# Health and Health Care in Japanese Elderly

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Life expectancy at birth: 1900-2008 Women
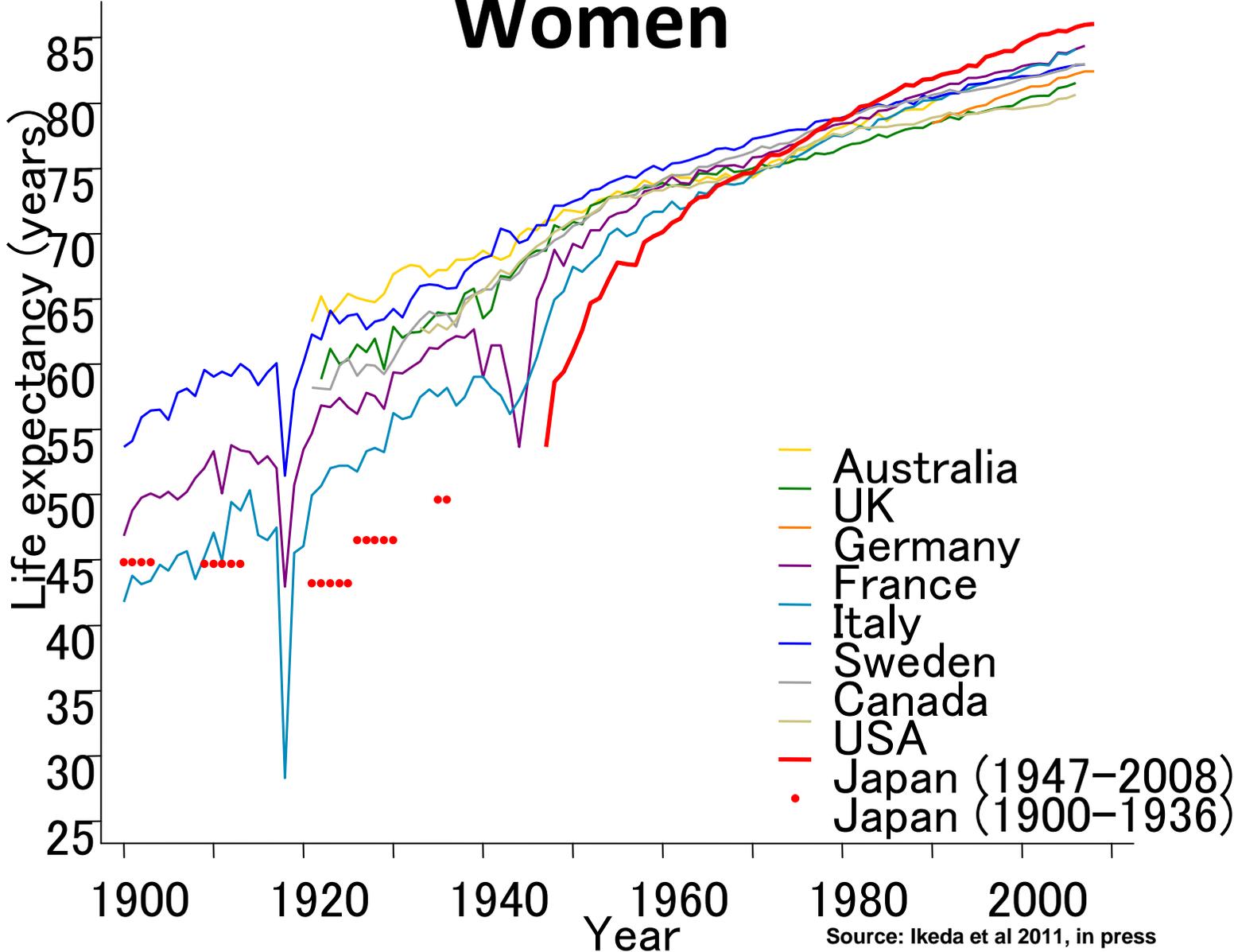
Source: Ikeda et al 2011, in press

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Life expectancy at birth: 1900-2008 Men

Australia
UK
Germany
France
Italy
Sweden
Canada
USA
Japan（1947–2008）
Japan（1900–1936）

2
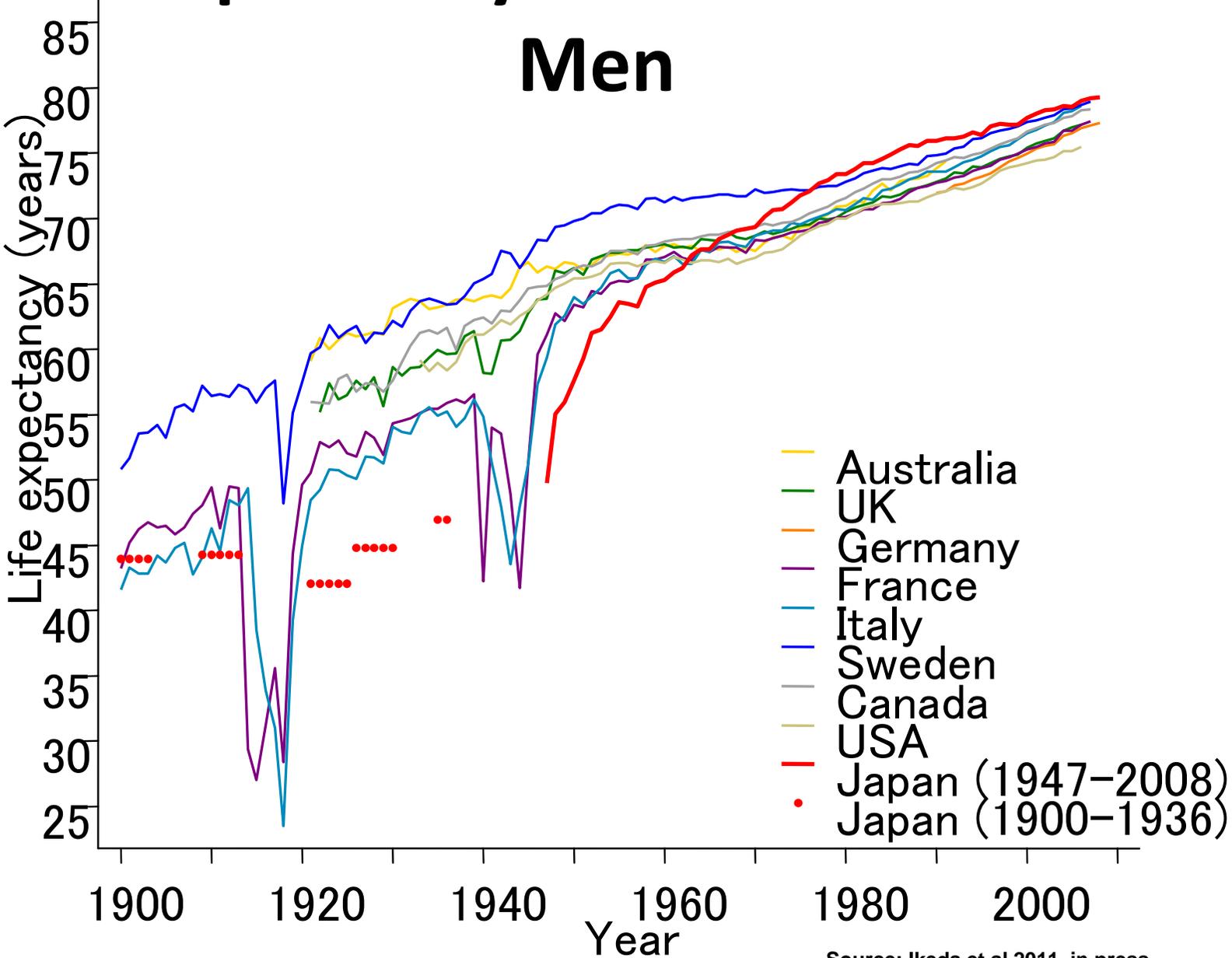
In this presentation

- Demographic/ epidemiological analysis on Japanese longevity
- Healthcare system
  - Access, quality, expenditure
- Life style factor, focusing diet
- Conclusion

Contributions to changes in life expectancy 1950 – 1965, MEN
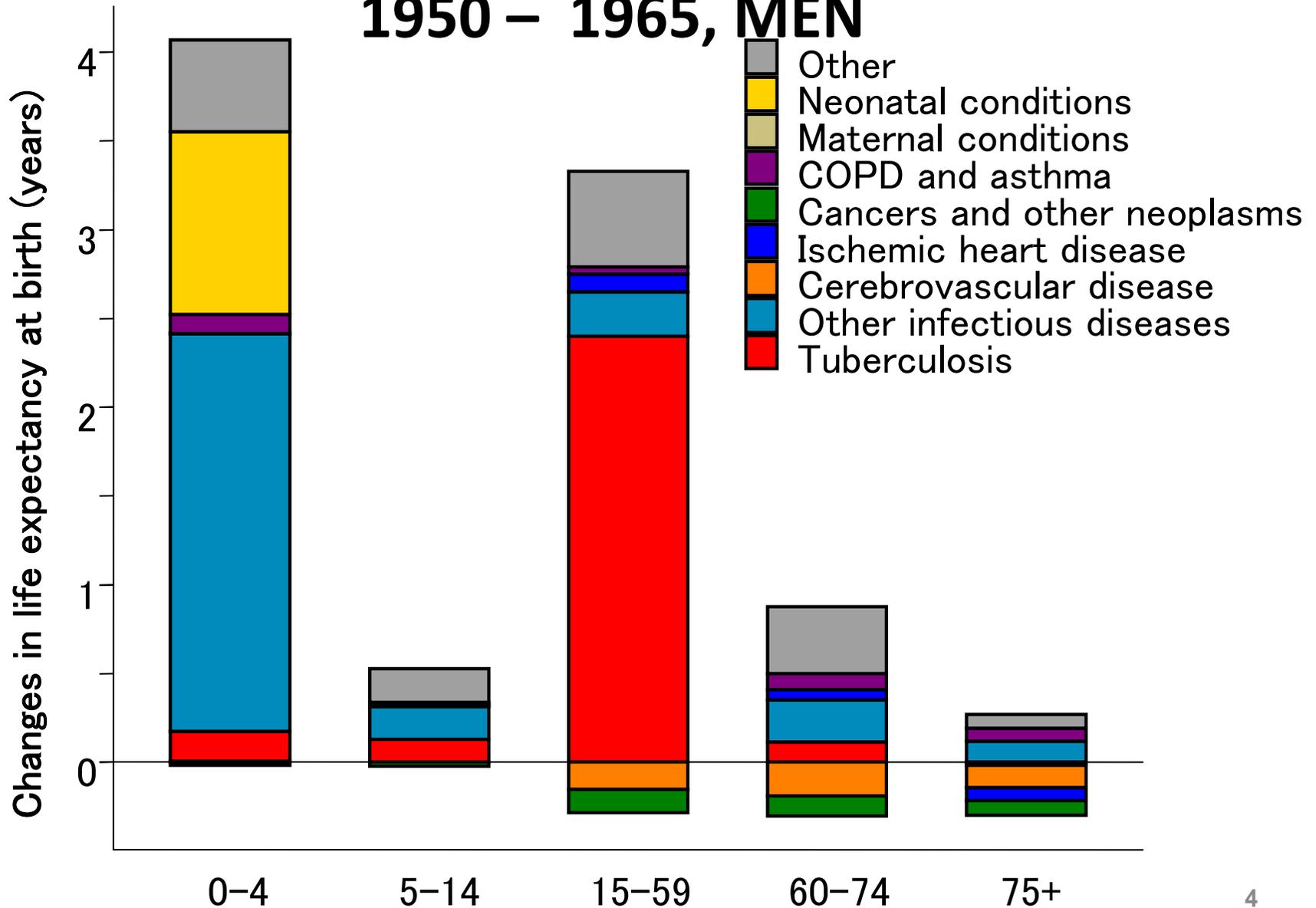
Major driver since late 1960s; rapidly reduced stroke mortality

5
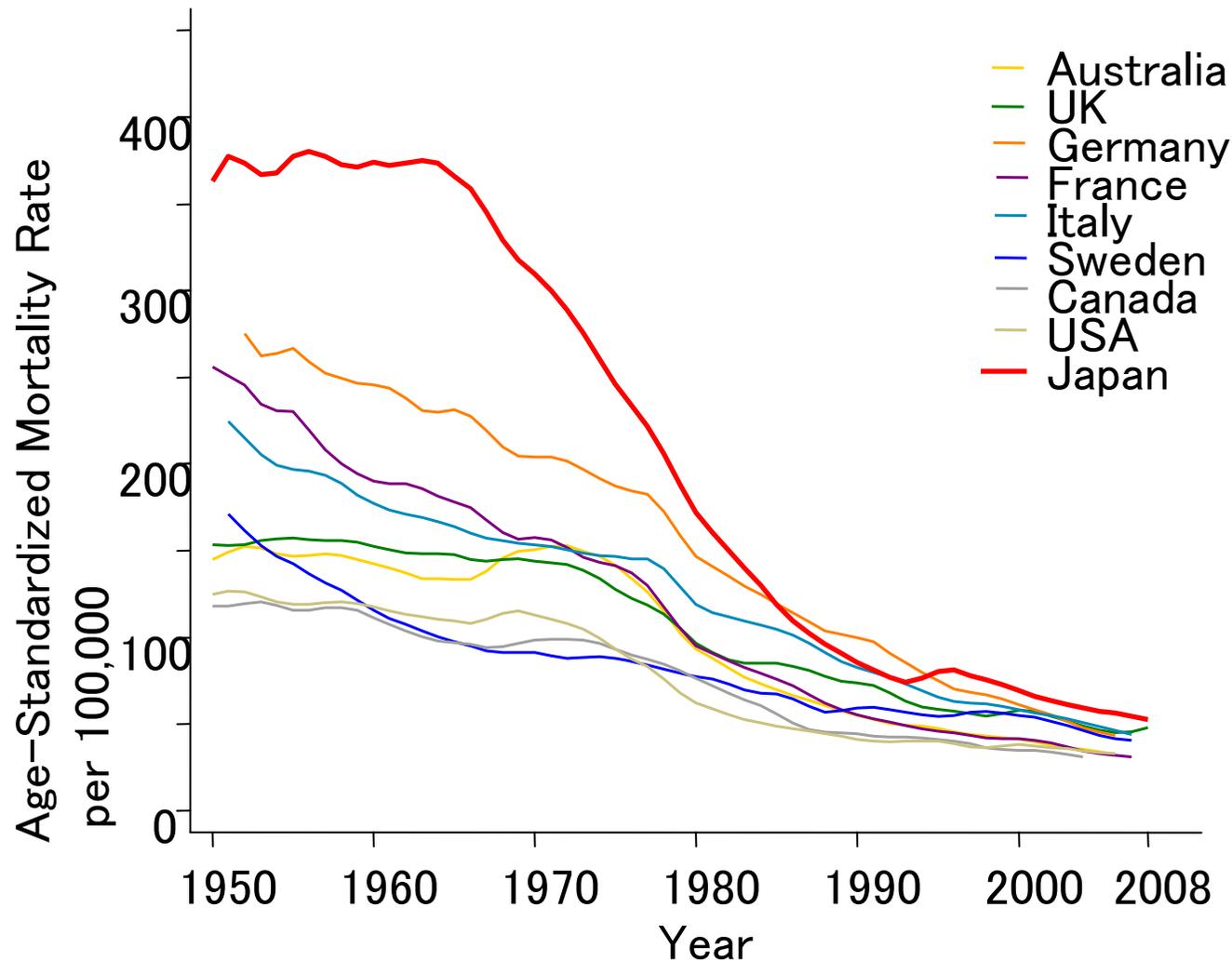
Contributions to changes in life expectancy 1965 – 1980, MEN

Source: Ikeda et al 2011, in press
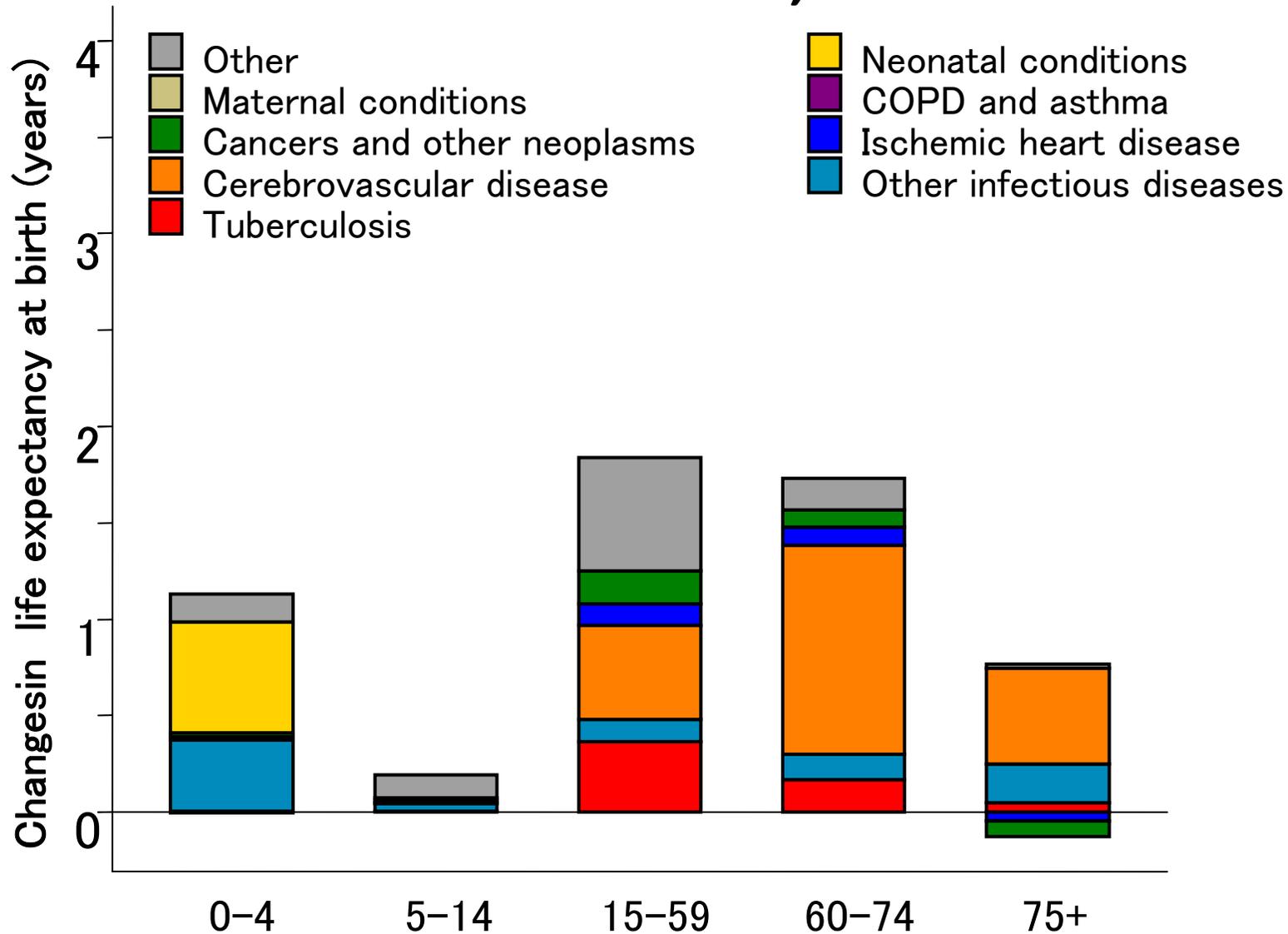
Contributions to changes in life expectancy 1980 – 1995, WOMEN
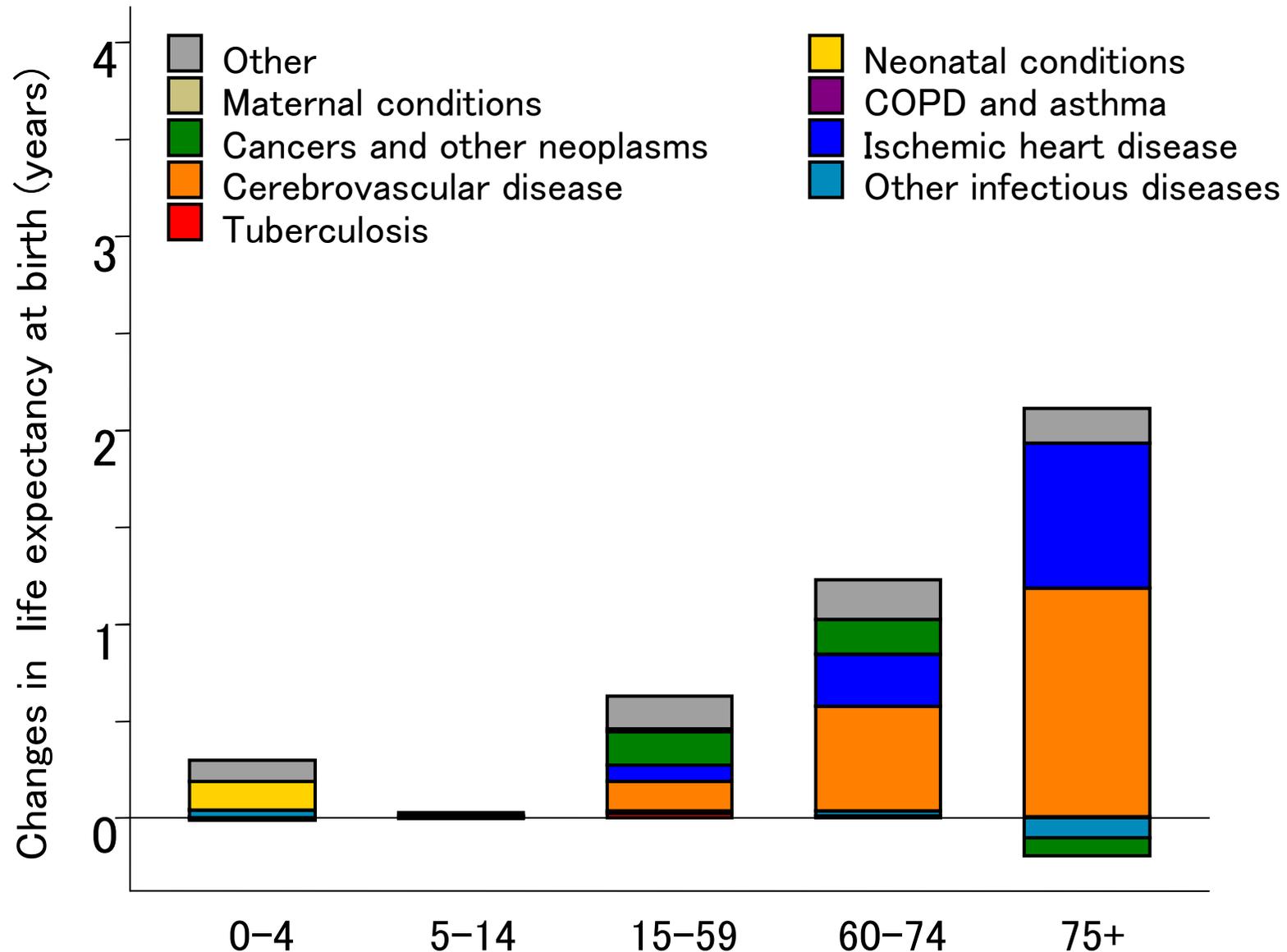
Source: Ikeda et al 2011, in press

Contributions to changes in life expectancy 1995 – 2008, WOMEN

Legend:
- Other
- Maternal conditions
- Cancers and other neoplasms
- Cerebrovascular disease
- Tuberculosis
- Neonatal conditions
- COPD and asthma
- Ischemic heart disease
- Other infectious diseases

Y-axis: Changes in life expectancy at birth (years)

X-axis categories: 0–4, 5–14, 15–59, 60–74, 75+

Source: Ikeda et al 2011, in press

8
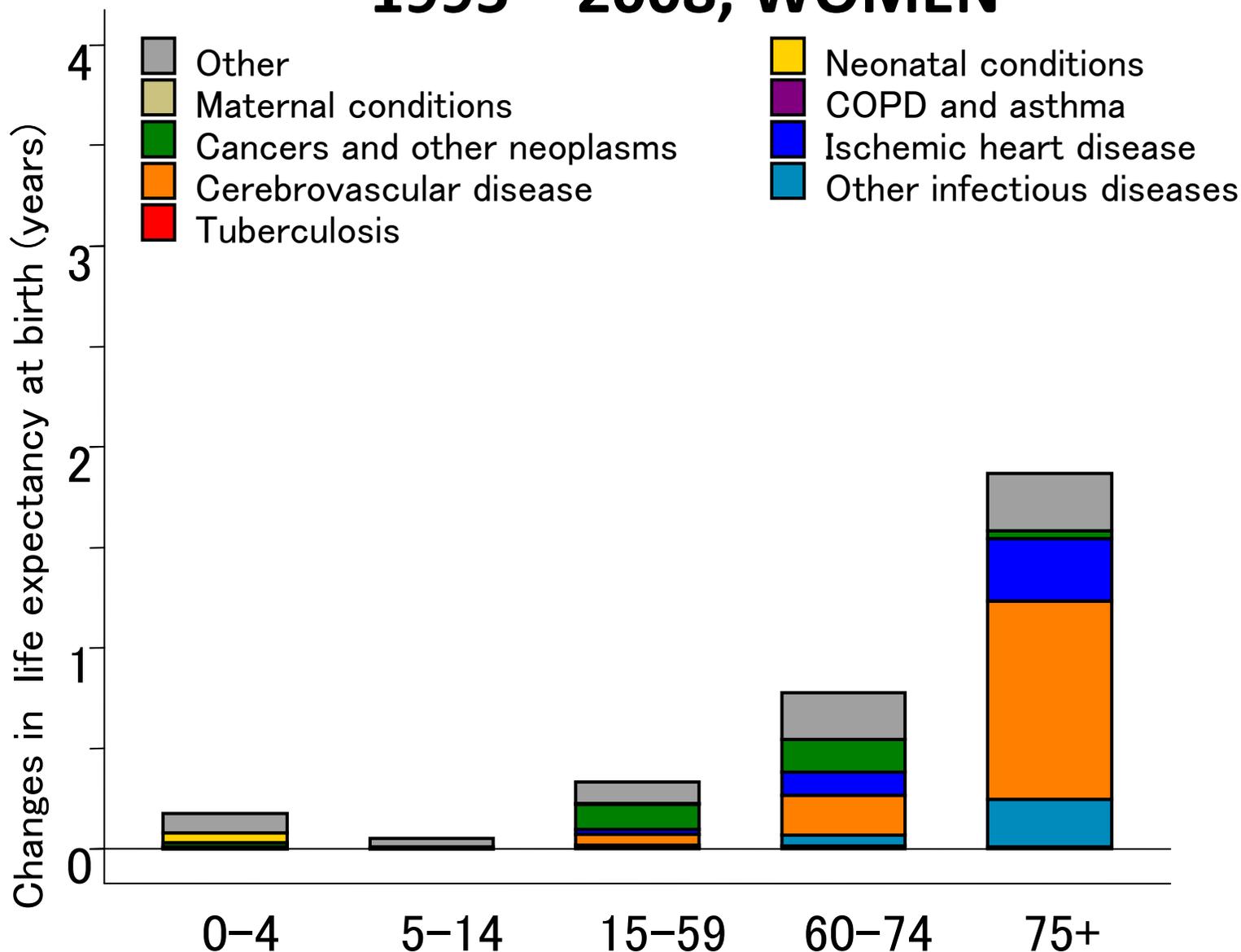
Number of deaths attributable to risk factors, 2007
(Deaths from non-communicable diseases and injuries)

（Thousands）

Legend:
- Cardiovascular
- Cancer
- Diabetes
- Other NCD
- Respiratory
- Injuries

Categories (top to bottom):
- Tobacco smoking
- High blood pressure
- High blood glucose
- Physical inactivity
- High dietary sodium
- Alcohol use
- Helicobacter pylori
- Hepatitis C virus
- Low fruit & vegetables
- Overweight/obesity
- Low PUFA
- High LDL cholesterol
- Hepatitis B virus
- Human papilloma virus
- HTLV-1
- High dietary TFA

9
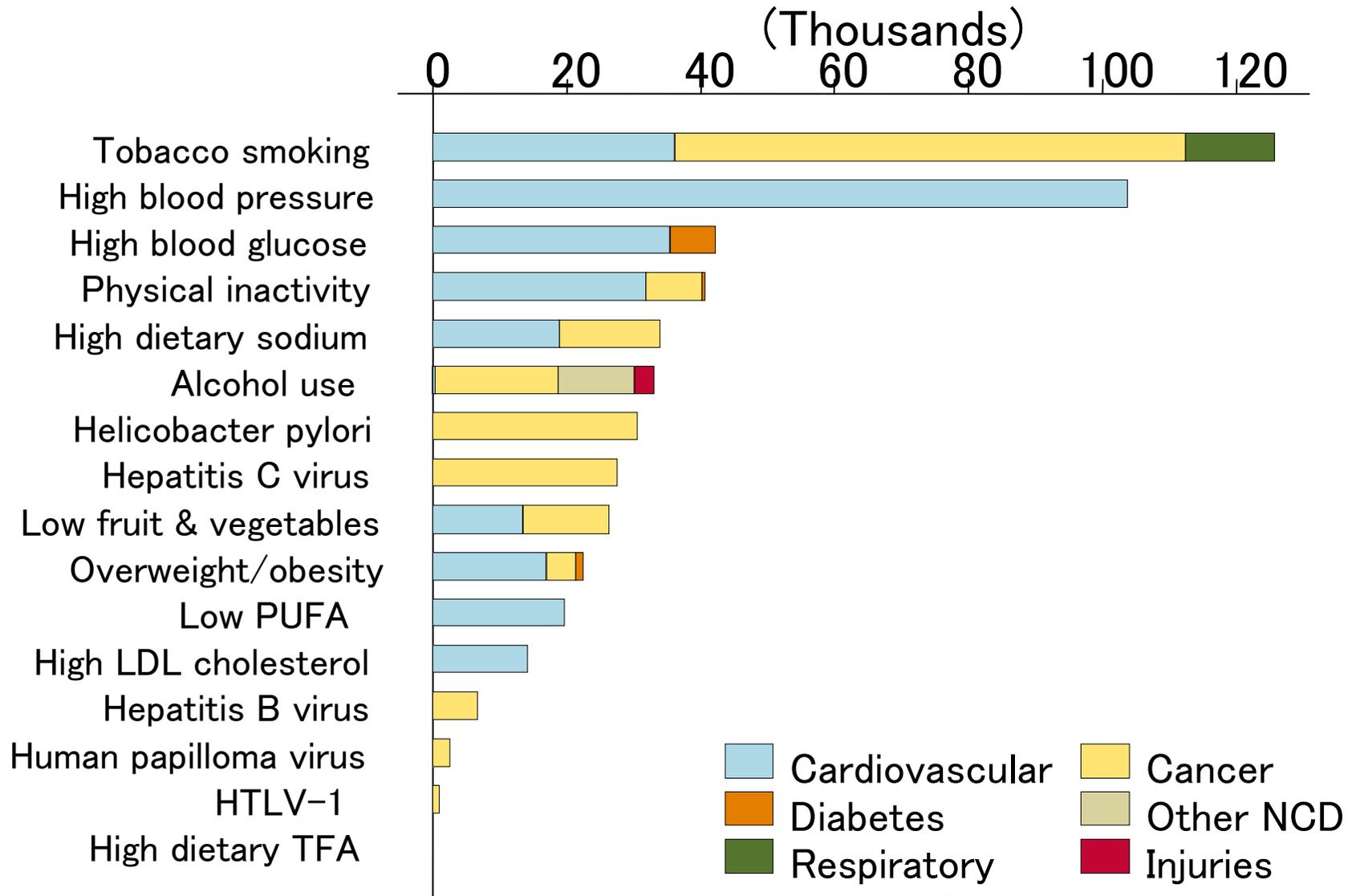
Longevity of Japanese people

- Prolonged life expectancy of the elderly because of reduced mortality of stroke and heart diseases

  - Especially, among those 75+

  - Could be attributed to

    - Health care and public health intervention for hypertension

    - Life style factors (e.g. change in diet)

- Question; Will this trend continue?

  - What happens to current 50s and 60s (future 75+)

Health care in Japan

Low expenditure for Total Health Expenditure per GDP (%)

Source) OECD Health Data 2011

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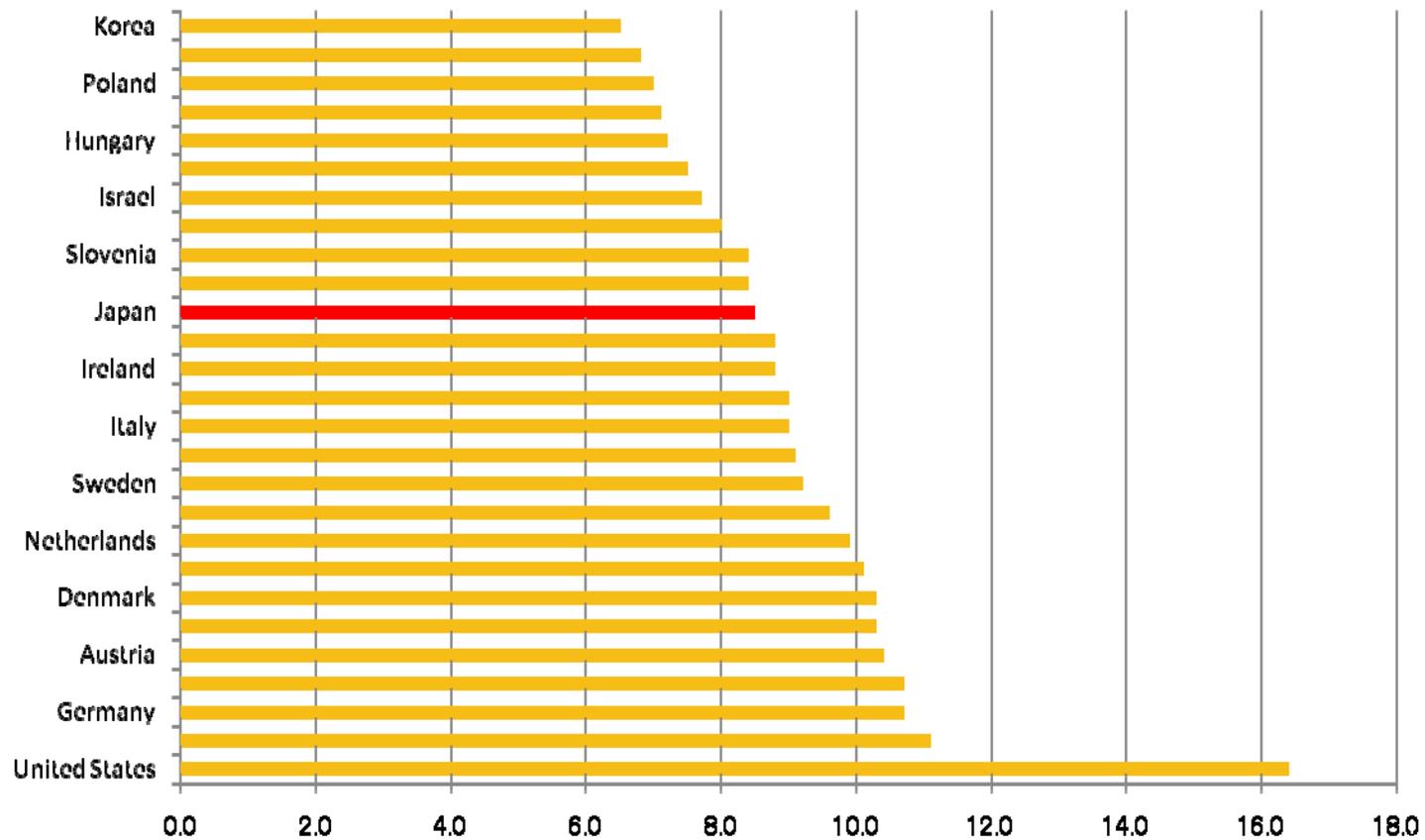
High % of public expenditure for Total Health Expenditure
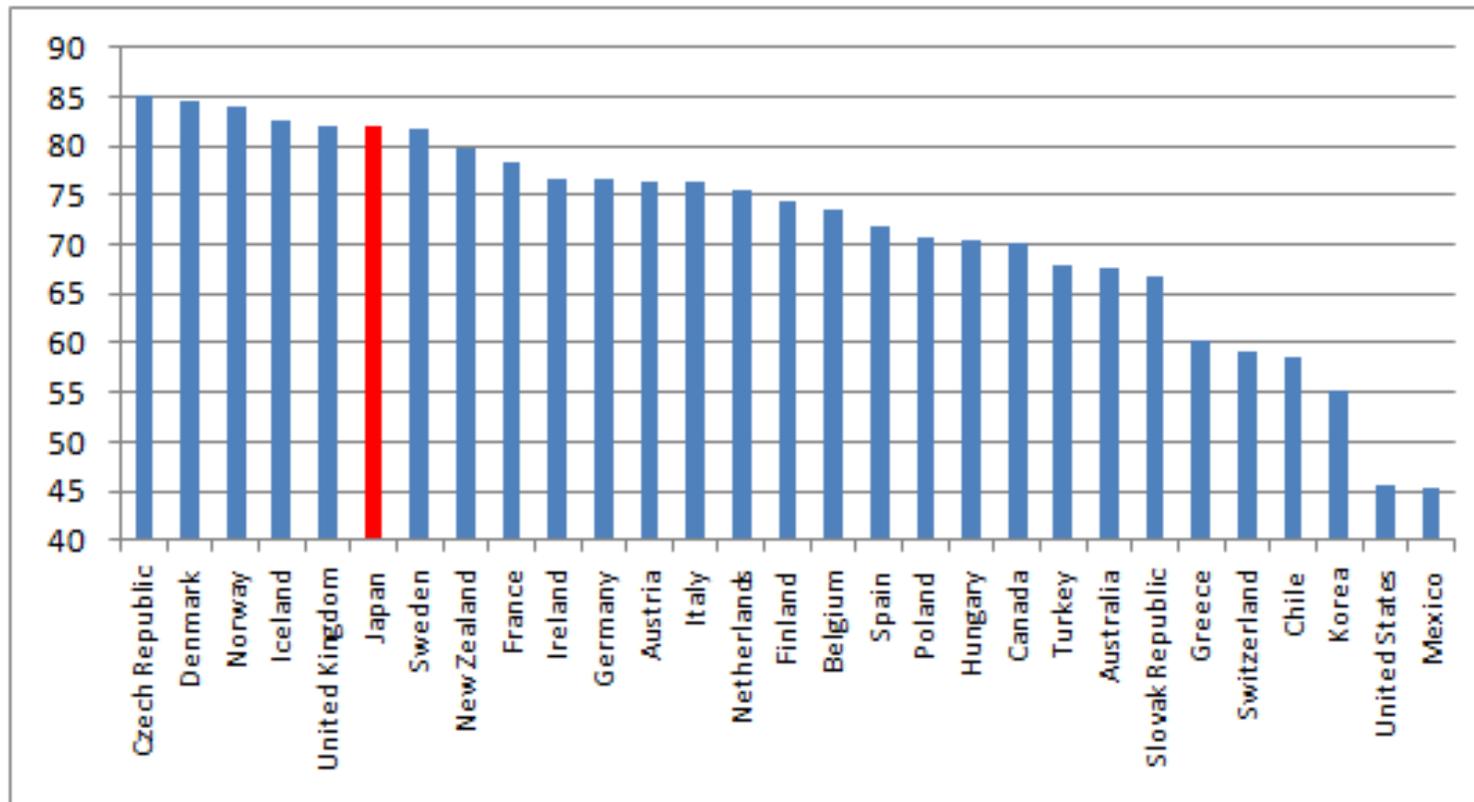
Source) OECD Health Data 2011

High level of horizontal equity in access to medical care

Country and year	Type of physician visit	Concentration index (CI)	Horizontal index (HI)
Japan (2007)	Any visit (outpatient and inpatient) & to traditional medicine	-0·0360	0·0135
Taiwan (2001)	Western physicians	-0·0180	0·0209
U.K. (1996)	General practitioner	-0·0076	0·0109
Germany (1996)	General practitioner	-0·0124	-0·0082
Germany (1996)	Specialist	0·0130	0·0243

Sources)
The estimated number for Japan is original by the authors, based on Comprehensive Survey of People's Living Conditions, 2007
The estimated numbers in Germany and UK were cited from van Doorslaer, et al. 2004, Tables 1 and 2
The estimated numbers for Taiwan were cited from Lu, et al. 2007, Table 3

Source: Ikegami et al 2011, in press

Predicted vs. Actual Out-of-pocket payment in JSTAR

Outpatient service
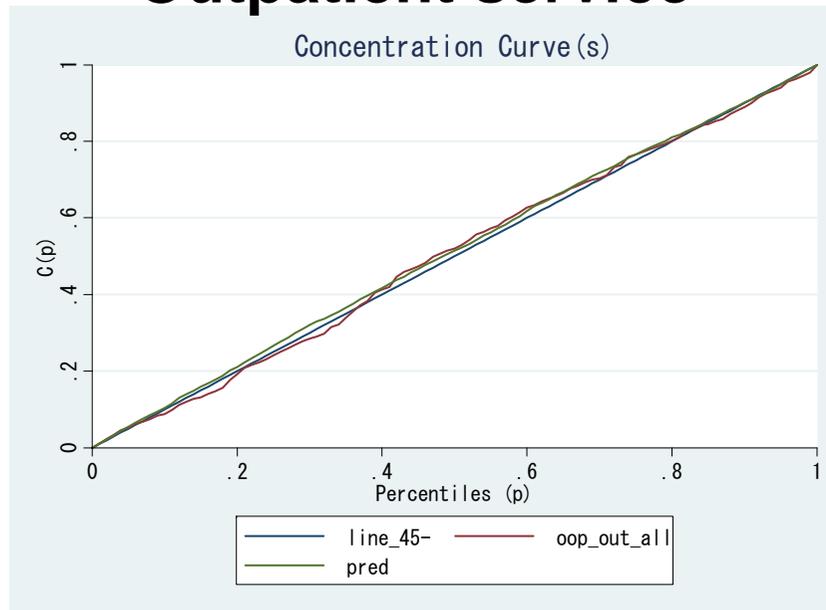
Dental service
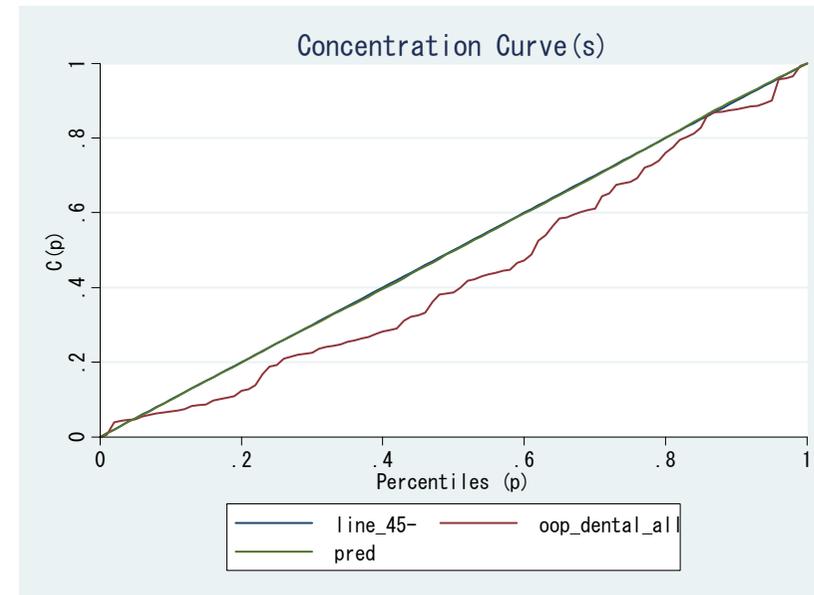
Tobit model adjusting for age, sex, smoking, chewing problem, insurance types, employment, BMI, grip strength, cognitive function, depression, sensory function, comorbidity (heart, lung, cancer, hypertension, diabetes, stroke, arthritis, cataract)

Equity in contribution to health expenditure

Kakwani index for each source of contribution

	Direct tax	Indirect tax	Social health insurance premium	Out–of-pocket payment	Total of all sources financing healthcare
Japan (2004)	0·186	-0·034	-0·043	-0·061	-0·021
Korea (2000)	0·268	0·038	-0·163	0·012	-0·024
Taiwan (2000)	0·260	0·030	-0·031	-0·096	-0·012
Germany (1989)	0·249	-0·092	-0·098	-0·096	-0·045
France (1989)	NA	NA	0·111	-0·340	0·001
UK (1993)	0·284	-0·152	0·187	-0·223	0·051
US (1987)	0·210	-0·067	0·018	-0·387	-0·130

*   Estimation of Germany, France, UK, and US cited from Wagstaff, et al. (1999) Table 6.[1]

Estimation of Taiwan and Korea cited from O'Donnell, et al. (2008) Table 3.[2]

Source: Ikegami et al 2011, in press

Share of out-of-pocket payment in household income

OOP payment and its share of household equivalent income

JSTAR 1st wave report, Ichimura, et al. 2009

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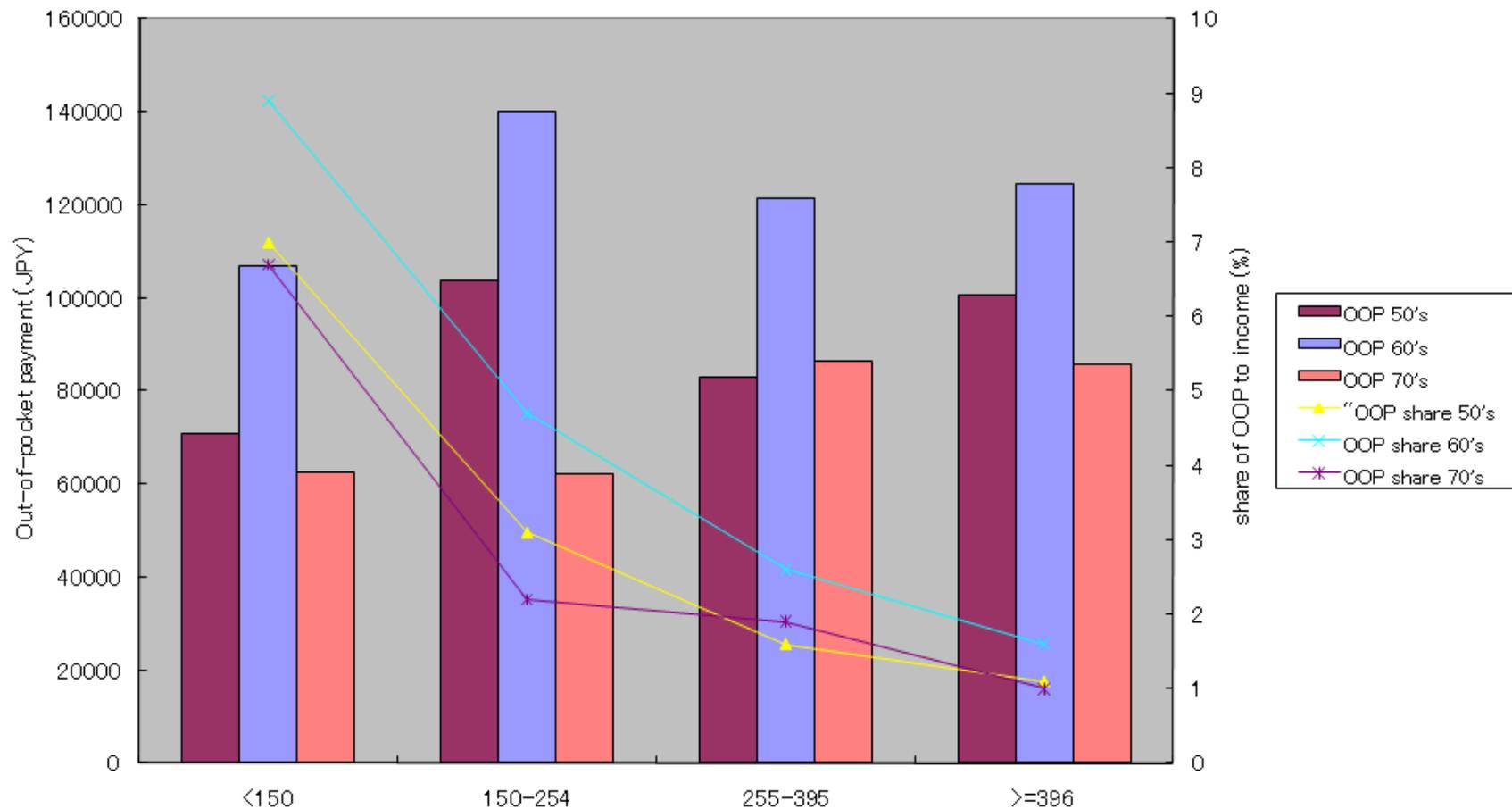
Access to healthcare in Japan

- **High achievement of equity in access and contribution to healthcare**

- **A sign of gap across income status**

- **Recent reform plan (increase in copayment rate for the elderly) needs precautious assessment on health impact among the elderly**

Post-operative mortality comparable with U.S.

|	Japan (Diagnostic Procedure Combination 2006-8)				U.S. (Nationwide Inpatient Sample 2008)			
	n	Age >= 75 (%)	Comorbidity index (Charlson Index>2) (%)	Crude mortality (%)	n	Age >= 75 (%)	Comorbidity index (Charlson Index>2) (%)	Crude mortality (%)
Lung cancer surgery	28,096	27.0	45.0	0.96	38,399	25.4	72.6	2.50
Esophagectomy	5,398	15.1	33.9	4.37	2,024	17.0	56.7	7.76
Colorectal cancer	70,678	33.8	35.1	2.06	341,666	26.4	30.9	4.35
Hepatectomy	16,502	22.6	74.4	2.65	3,676	16.1	76.8	5.20
Pancreatic cancer surgery	10,143	24.1	39.6	2.97	8,007	22.6	69.7	4.40
Coronary bypass graft	13,382	28.5	21.3	3.02	222,250	21.5	26.6	2.22
Valvular surgery	11,669	26.3	7.2	3.74	107,939	33.2	23.1	5.33

Source: Hashimoto et al 2011, in press

Poor coverage of chronic conditions in primary care
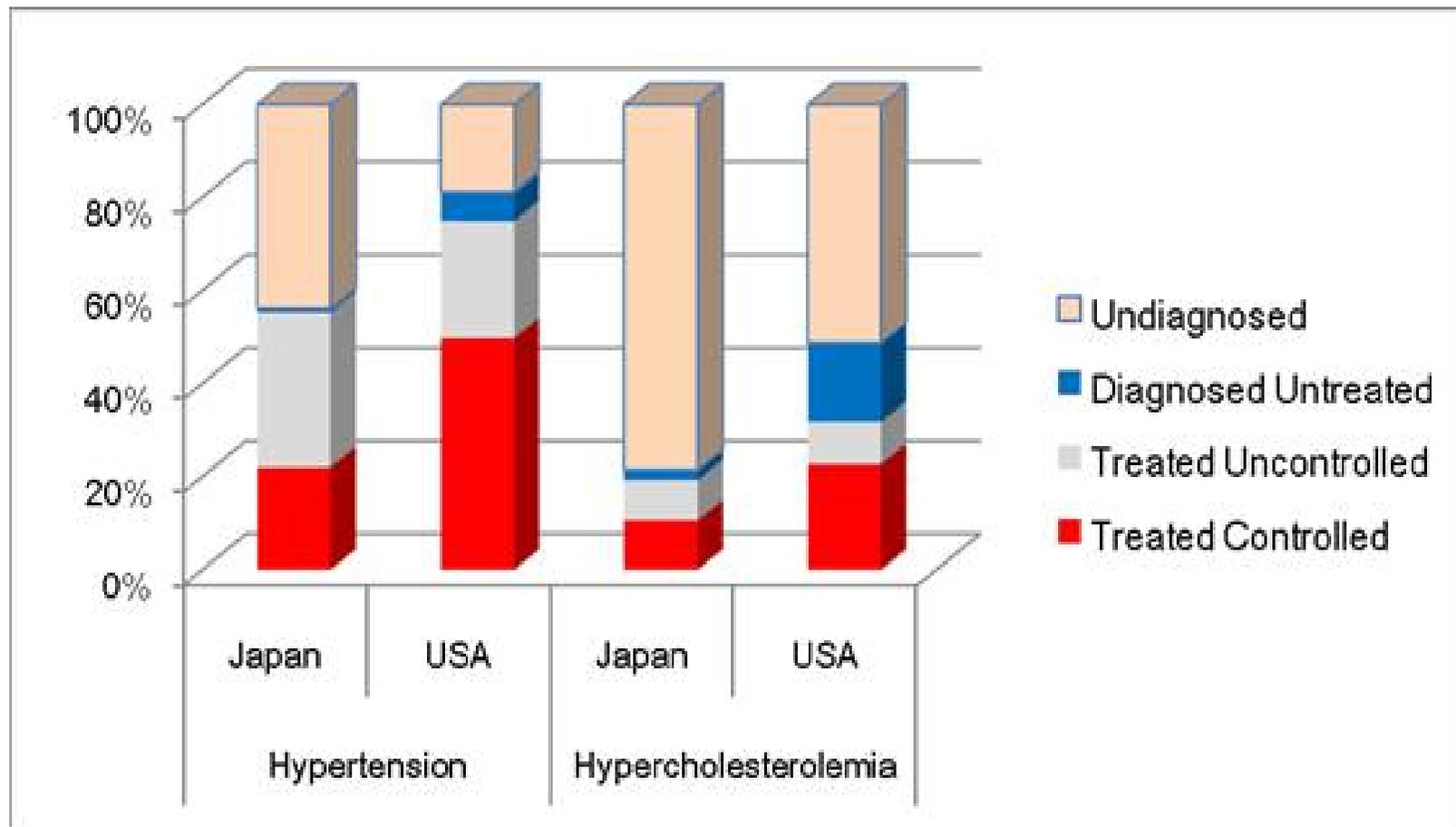
Source: Hashimoto et al 2011, in press *20*

Preventive service in Japan

- Not covered by National Health Insurance

- Segmented according to work status

- National health-checkup system since 2010, though the gap b/w segments remains

Preventive service use in JSTAR population
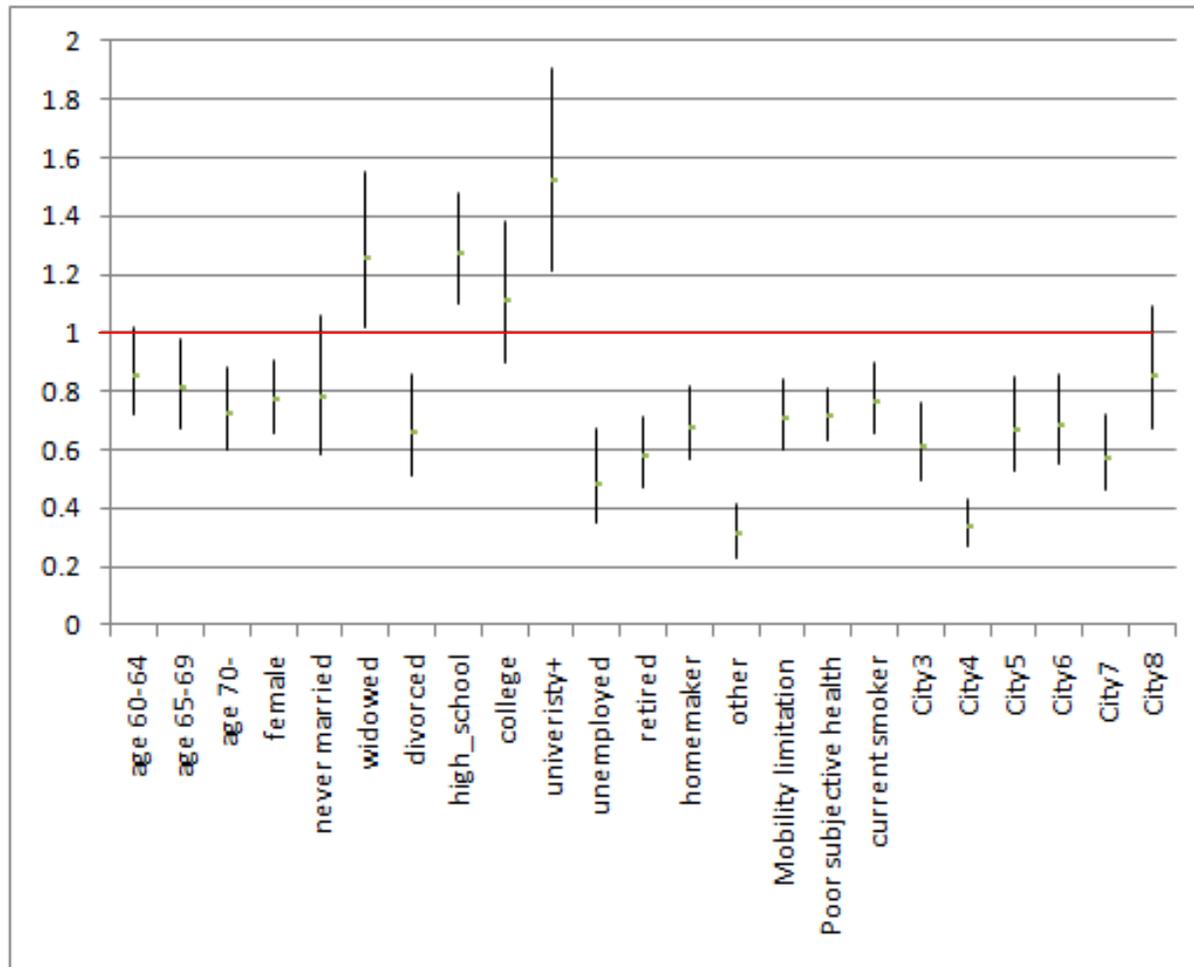
- Odds ratio of health checkup in the previous year

- Less chance if older, female, less educated, unemployed/retired, and disabled

- Considerable variation across cities

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Baseline conditions and trajectory of healthcare expenditure (N=1146, whose claim data available)

Expenditure (JPY)
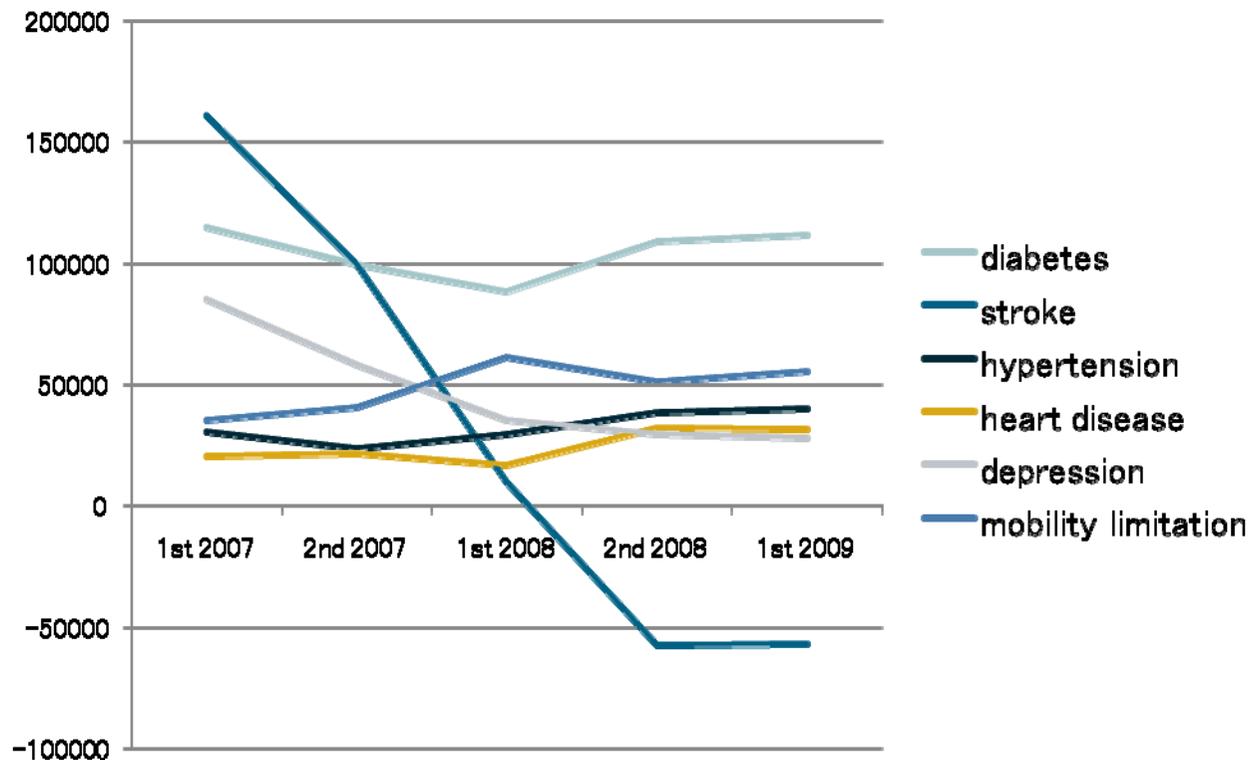
- ■ **Adjusted for age, sex, obesity, ADL, city**

- ■ **Multivariate regression on baseline characteristics**

- ■ **Diabetes, hypertension, and mobility limitation related to consistently higher expenditure over time**

- ■ **Stroke showed decrease over time, shift to long-term care?**

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Quality of healthcare and projection of expenditure

- Poor primary care and preventive services on conventional risk factors

- May lead to health gap across socio-economic positions

- May also result in deceleration/deterioration of longevity (early sign in male life expectancy, already)

Life style
special focus on diet

Is Japanese diet healthy?

- Traditional meal was very salty

- Improvement in diet protein and cholesterol as well as reduction in salt intake contributed to stroke (bleeding) reduction

- "Westernization" of dietary pattern

- Rice cereal remains as a core meal

- More fish than meat (unsaturated fat)

# Dietary pattern observed in JSTAR population

protein (g/1000Kcal/day)
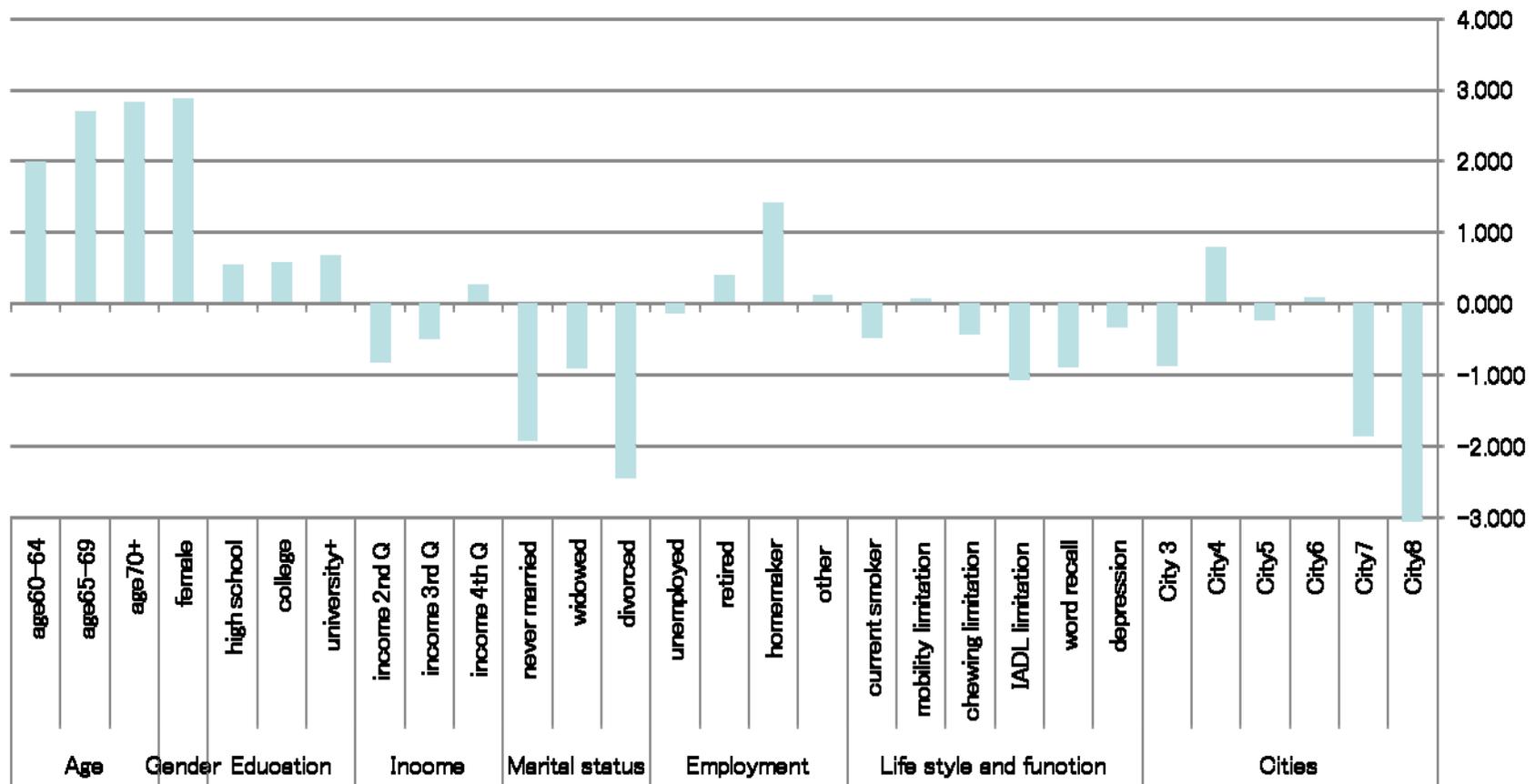
# Dietary pattern observed in JSTAR population

Poly Unsaturated Fat (g/1000Kcal/day)
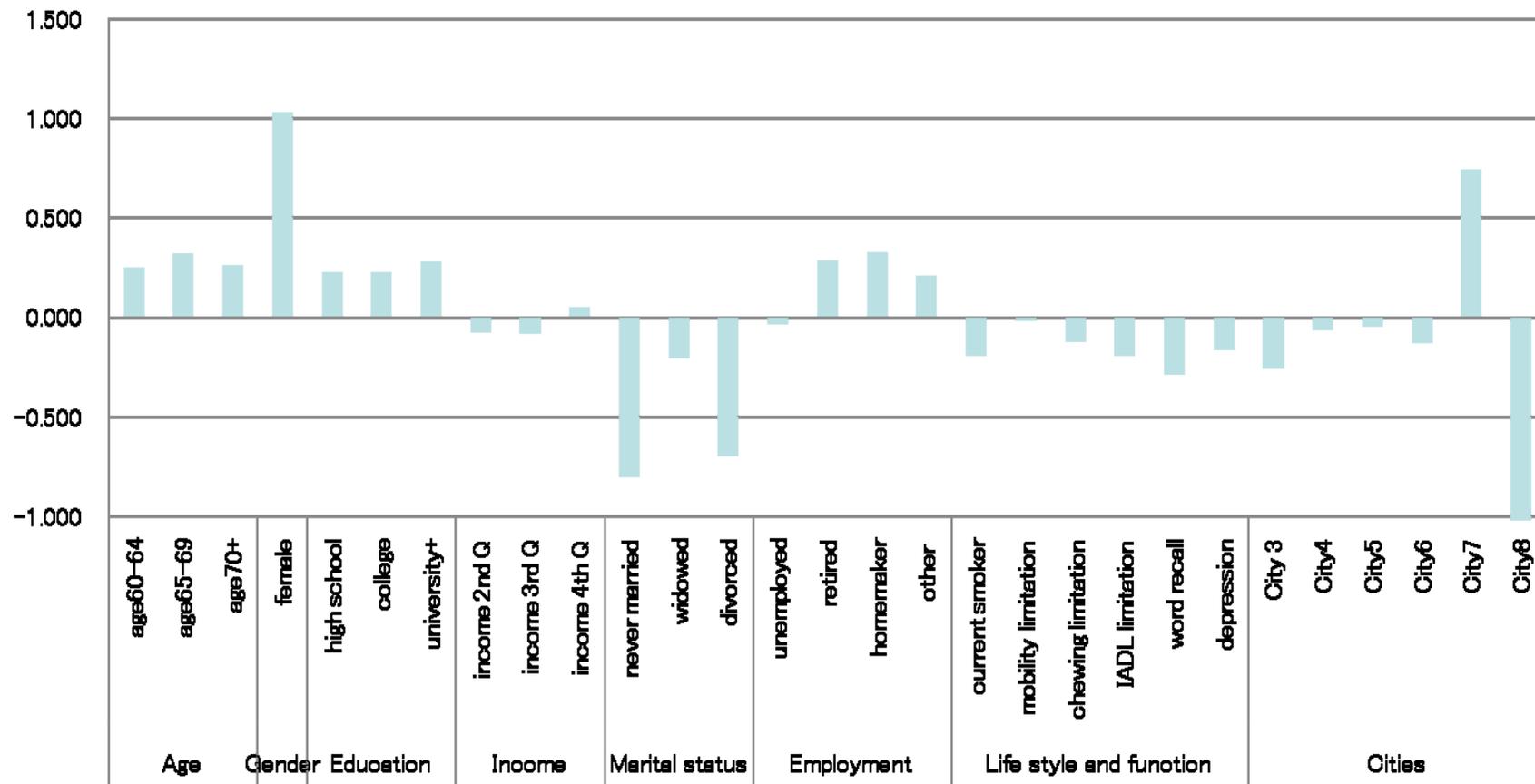
Dietary pattern observed in JSTAR population

Vegetables/Fruits (g/1000Kcal/day)

Factors associated with healthy diet

- Naha people showed better profile of fat intake (less saturated, more unsaturated) and lower protein intake

- Unmarried status related to poorer diet (less protein and unsaturated fat, less vege/fruits)

- Older and retired/homemaker had better profile

- Functional limitation relates to poor diet

Conclusion (tentative)

- **So far so good**

- **Quality problems in primary care and preventive service is a threat both to population health and financial sustainability**

- **Life style modification (tobacco cessation and healthy diet) should be enhanced to keep healthy ageing in Japan, and close a health gap among the elderly.**

Thank you

Comments?

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