

Population Projection by Health Status for the Elderly Japanese

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Introduction

- Effects of aging population on social security
 - Increase in health expenditures
 - Increase in use of long-term care insurance
 - Increase in older adults who receive pension

Objectives of the Study

- Conduct population projection for elderly Japanese by health status and examined the impact of the increase in elderly population on medical expenditure
- Estimate health expectancy based on functioning ability (ALE)

Projected Population of Japan: 2015-2055

	Base estimates			Alternate estimates		
Year	Total	Males	Females	Total	Males	Females
2015	125430	60806	64624	125655	60862	64794
2025	119270	57406	61864	120271	57649	62622
2035	110679	52953	57726	112806	53534	59272
2045	100443	47898	52545	103802	48887	54916
2055	89930	42748	47182	94371	44202	50169

	Proportion of Subpopulation (%)				
Year	65+	75+	85+	20-64	65+/20-64
2015	27.1	13.3	4.2	56.4	48.0
2025	31.0	18.8	6.7	54.9	56.5
2035	34.8	21.5	10.3	52.3	66.6
2045	40.1	24.5	11.7	47.8	84.0
2055	43.1	29.5	14.2	45.7	94.5

Data

- Nihon University Japanese Longitudinal Study of Aging (NUJLSOA)
- 5 waves of panel data: 1999, 2001, 2003, 2006, and 2009
- Nationally representative sample of age 65+ in 1999
- Oversampled for age 75+
- Baseline N: 4,997 refreshed in 2001 and 2003

Definition of Health Status

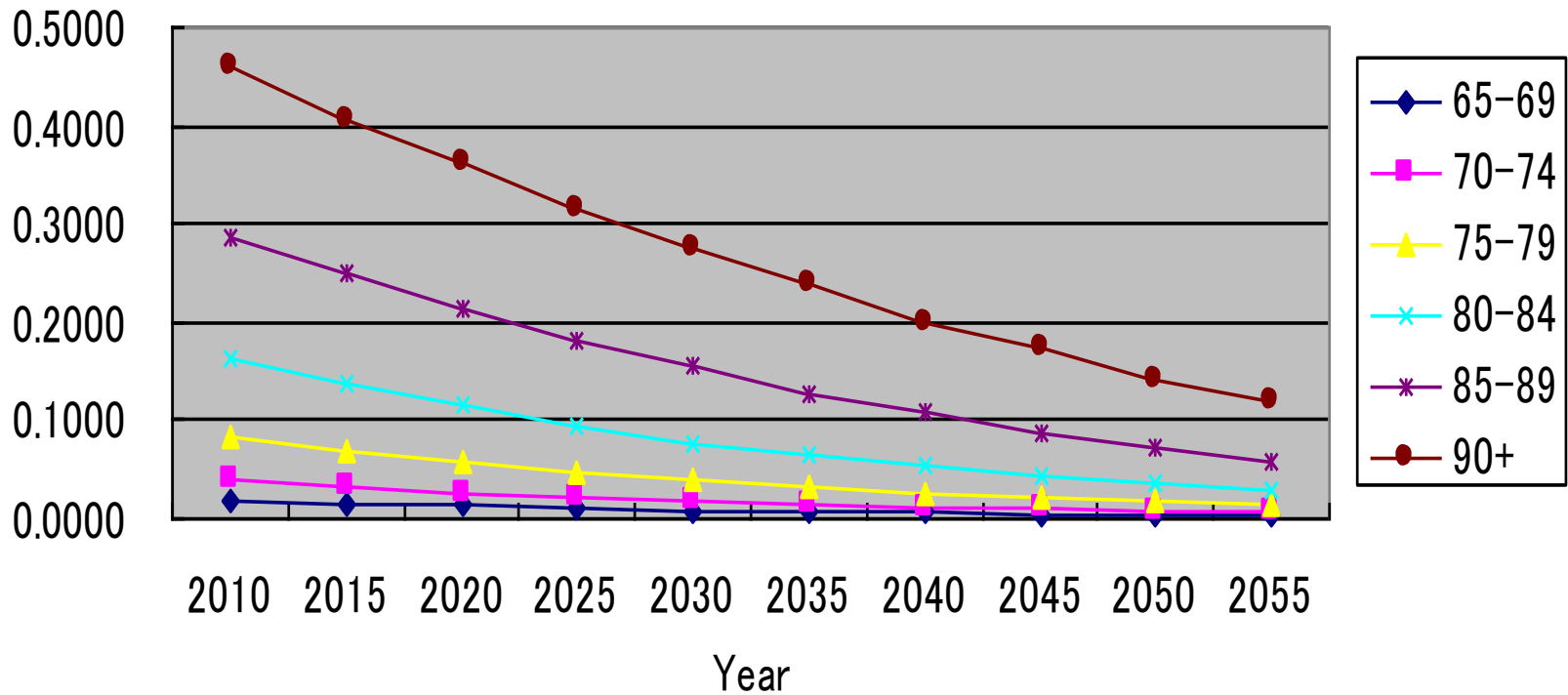
- Health status was defined by 7 ADLs (bathing, dressing, eating, walking, transfer, going outside, and toileting) and 7 IADLs (preparing own meal, shopping, managing money, make phone call, light house work, taking public transportation, medication).
- Inactive: those who have at least one, a lot of difficulty or unable performing ADLs and IADLs
- Active: otherwise

Proportions of respondents having at least one severe activity limitation by age, sex, and year of survey wave

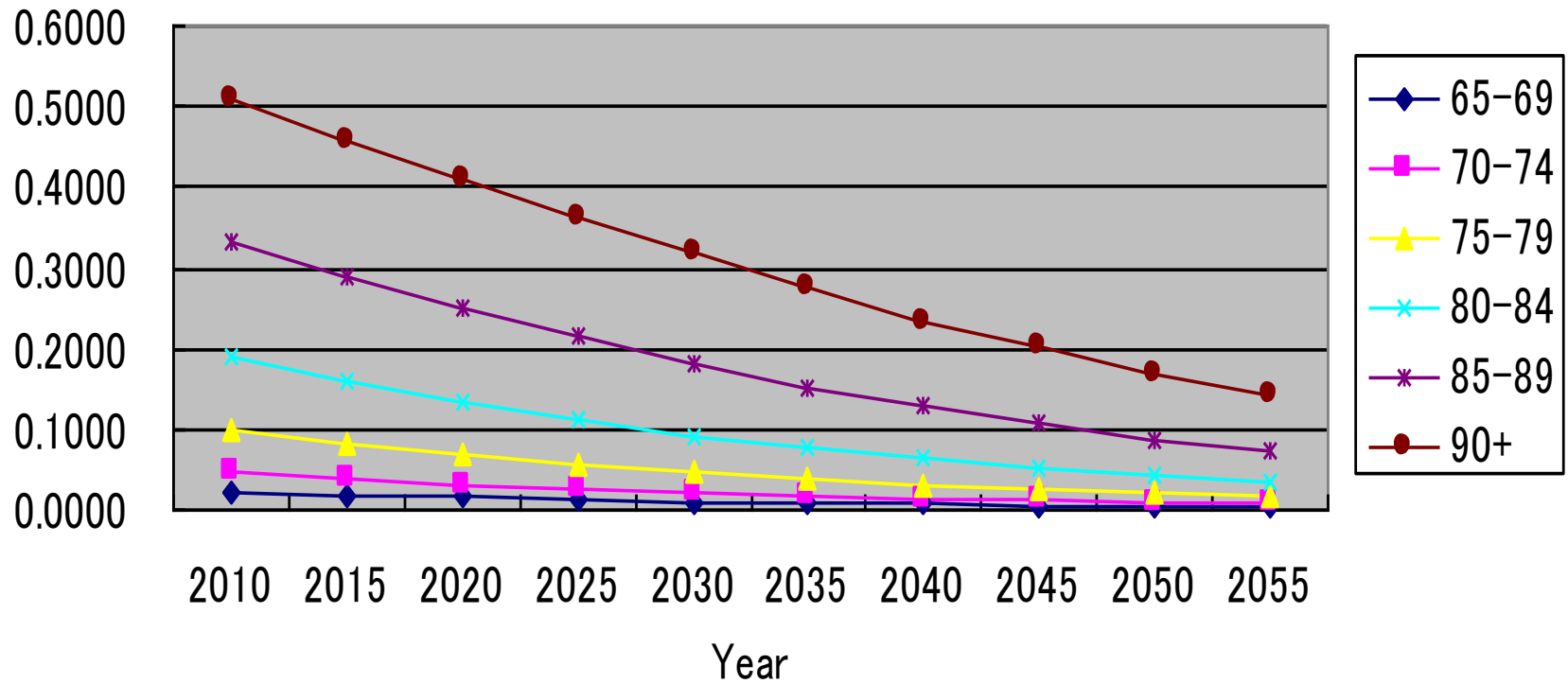
	1999	2001	2003	2006	2009
males					
65-69	2.9%	3.2%	4.6%	2.9%*	n.a.
70-74	8.4%	5.9%	6.2%	7.4%	3.6%
75-79	10.7%	9.8%	11.5%	13.3%	11.1%
80-84	19.8%	17.2%	16.6%	16.5%	14.2%
85-89	30.7%	29.2%	34.6%	31.6%	20.2%
90+	48.9%	61.5%	70.4%	46.6%	43.9%
females					
65-69	5.3%	3.3%	2.4%	3.4%*	n.a.
70-74	5.6%	4.4%	5.9%	5.1%	10.5%
75-79	12.5%	11.2%	9.5%	9.3%	9.2%
80-84	25.9%	27.8%	21.6%	18.7%	17.0%
85-89	44.0%	47.1%	46.5%	44.6%	36.8%
90+	76.6%	71.2%	61.8%	67.1%	66.5%

* Covers 68-69 age group only

Prevalence of at least 1 sever disability by Age group:
Males 2010-2055



Prevalence of at least 1 sever disability by Age Group:
Females 2010-2055



Projected Number of Disabled Population

	Number of	Number of	%
	Population	Disabled	disabled
Year	Aged 65+	Population	65+
	(Thousand)	(Thousand)	
2015	33996.5	3610.9	10.6%
2025	37323.4	3782.0	10.1%
2035	39285.1	3582.1	9.1%
2045	41625.7	3085.1	7.4%
2055	40709.8	2385.8	5.9%

Life and Active Life expectancy, and % of Active LE for Males: 2015-2055

year	LE			Active LE			% ALE		
	65	75	85	65	75	85	65	75	85
2015	19.6	12.3	6.7	17.5	10.1	4.4	89.5	82.3	66.4
2025	20.8	13.3	7.4	19.0	11.4	5.4	91.5	85.9	73.1
2035	22.0	14.3	8.0	20.5	12.7	6.4	93.2	88.9	79.1
2045	23.1	15.2	8.7	21.9	13.9	7.3	94.7	91.5	84.1
2055	24.2	16.2	9.3	23.2	15.1	8.2	96.0	93.6	88.2

Life and Active Life expectancy, and % of Active LE for
Females: 2015-2055

year	LE			Active LE			% ALE		
	65	75	85	65	75	85	65	75	85
2015	25.3	16.6	9.2	21.0	12.4	5.4	83.3	74.6	58.1
2025	27.0	18.2	10.4	23.2	14.3	6.8	85.7	78.7	65.0
2035	28.6	19.6	11.5	25.2	16.2	8.2	88.1	82.5	71.5
2045	30.1	21.0	12.6	27.2	18.0	9.7	90.3	86.0	77.4
2055	31.5	22.2	13.6	29.1	19.8	11.3	92.3	89.0	82.5

National Medical Expenditures and Per Capita Expenditures

by Sex and Age Group: 2009

Age Group	(100 million Yen)			per capita (Yen)	
	Total	Males	Females	Males	Females
Total	348 084	167 972	180 112	270792	275654
0-4	11 304	6 170	5 134	222744	195209
5-9	6 461	3 567	2 894	125599	106790
10-14	4 562	2 548	2 014	84092	69931
15-19	4 002	2 100	1 902	67961	64475
20-24	5 042	2 211	2 832	64273	86341
25-29	7 059	2 966	4 094	78466	113407
30-34	9 558	4 089	5 469	97589	134704
35-39	11 335	5 238	6 097	106680	127286
40-44	11 365	5 620	5 744	128311	133271
45-49	12 864	6 480	6 384	160794	160000
50-54	16 374	8 441	7 934	221549	207696
55-59	26 593	14 118	12 475	329860	286124
60-64	31 566	16 934	14 632	347008	286902
65-69	36 674	19 489	17 185	497168	399651
80-74	43 614	22 226	21 388	685988	570347
75-79	43 651	21 154	22 497	813615	669554
80-84	34 935	15 167	19 768	881802	748788
85+	31 125	9 455	21 670	859545	771174

Projected Total Medical Expenditure

Year	Total	Males	Females
2010	356464	171994	184470
2015	377093	181377	195717
2020	394510	188648	205862
2025	406788	193238	213550
2030	413516	195080	218436
2035	415568	194793	220774
2040	414318	193473	220845
2045	411701	191993	219708
2050	407554	190070	217484
2055	401441	186964	214476

Computed ratio of medical expenditures by functioning based on the study:

Active : Inactive = 1 : 1.3

"Health, Life Expectancy, and Health Care Spending among the Elderly"

James Lublitz, Liming Cai, Ellen Kramarow and Harold Lentzner

The New England Journal of Medicine (2003)

Note: JSTAR did not provide stable estimates

Projected Medical Expenditure for those Aged 65 and over: 2015-2055

	Functioning adjusted			No adjustment		
Year	Total	Males	Females	Total	Males	Females
2015	229213	106475	122738	232194	107696	124498
2020	250821	116112	134709	256279	118326	137954
2025	262767	120640	142127	270857	123890	146967
2030	270085	122919	147166	280920	127216	153704
2035	276029	124796	151233	289427	130030	159397
2040	285369	129138	156231	300422	134937	165485
2045	290321	131670	158650	306915	138029	168886
2050	291603	132801	158803	310267	139961	170306
2055	289381	132063	157318	310391	140098	170293