

The GCCM Home Assessment Program: survival analysis of time to institutionalization of an elderly population followed since 2006 in Monaco.

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CONFLICT OF INTEREST DISCLOSURE

I have no potential conflict of interest to report.

CONTEXT

- Monaco census 2016: 37 308 residents including 12 433 of more than 60 years old.
- Since 2006, the Gerontologic Coordination Center of Monaco (GCCM) takes care of disable elderly living at home.
- A Comprehensive Geriatric Assessment (CGA) is performed at home, annually or in case of disability progression, as long as elderly live safety at home.
- The GCCM sets up a personalized assistance plan.

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OBJECTIVES

- Description of the role of the GCCM
- Description of the population followed since 2006
- Estimate the time to institutionalization with a Kaplan-Meier analysis
- Investigate predictive factors of institutionalization with a Cox model

MATERIAL AND METHODS

- **Retrospective, monocentric study**
- Descriptive analysis, Kaplan-Meier analysis and Cox model
- Start of GCCM activity : September 2006
- Endpoint date: August 15, 2017
- The GCCM performs a CGA at home, including:
 - Groupe Iso-Ressources (GIR) calculation
 - Minimental Test Examination (MMS-E) calculation
 - Instrumental Activity of Daily Living (IADL) score
 - Mini Nutritional Assessment (MNA) calculation
 - Unipodal support
 - Four meter walk
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GIR : BODILY AND MENTAL ACTIVITIES

- **Communicate** verbally and / or non-verbally, act and behave logically and sensibly in relation to the standards accepted by society
- To find oneself in **space** and **time**,
- To make her **toilet**,
- **Dressing**, undressing,
- To serve and **eat**,
- Ensure the hygiene of the urinary and fecal **elimination**,
- To rise, to lie, to sit, to pass from one of these 3 **positions** to another,
- Moving **inside** the place of life,
- Moving **outside** the place of life,
- Use a means of **remote communication** (telephone, alarm, bell, etc.) in order to alert in case of need.

DOMESTIC AND SOCIAL ACTIVITIES

- Manage its affairs, budget and assets, recognize the monetary value of coins and notes, use money and know the value of things, complete administrative procedures, complete forms,
- Prepare meals and pack them so they can be served,
- Performs all routine housework,
- Voluntary use of a means of collective or individual transport,
- Buy voluntarily property,
- Respect the prescription of the doctor and manage his own treatment,
- Voluntarily, alone or in a group, various recreational activities.

MATERIAL AND METHODS

- A personalized assistance plan is proposed using an inter-professional approach:
 - Nurse at home
 - Other health carers (AVS, AS...)
 - Home maid
 - Meals at home
 - Alarm at home in case of emergency
 - Easy access to the memory centre
 - Daily care center
- Transmission and sharing of results and of care plan with other members of the network

MATERIAL AND METHODS

- People working at the GCCM are:
 - 1 administrative director
 - 1 medical doctor (geriatrist)
 - 2 Nurses
 - 3 Social workers
 - 1 Psychologist
 - 1 Secretary

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DEVELOPING PREVENTIVE
ACTIONS IN GERIATRICS



MATERIAL AND METHODS

- The GCCM has numerous missions:
 - Phone reception of people questions
 - Advice and orientation
 - Assessment at home
 - Implement and follow up of help plan
 - Quality assessment
 - Data collection and sharing
 - Public health

MATERIAL AND METHODS

- This study focuses on only two variables : GIR and MMS-E.
- GIR score is a french score for mesuring disability:
 - from 1 (very disable)
 - to 6 (autonomous).
- The MMS-E assesses cognitive impairment from 0 to 30

RESULTS

- **2198 patients** were seen and recorded by the GCCM since september 2006
- 166 were removed from the study because they were seen only once
 - 141 were seen for the first time, the year before the endpoint date of the study;
 - 25 were not followed.
- >>> **2032** patients are included in this report.

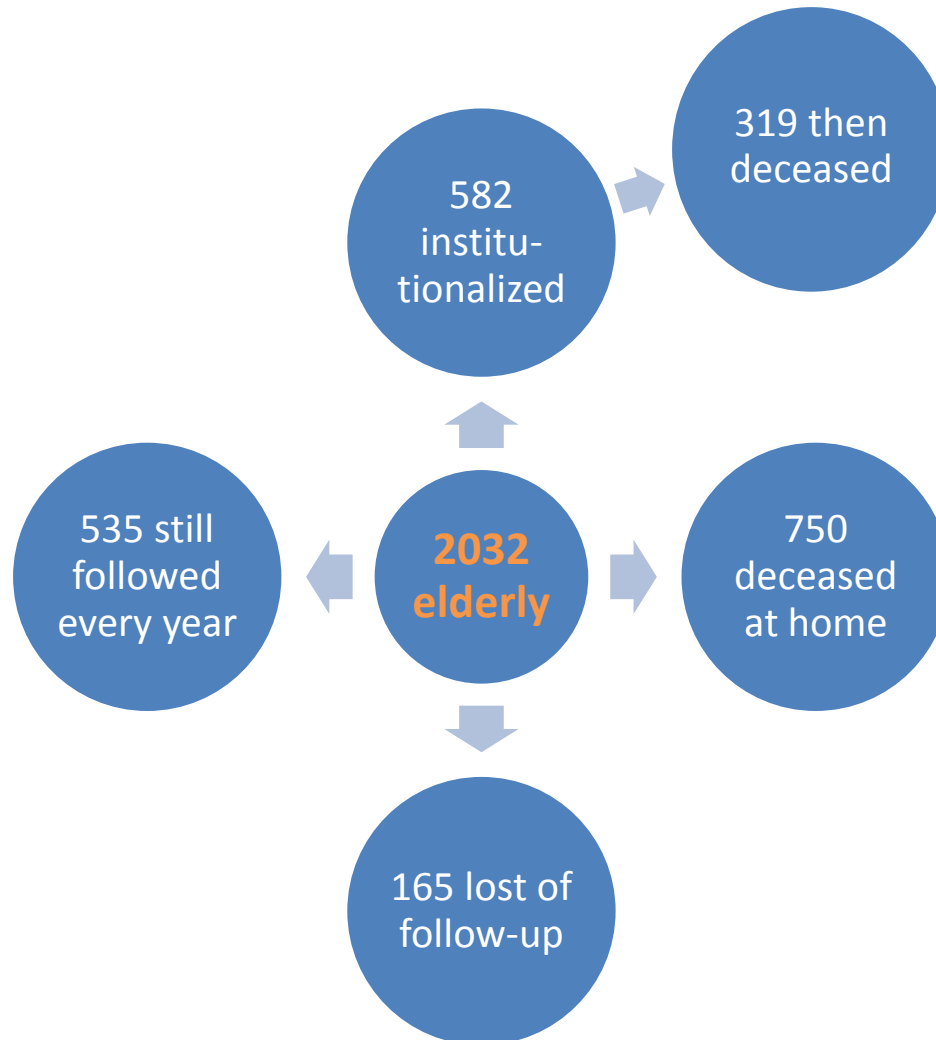
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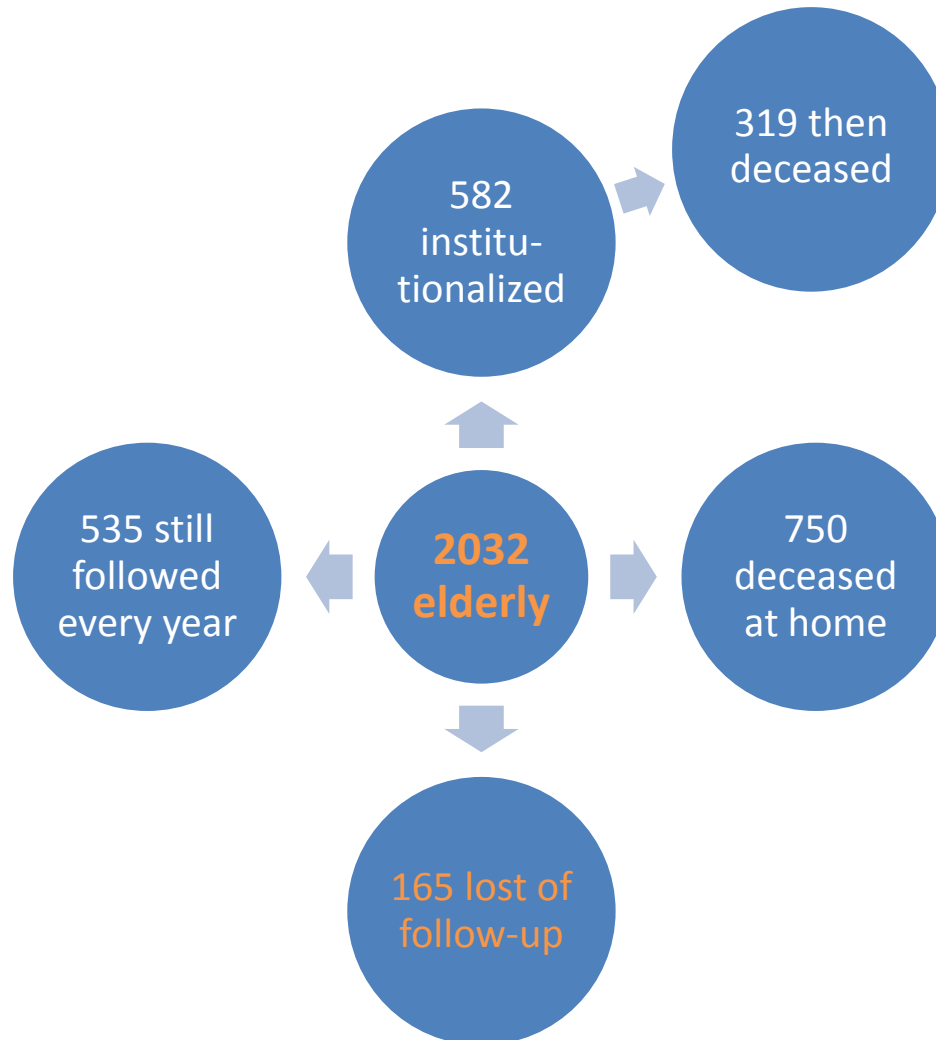
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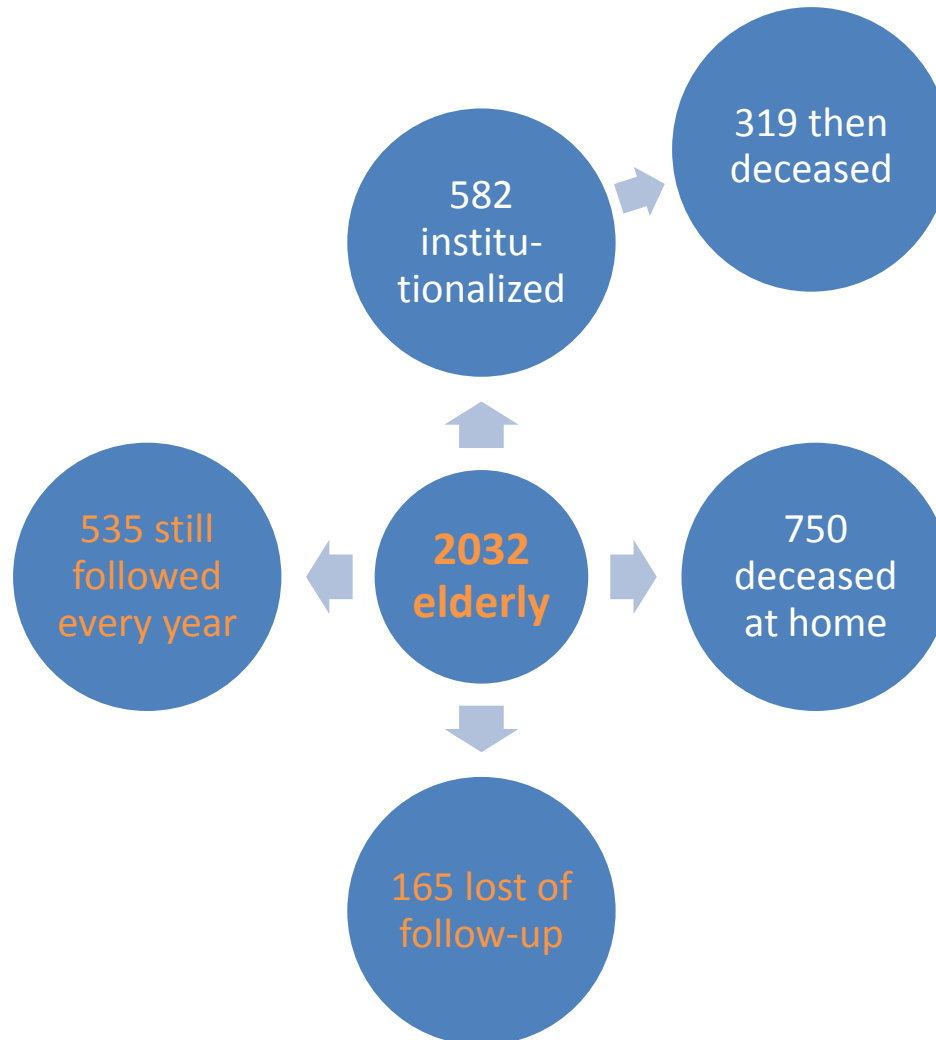
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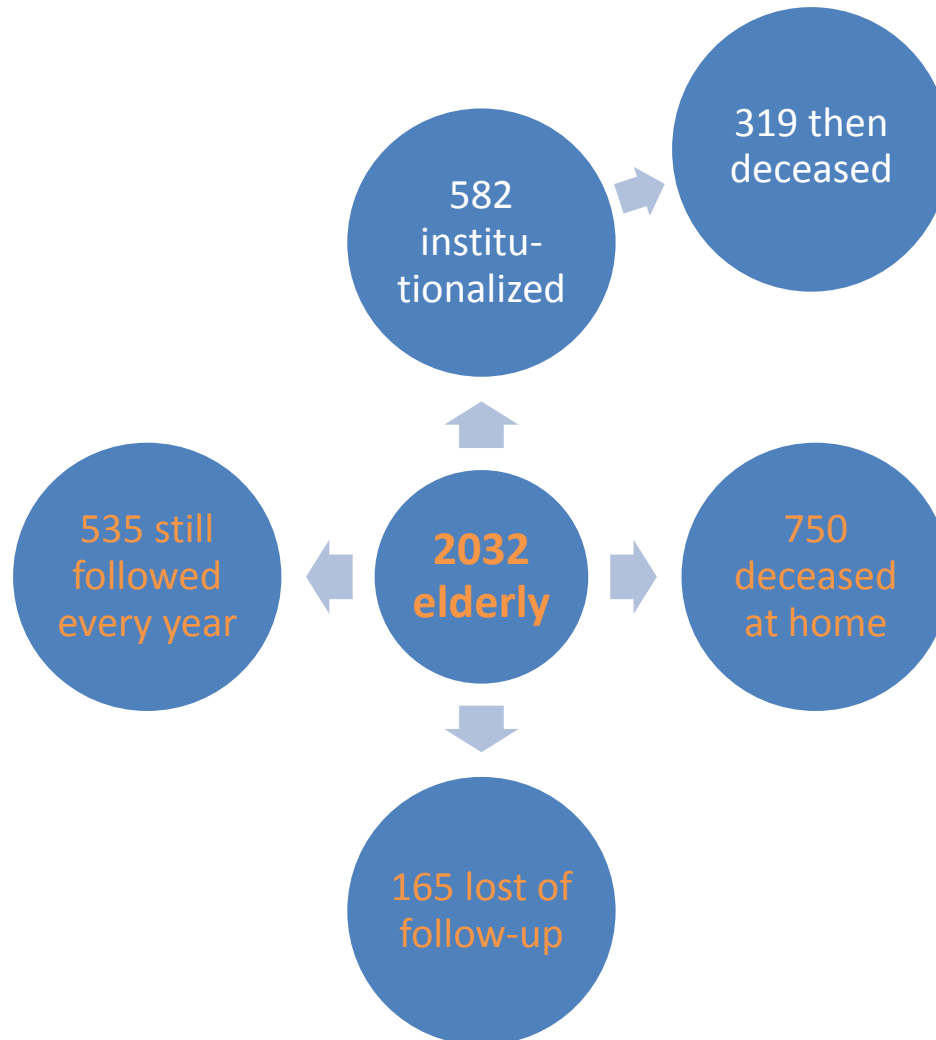
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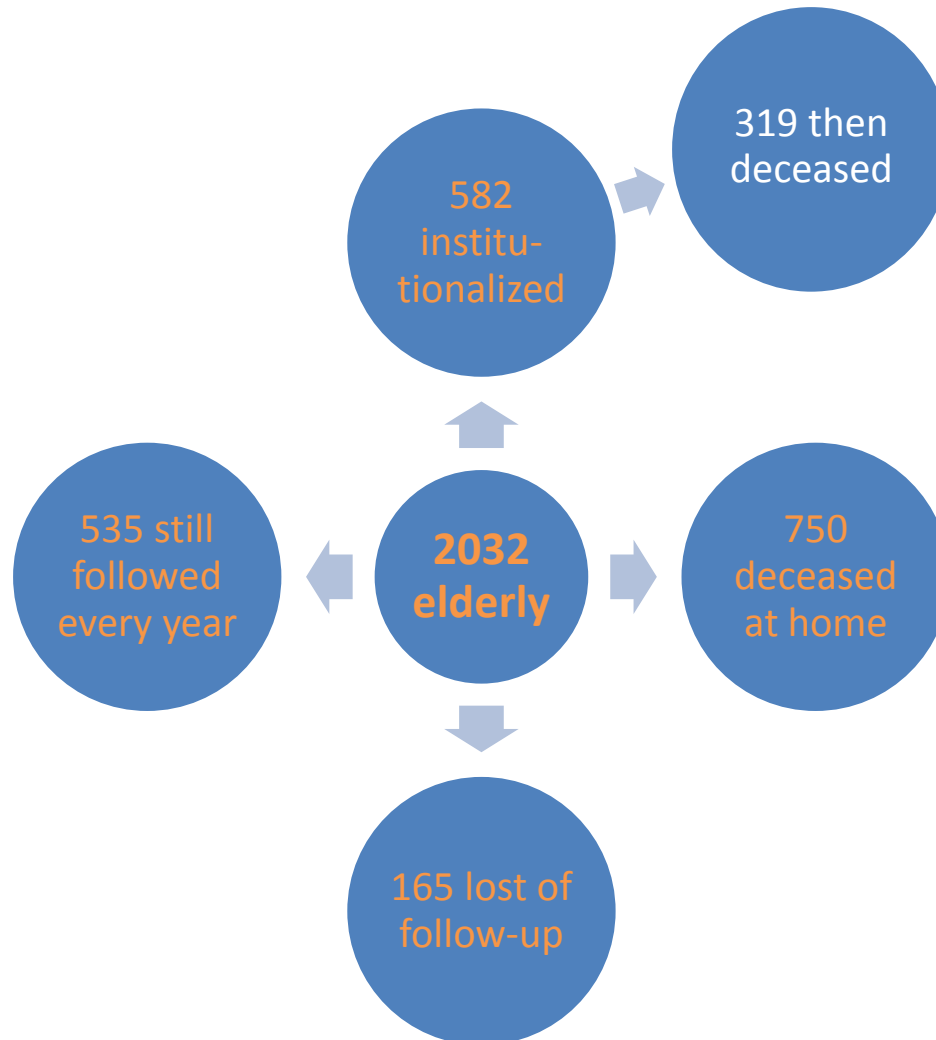
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SOME NUMBERS

	Men n=692	Women n=1340	Total n=2032
Age at first CGA	82.6 [51.6-100.7]	83.6 [40.1-105.1]	83.2 [40.1-105.1]
GIR at first CGA : 1 to 4	520 (68%)	912 (75%)	1432 (70%)
5 to 6	172 (32%)	428 (25%)	600 (30%)
MMS-E at first CGA : 1 to 19	134 (21%)	279 (20%)	413 (20%)
20 to 24	167 (26%)	350 (24%)	517 (26%)
25 to 30	299 (45%)	604 (43%)	903 (44%)
ND	92 (8%)	107 (13%)	199 (10%)
Total number of CGA	2.8 [1-10]	3.4 [1-12]	3.2 [1-12]
Age at institutionalization	86.6 [64.5-101.5]	89.1 [59.6-105.6]	88.3 [59.6-105.6]

Numbers and percentages for categorical variables

Means, min and max for continuous variables

- **1019 persons had 3 or more CGA**
- **6497 CGA since 2006**

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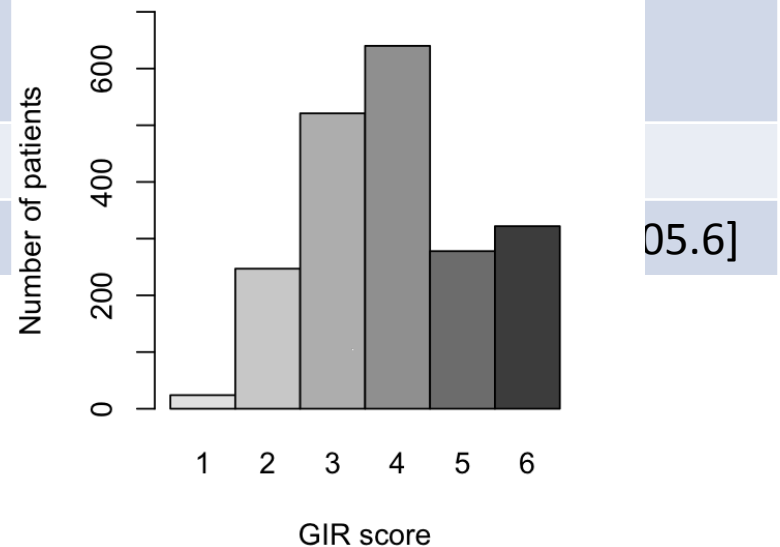
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KAPLAN-MEIER ANALYSIS

- Endpoint date : August 15, 2017
- Time of observation is defined as the time from the first GCA until :
 - Institutionalization
 - Death
 - Date of last news or GCA
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- Event of interest is the institutionalization
- Mean time of observation : 2.8 years
- Median time of observation : 2.09
- Maximum time of observation : 10.8 years

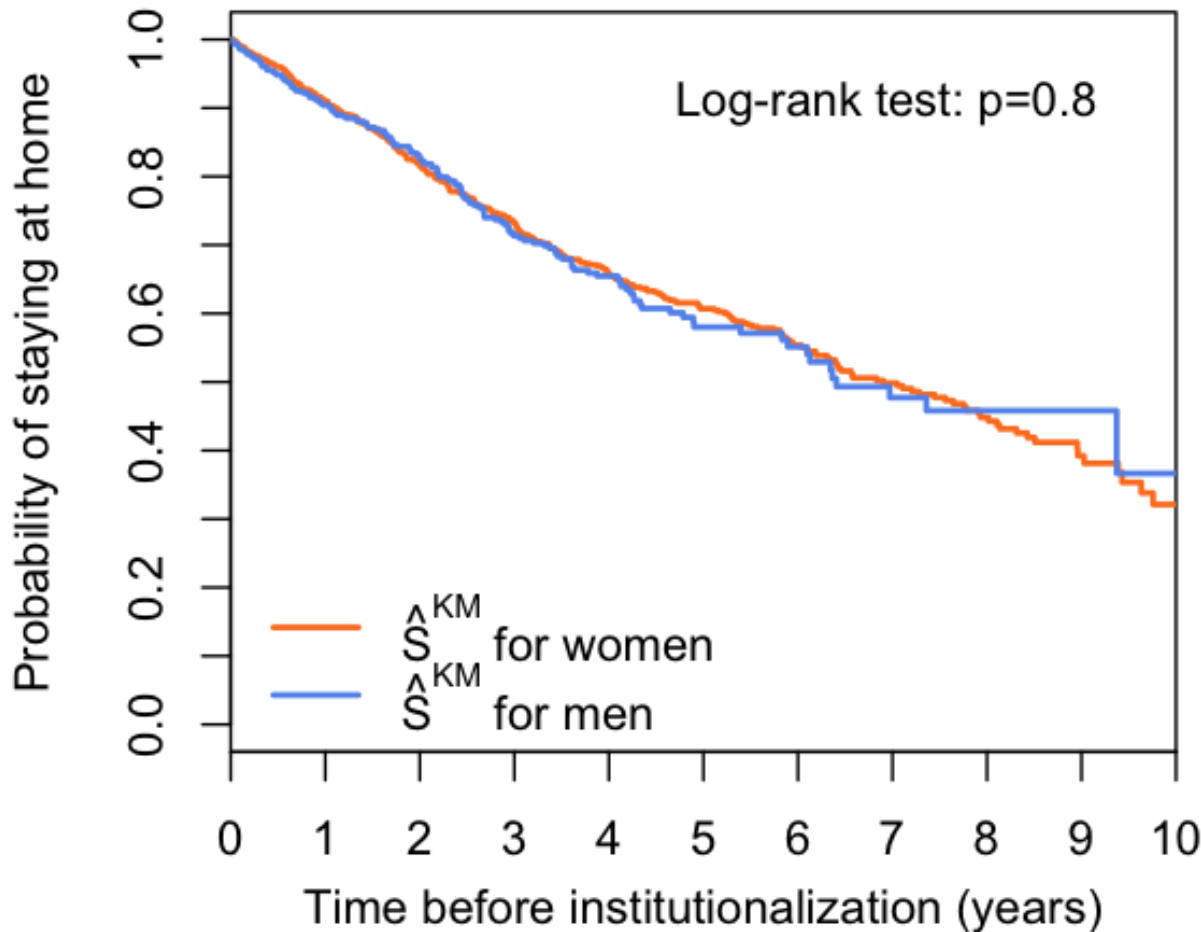
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Time to institutionalization according to the sex

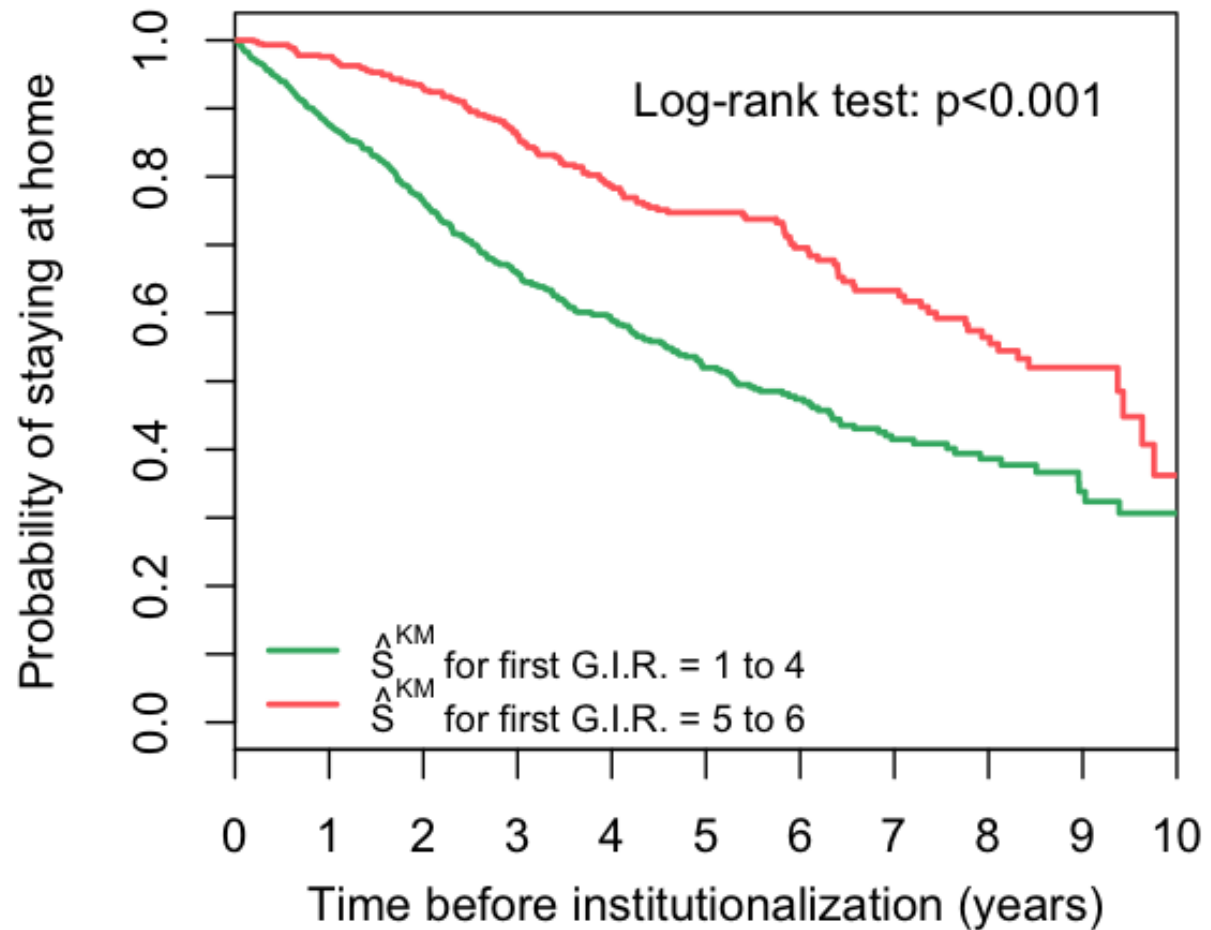


- 2 years after the first CGA:
 - 82% of men
 - 82% of women are still at home

W (n):	1340	1014	752	537	391	278	189	130	86	39	13
M (n):	692	449	320	205	138	78	53	30	20	10	2

Number at risk

Time to institutionalization according to the GIR

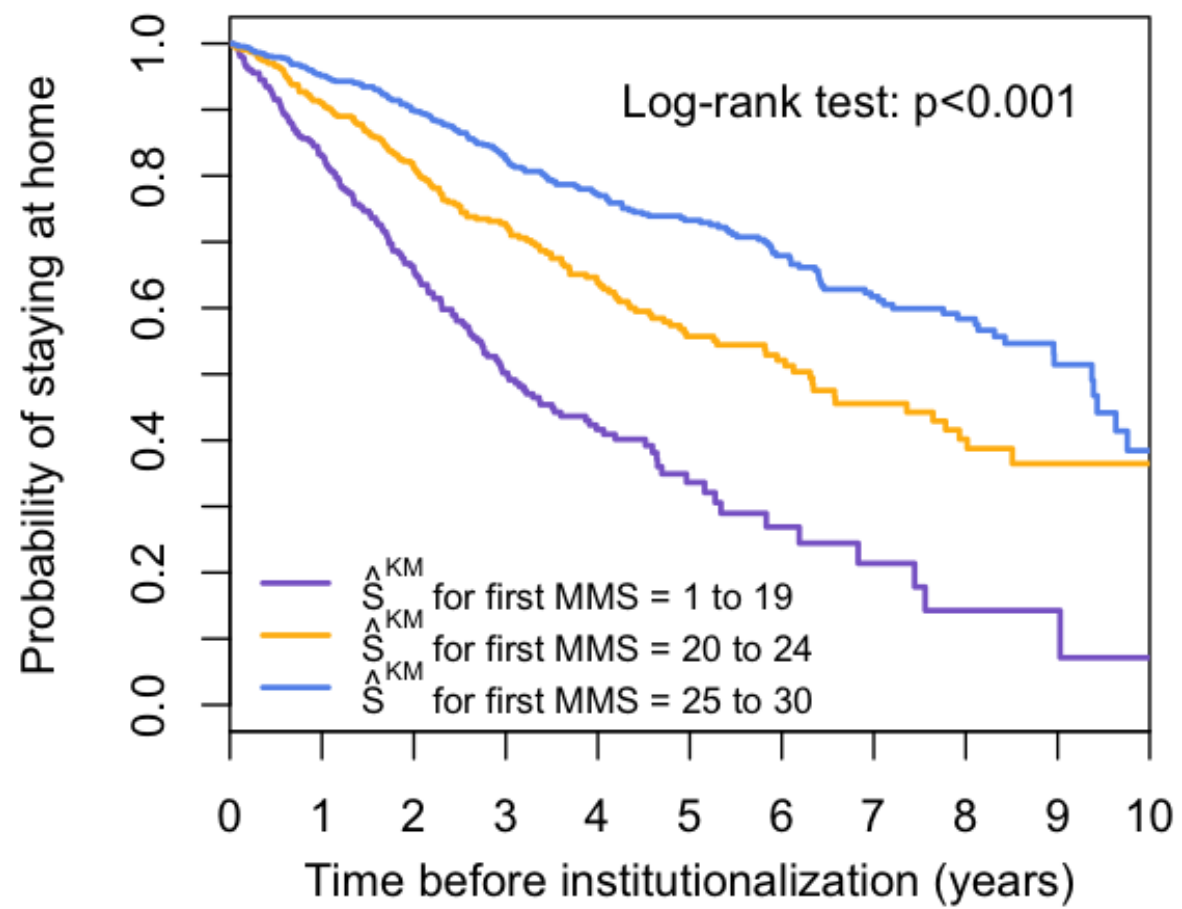


- 2 years after the first CGA:
 - 76% of 1-4
 - 93% of 5-6 are still at home

GIR 1-4 (n):	1432	936	641	425	291	188	120	76	47	24	9
GIR 5-6 (n):	600	527	431	317	238	168	122	84	59	25	6

Number at risk

Time to institutionalization according to the MMS-E



- 2 years after the first CGA:
 - 66% of 1-19
 - 81% of 20-24
 - 90% of 25-30 are still at home

1-19 (n):	413	264	165	97	61	24	12	6	4	2	1
20-24 (n):	517	392	287	202	144	98	62	40	28	13	3
25-30 (n):	903	730	568	410	300	221	160	110	72	32	9

Number at risk

MULTIVARIATE COX MODEL

	Hazard Ratio	P-value
Age at first CGA (per unit)	1.03	<0.001
GIR at first CGA : 5-6	Ref	
1-4	1.66	<0.001
MMS-E at first CGA : 25-30	Ref	
20-24	1.5	<0.001
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Age, dependance and cognitive impairment increase the risk of institutionalization.

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- Repeated practice of CGA by a medical doctor and nurses at home.
- *Establishing of coordination*, which keeps elderly at home as long as possible.
- Our study confirms some well-known predictors of institutionalization : age, disability and presence of cognitive impairment.
- These are our first results : more to come with all scores performed during the CGA:
 - Denutrition score
 - Frailty score
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