greater increase, growing 3% with respect to 2010. The EP aged 65 or older were 21.04% (47,525) of the total number of 225,865 PwD with DC, 18.05% men and 24.17% women.

The data obtained from the NDS indicate that only 19.71% of the EP aged 65 or older has a DC.

Distribution of PwD with DC (Disability Certificate) with one disability by sex (Table 2.6 SNR 2016)

Type of disability	Female		Male		Total	
	No. of persons	%	No. of persons	%	No. of persons	%
Motor	33,716	53.13	29,749	46.87	63,465	100
Mental	23,321	40.03	34,937	59.97	58,258	100
Visceral	8,418	41.09	12,068	58.90	20,496	100
Auditory	9,771	50.90	9,425	49.10	19,916	100
Intellectual	6,047	39.12	9,410	60.88	15,457	100
Visual	5,468	49.98	5,472	51.02	10,940	100
Total	86,741	46.19	101,061	53.81	187,802	100

Women have the highest percentages in motor and auditory disability. whereas men have high levels in the other types.

Considering EP aged 65 or older with DC in 2016 (44,526 persons) we observe the following:

40.09% with motor disability.

14.70% with auditory disability

10.27% with visceral disability.

6.38% with visual disability

8.01% with mental disability.

0.17% with intellectual disability.

Subtotal 79.72% (20.28% make up the rest).

Housing characteristics

95.90% of those with a DC live in private homes. 90.955 of which have basic infrastructure (power. gas –domestic network or tank-. flush toilet).

Private and collective houses with adjustments make up a 65.33% of 216,596 persons with DC. The remaining 34.67% have no adjustments.

As regards overcrowding, we observed the following:

No overcrowding	73.58%
Moderate overcrowding	17.90%
Severe overcrowding	8.52%

Prevailing disabilities by geographic region (SNR 2016)

Type of disability	Prevailing by region	Total at country level
Motor	Cuyo :36%	28%
Mental	Pampa :29%	26%
Multiple	CABA/GBA* Patagonia and NE: 18%	17%
Visceral	CABA/GBA* and Patagonia :10%	9%
Auditory	Patagonia :13%	8%
Intellectual	Northwest :11%	7%
Visual	Northwest : 6%	5%
Total		100%

*: GBA= Greater Buenos Aires.

Contacts:

vivianasaez@hotmail.com

gbarquitectura1@gmail.com

arqsilvera@gmail.com

eschmunis@yahoo.com.ar

ricardo.al.blanco@gmail.com