Micro data analysis of medical and long-term care utilization among the elderly in Japan

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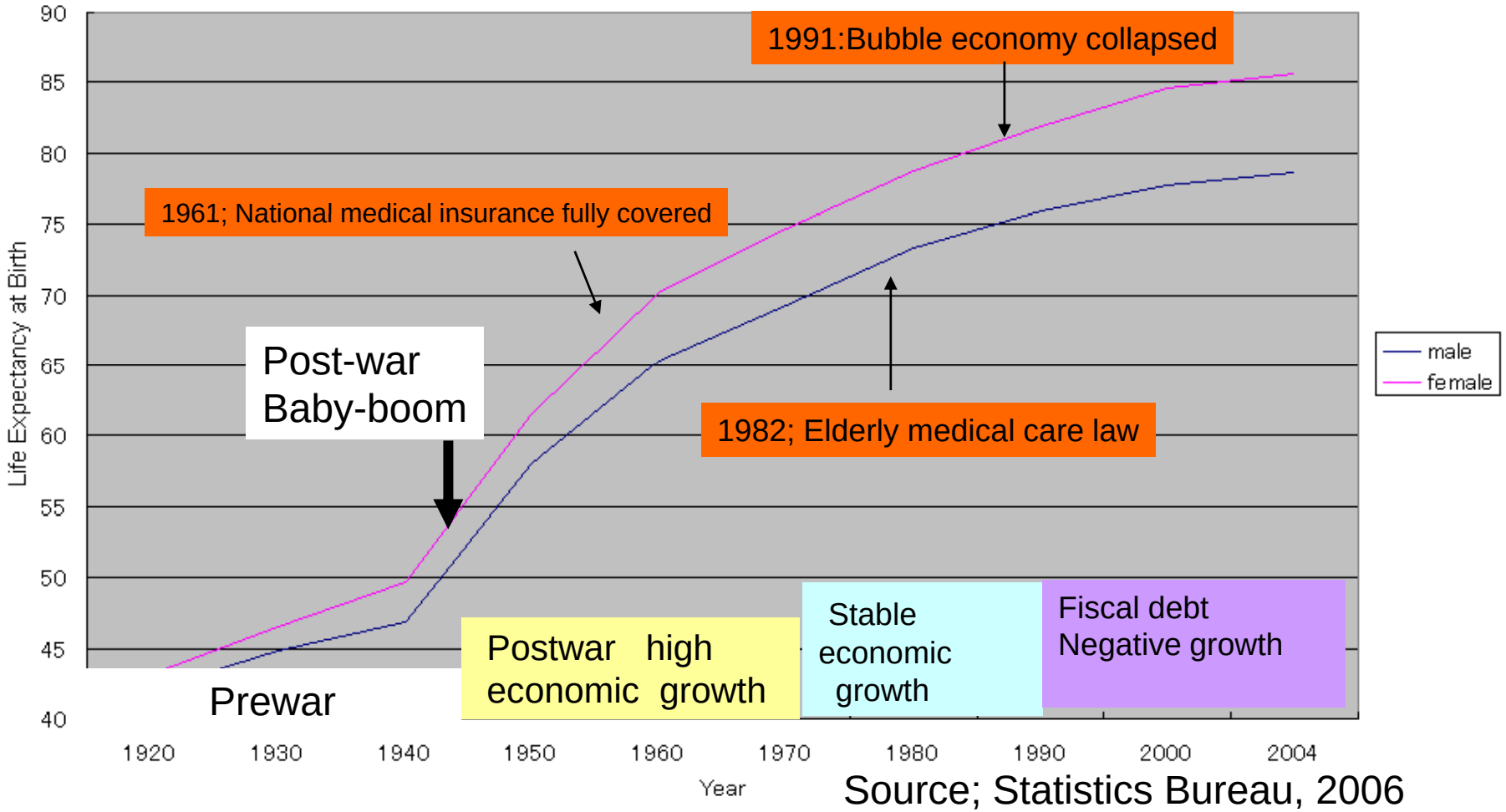
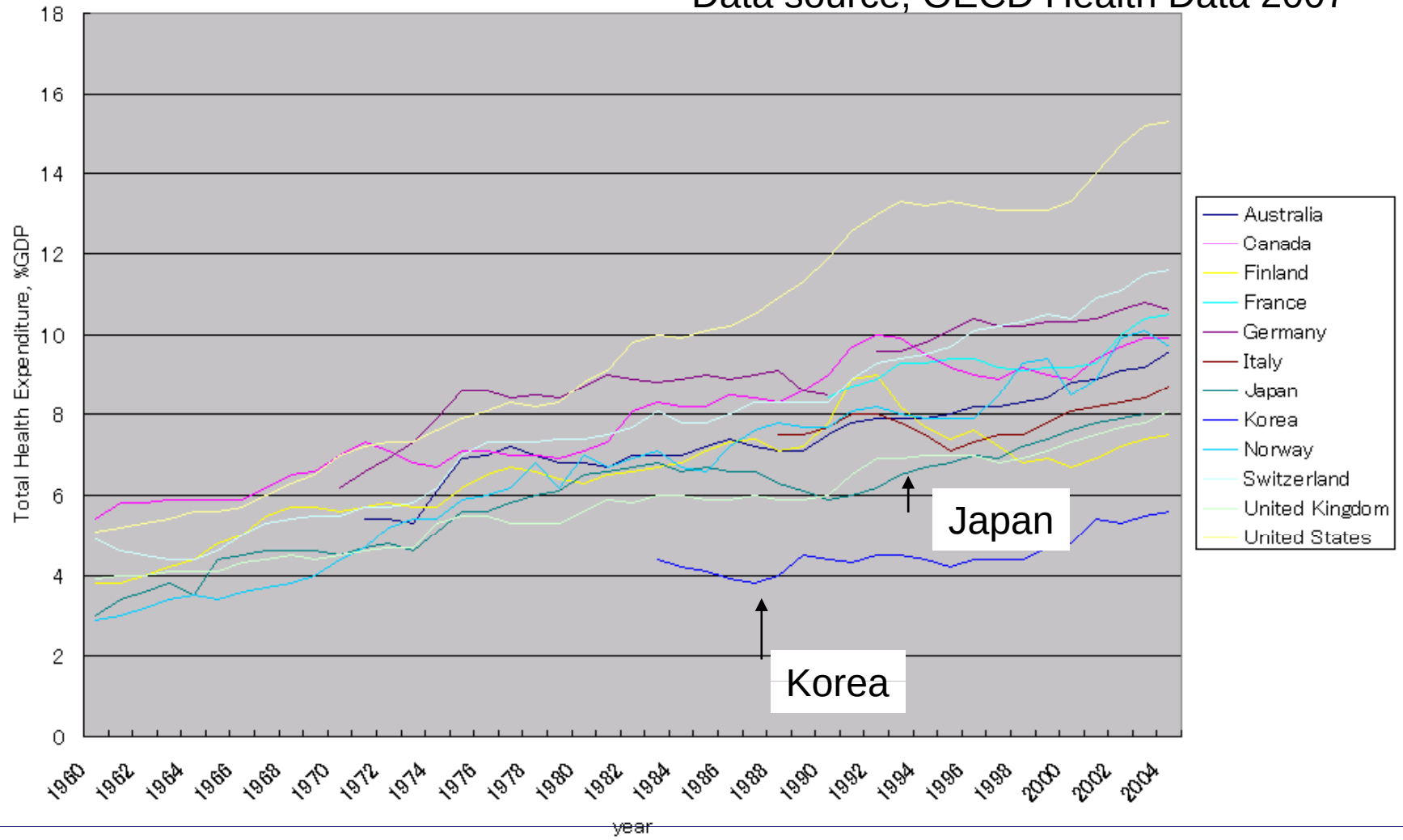
Life Expectancy 1920-2004, Japan



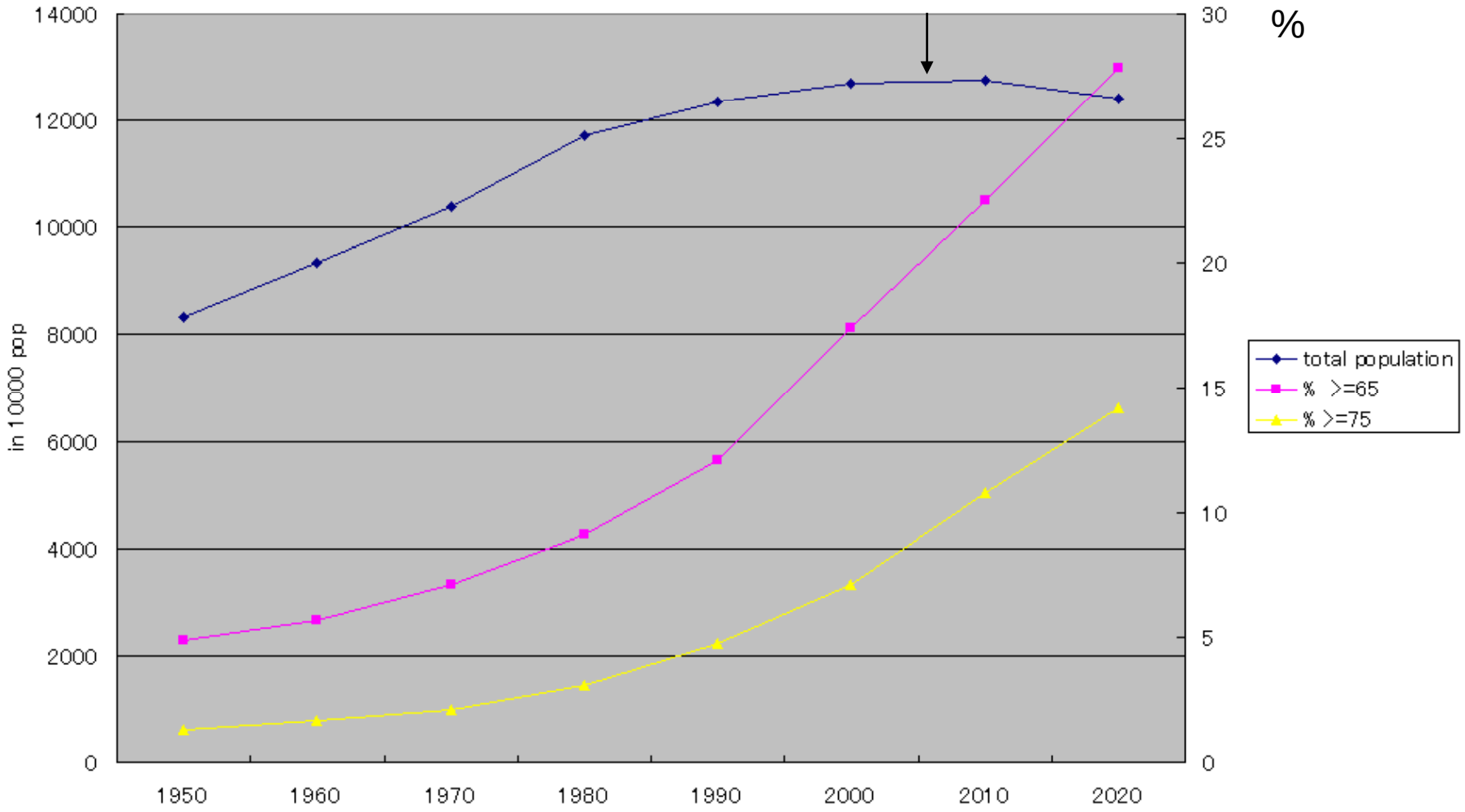
Source; Statistics Bureau, 2006

Total Health Expenditure % GDP 1960-2004 in selected OECD countries

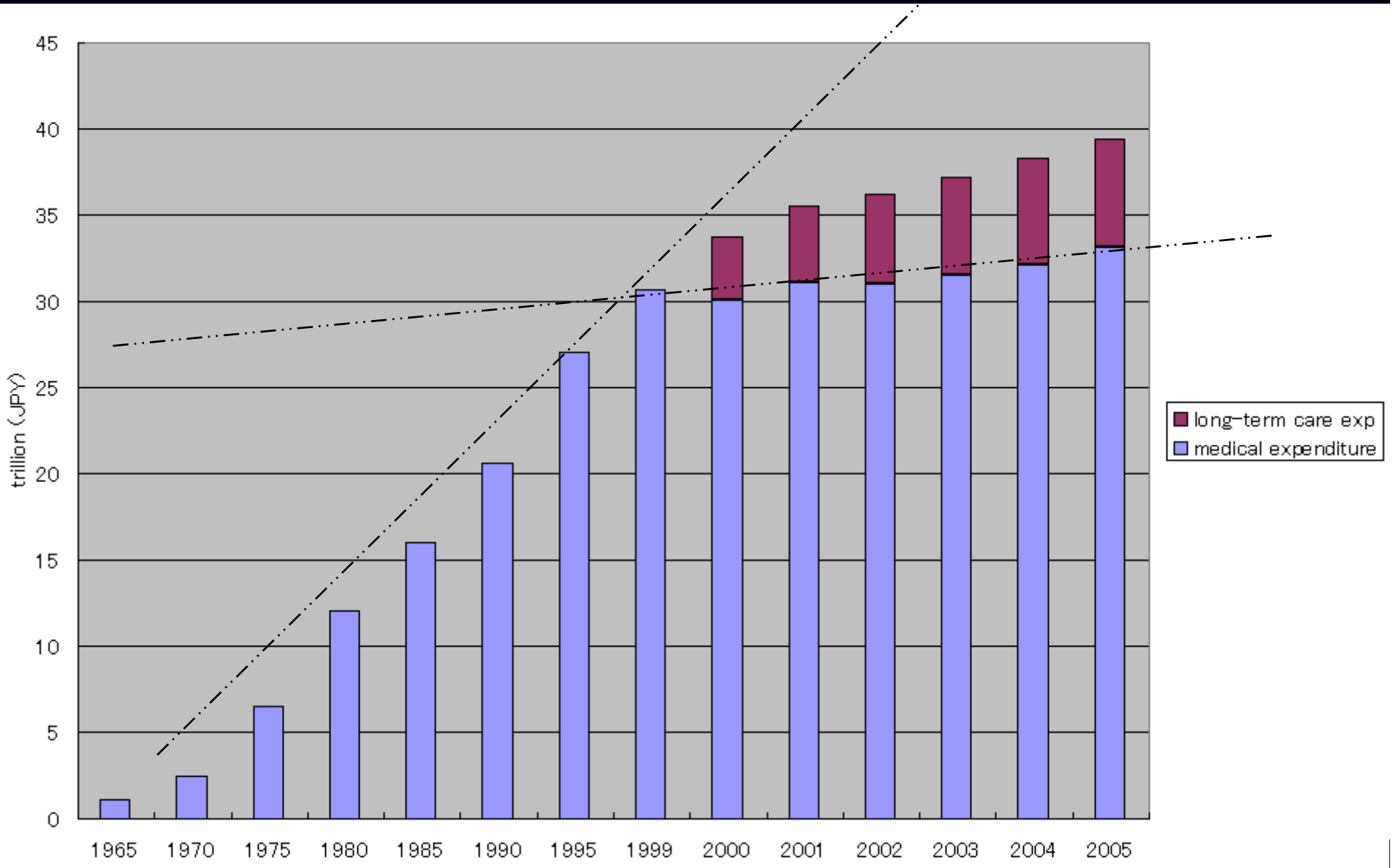
Data source; OECD Health Data 2007



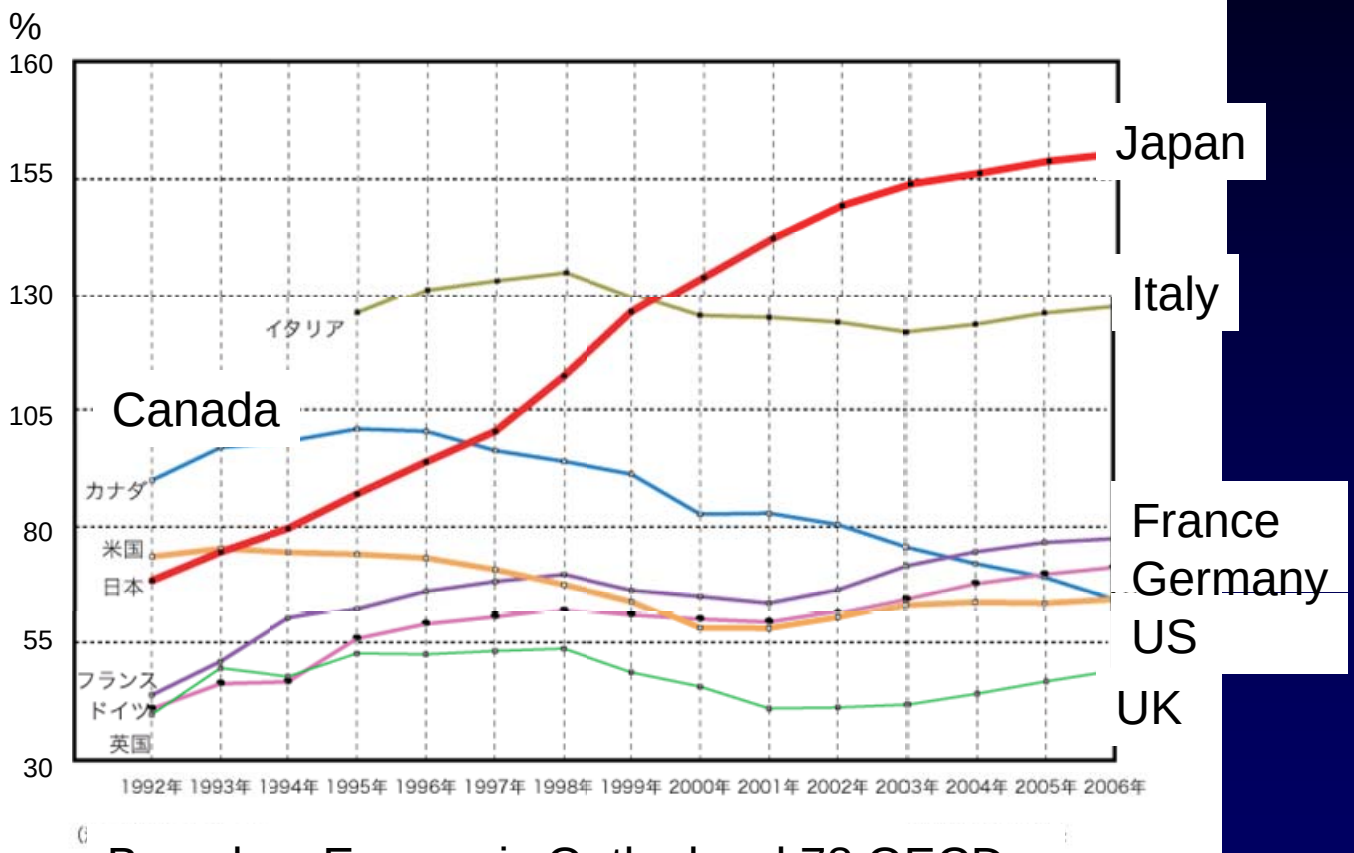
Japanese population and elderly proportion; 1950-2020



Medical and Long-term care expenditure; 1965-2005



Debt %GDP in selected OECD countries



Based on Economic Outlook vol.78 OECD

National Health Insurance

- Non-selective, mandatory
- Premium fixed (regional) or parallel with income levels (employee)
- 30% copayment (age <70)
- Virtually free access to any service/facilities
- 50% premium, 16% copayment, the rest from government general account
- About 12% of annual budget expense

Care provision and payment

- 9,026 Hospitals/clinics
- Large public hospitals for acute care
- Small private clinics/hospitals for non-acute care -> longer LOS
- 2.0 physicians per 1000 pop (1.6 for Korea)
- Fee-for-service basis with national fee schedule
- Fee revision every 2 years under macro cap
- Recent bundling and per-diem payment

Expenditure control

- Demand side control
  - Increasing copayment rate, esp for elderly
- Supply side control
  - Fee schedule revision with macro cap
    - Negative/zero ceiling since 2002
  - Bed control
    - Macro; Regional med care planning
    - Segmentation; Bed categories (general & care)
    - and end-of-life treatment

Long-term care insurance

- Since 2000
- Non-selective, mandated for >40
- Municipal insurers
- Eligible criteria (6 -> 7) for disabled and/or >=65
- Monthly upper limit of allowance with 10% copayment
- Fee-for-service basis with fee schedule
- Non-profit, for-profit, and public providers

Cost control

- Homecare
  - Revision of eligibility criteria
    - A larger # of elderly with minor disability
  - New and cheap service category
    - “Preventive Care” is cost saving?
  - Capitation without enough pool
- Institutionalized care
  - Meal and hotel cost out of coverage
  - Cutback policy of care beds

Current study

- End-of-life “total health cost” for Japanese elderly
  - Mandated public medical and long-term care
  - Comprehensive picture of outpatient, hospital (including prescription and drug), homecare, and institutional care
  - Pattern of utilization over Time-to-death (TTD)
- Red herring debate (Zweifel, et al. 1999) revisited

Data source

- Municipal insurer's claim bill data
  - A prefectural authority in Kyushu island
- Decedents data (2001-2003) N=50,857
  - Monthly utilization by service types
  - Month to death (0-11)
- Survivors (as of 2004.4) data (2002.4-2003.3) N=364,484

Descriptive analysis based on Two-part model
("probability of use" X "expenditure | prob>1")

Table 1	Basic characteristics of decedents and survivors					
		Decedents	%		Survivors	%
	Sampled year	2001−2003			Apr.2002−Mar.2003	
	Total number	50,857			364,484	
	Age					
	65−74	8,558	(16.8)		125,941	(34.6)
	75−84	19,968	(39.3)		177,720	(48.7)
	>=85	22,331	(43.9)		60,823	(16.7)
	Death place					
	nursing homes	6,218	(12.2)			
	hospitals	35,199	(69.2)			
	others	9,440	(18.6)			
	Cause of death (available only for subsample)					
	N	3,244				
	Stroke	452	(13.9)			
	Heart disease	392	(12.1)			
	Neoplasm	717	(22.1)			
	Other diseases	1,723	(53.1)			

Figure 3. Outpatient Service Use and Month to Death

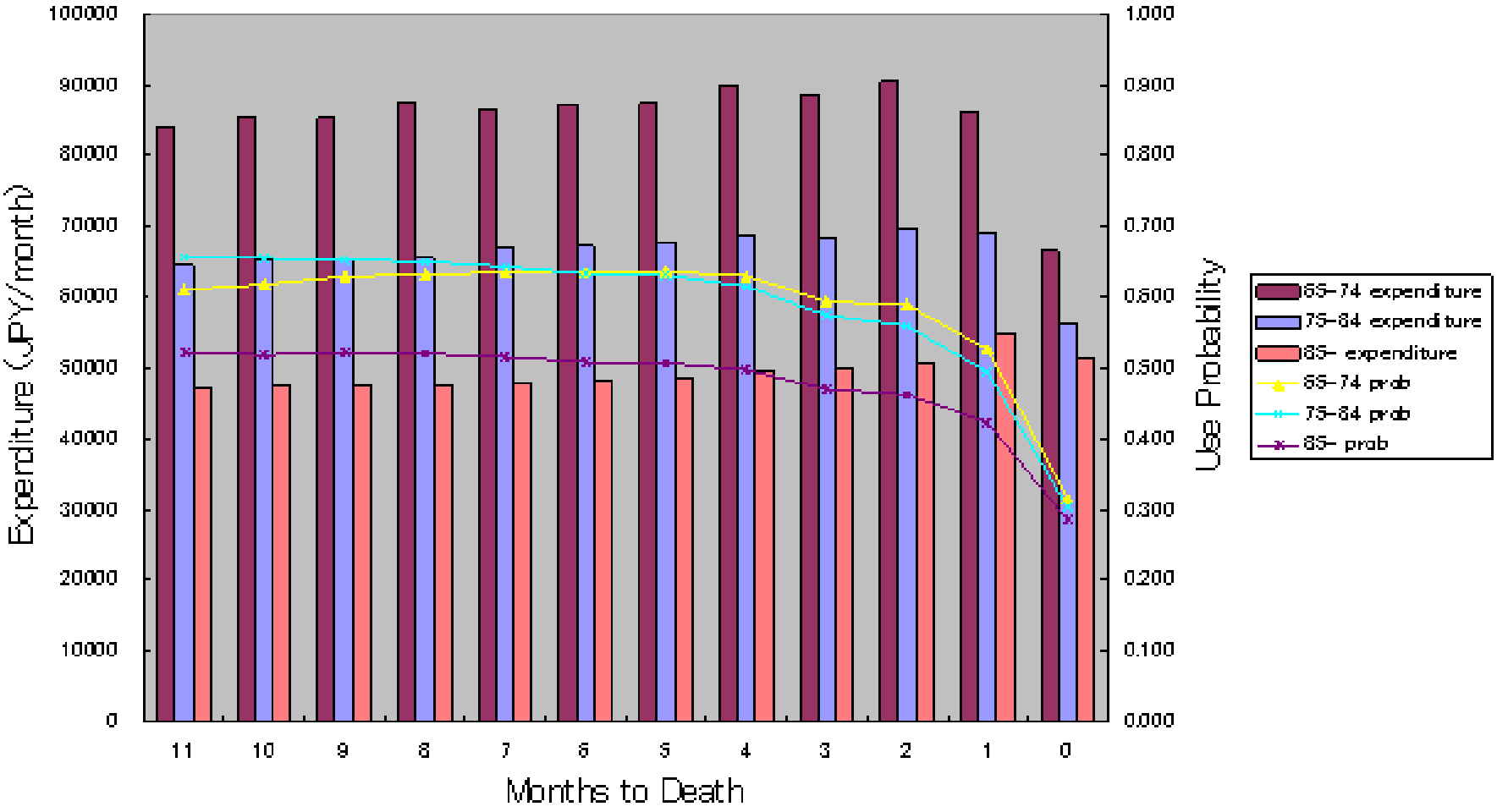


Figure 4. Hospital Service Use and Month to Death

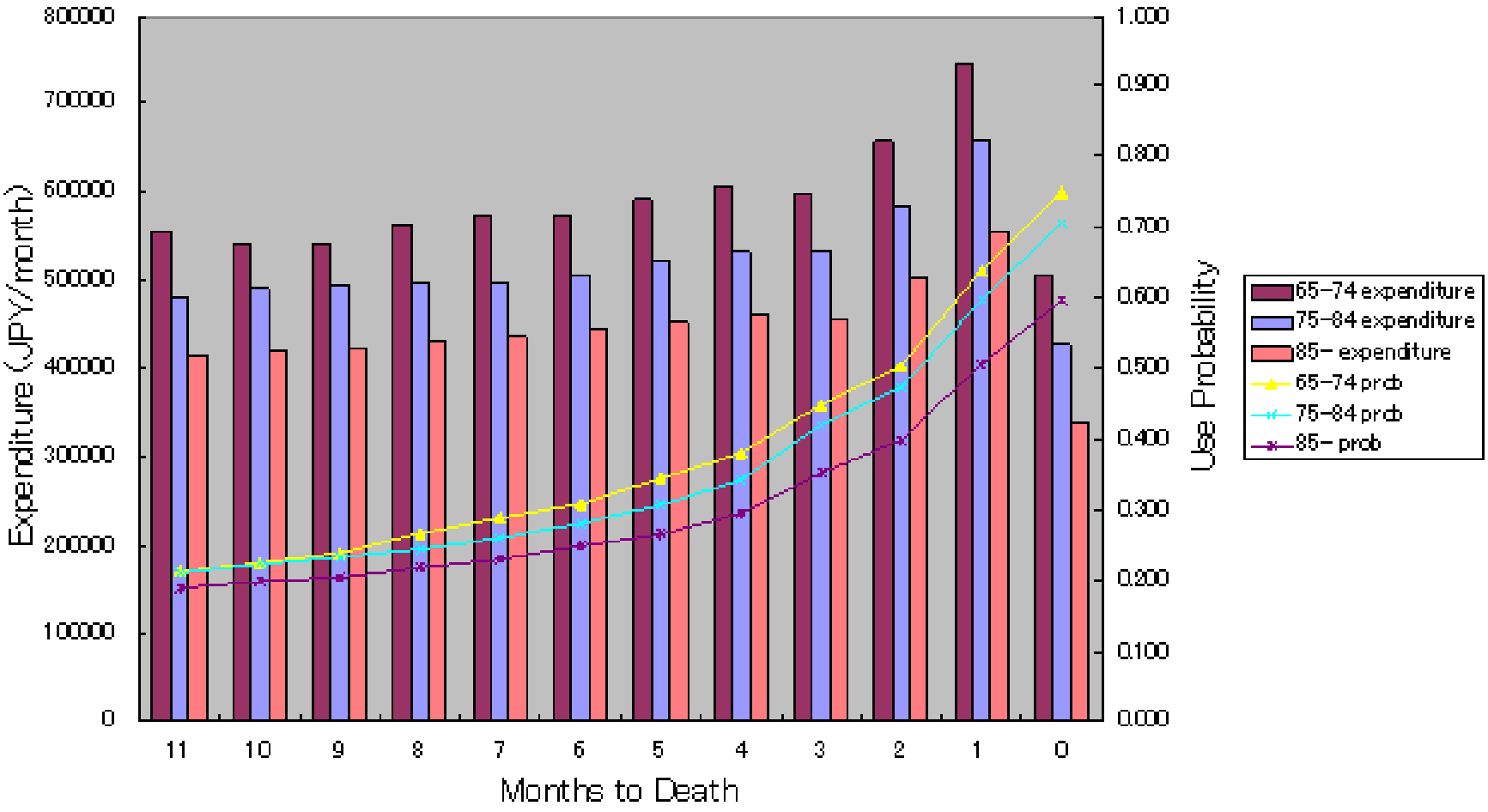


Figure 6. Institutaional Care Service Use and Month to Death

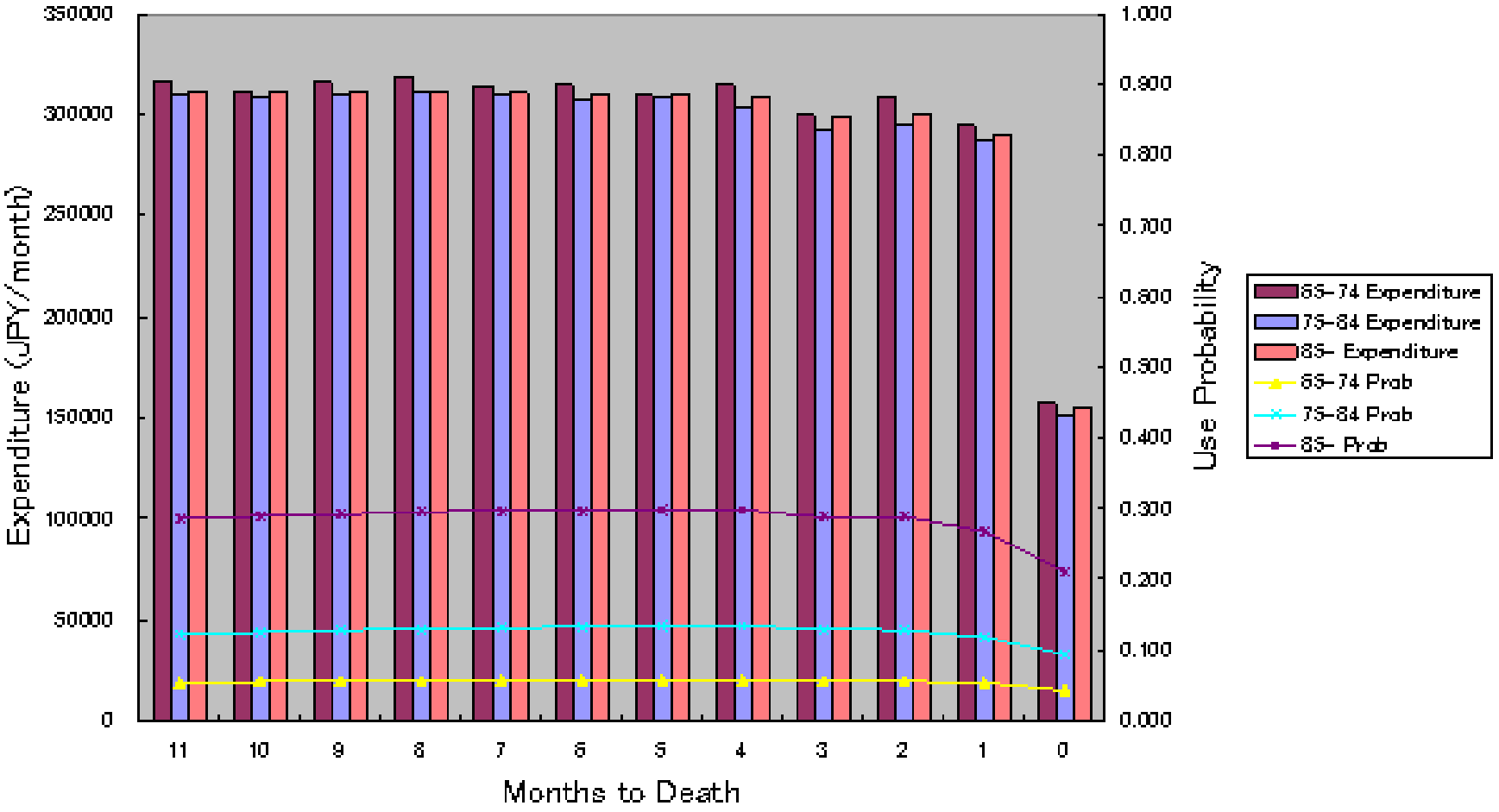


Figure 7. Outpatient Service Use by Survivorship and Age

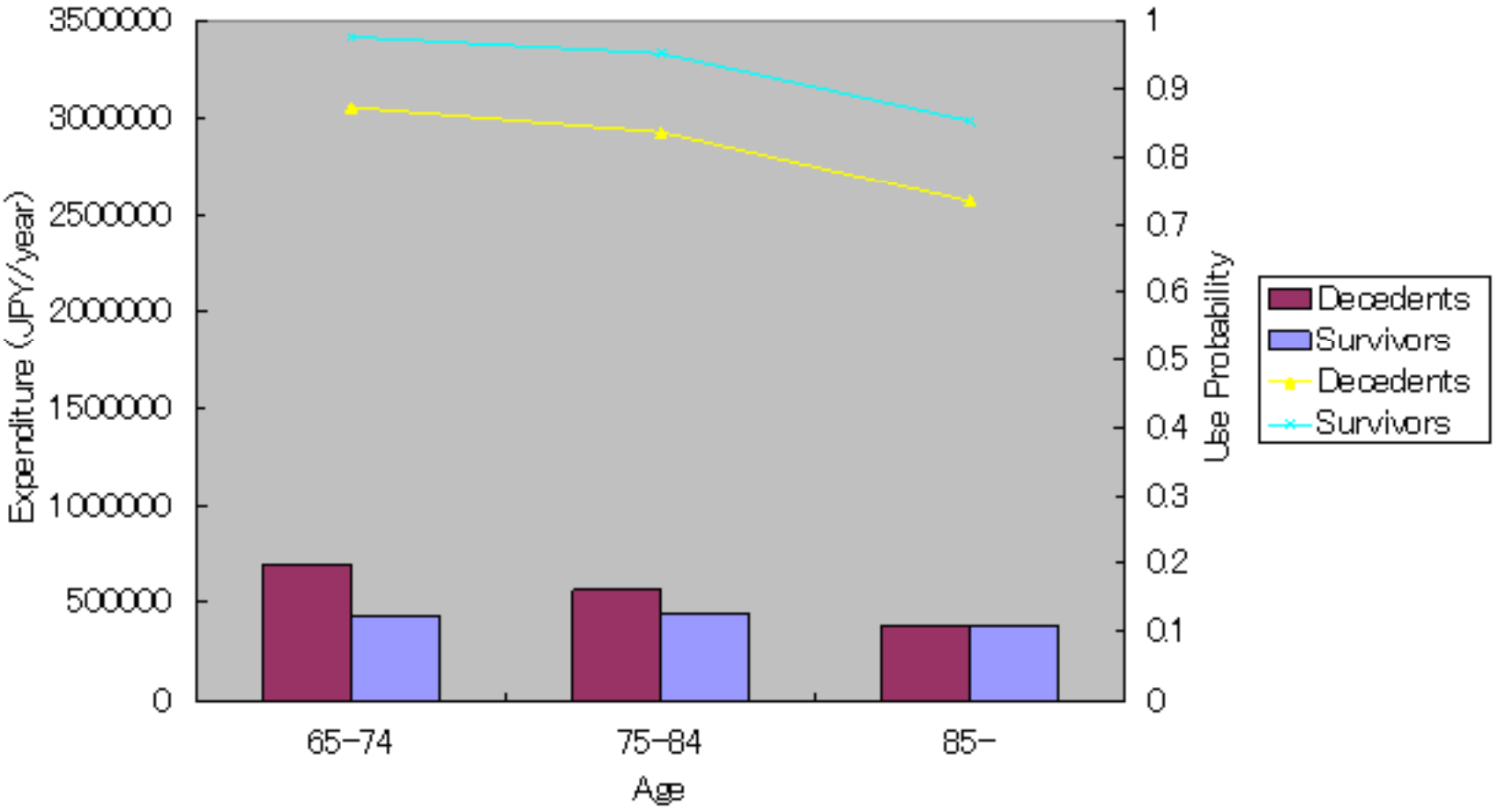


Figure 8. Hospital Service Use by Survivorship and Age

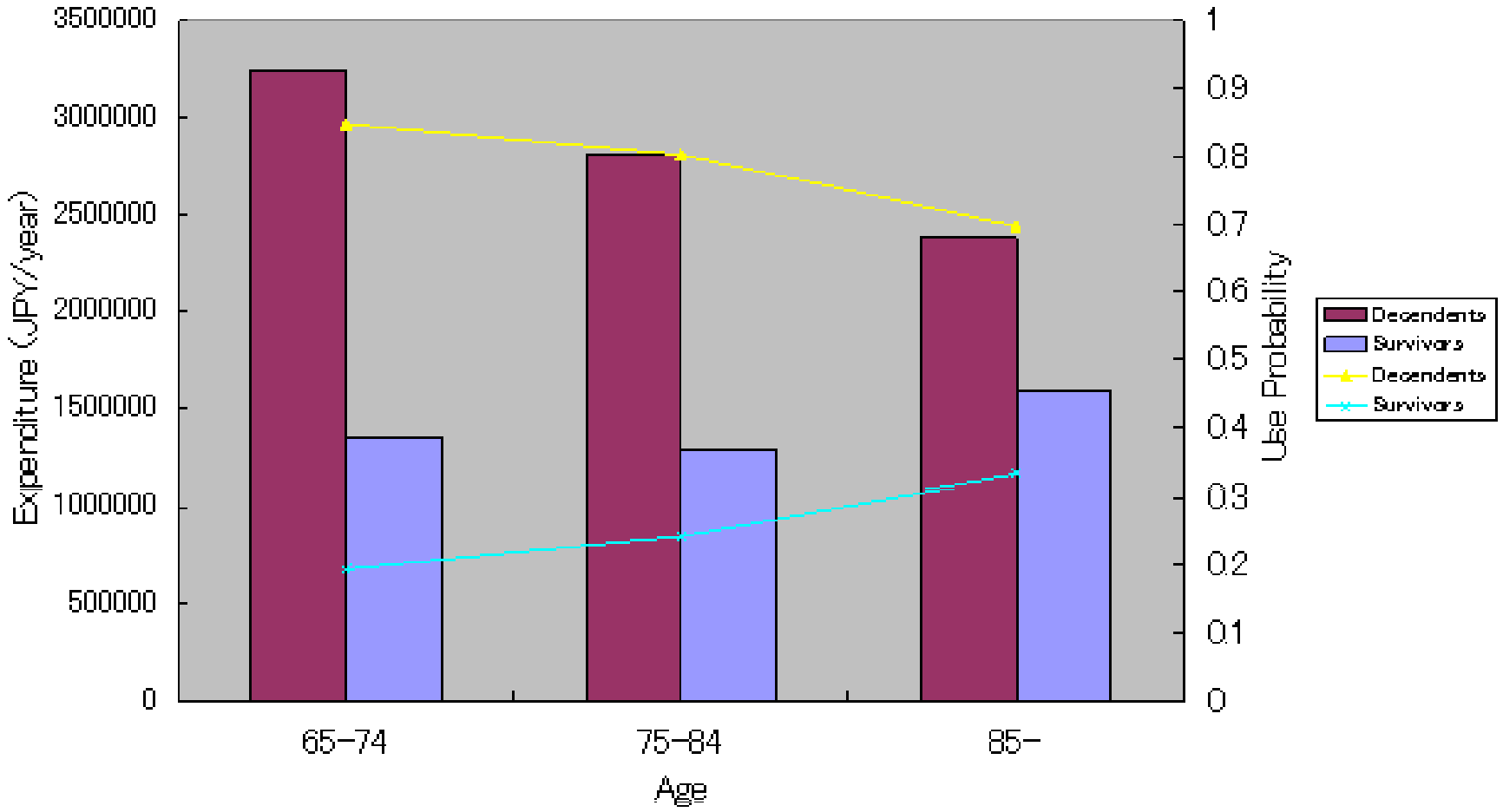


Figure 10. Institutional Care Use by Survivorship and Age

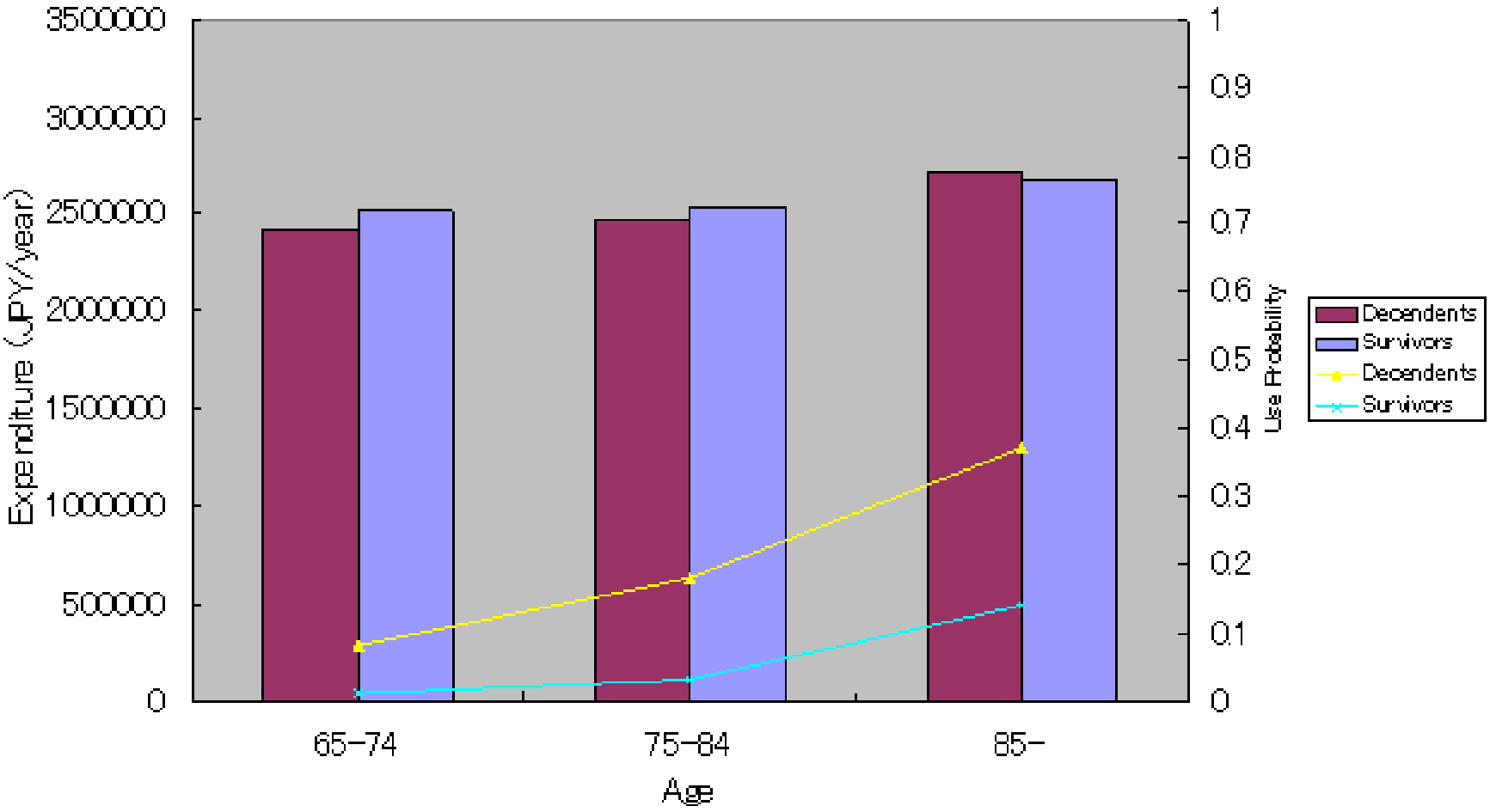


Figure 11. Average Annual Expenditure; by Service Types, Age, and Survivorship

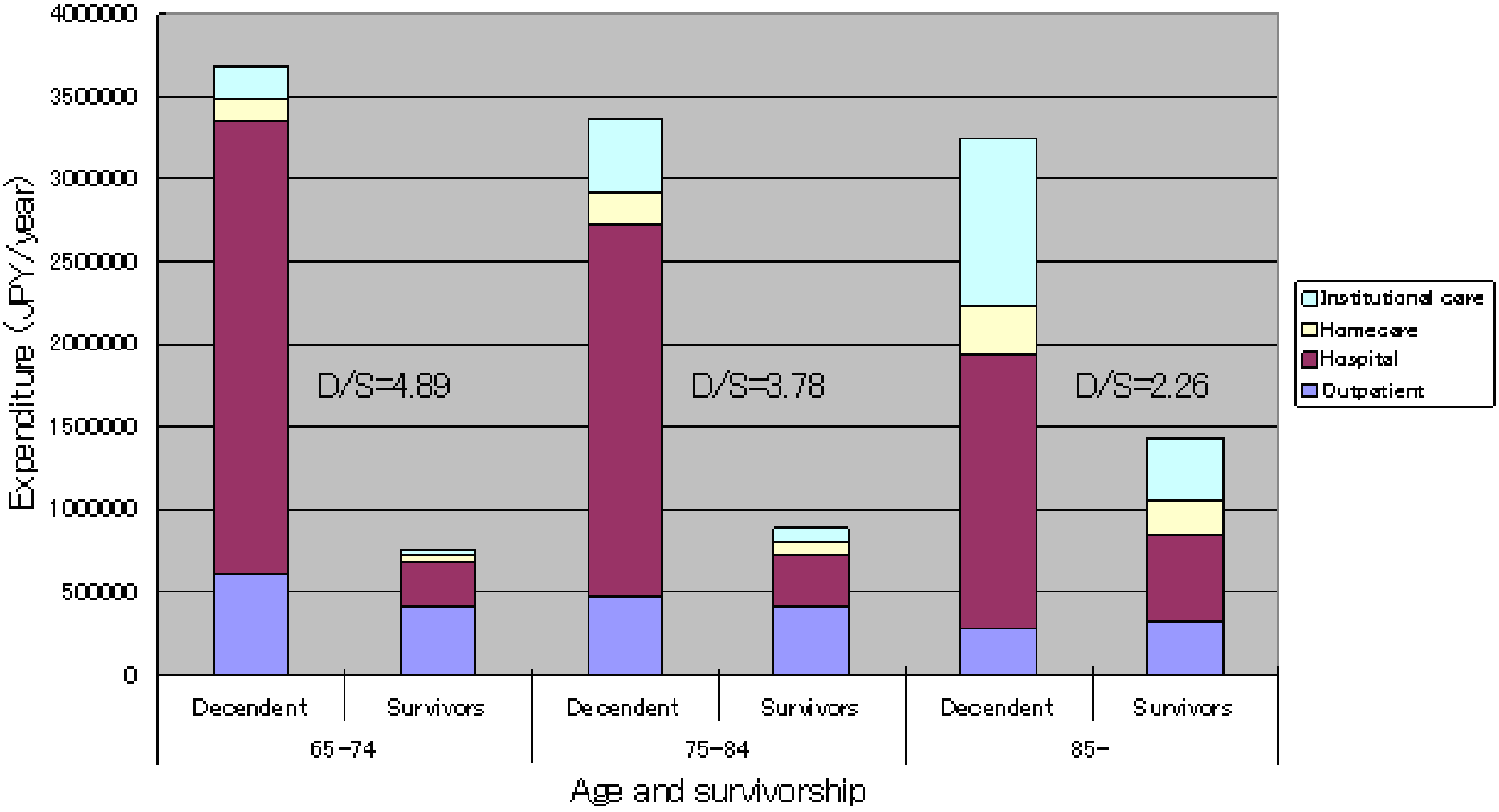
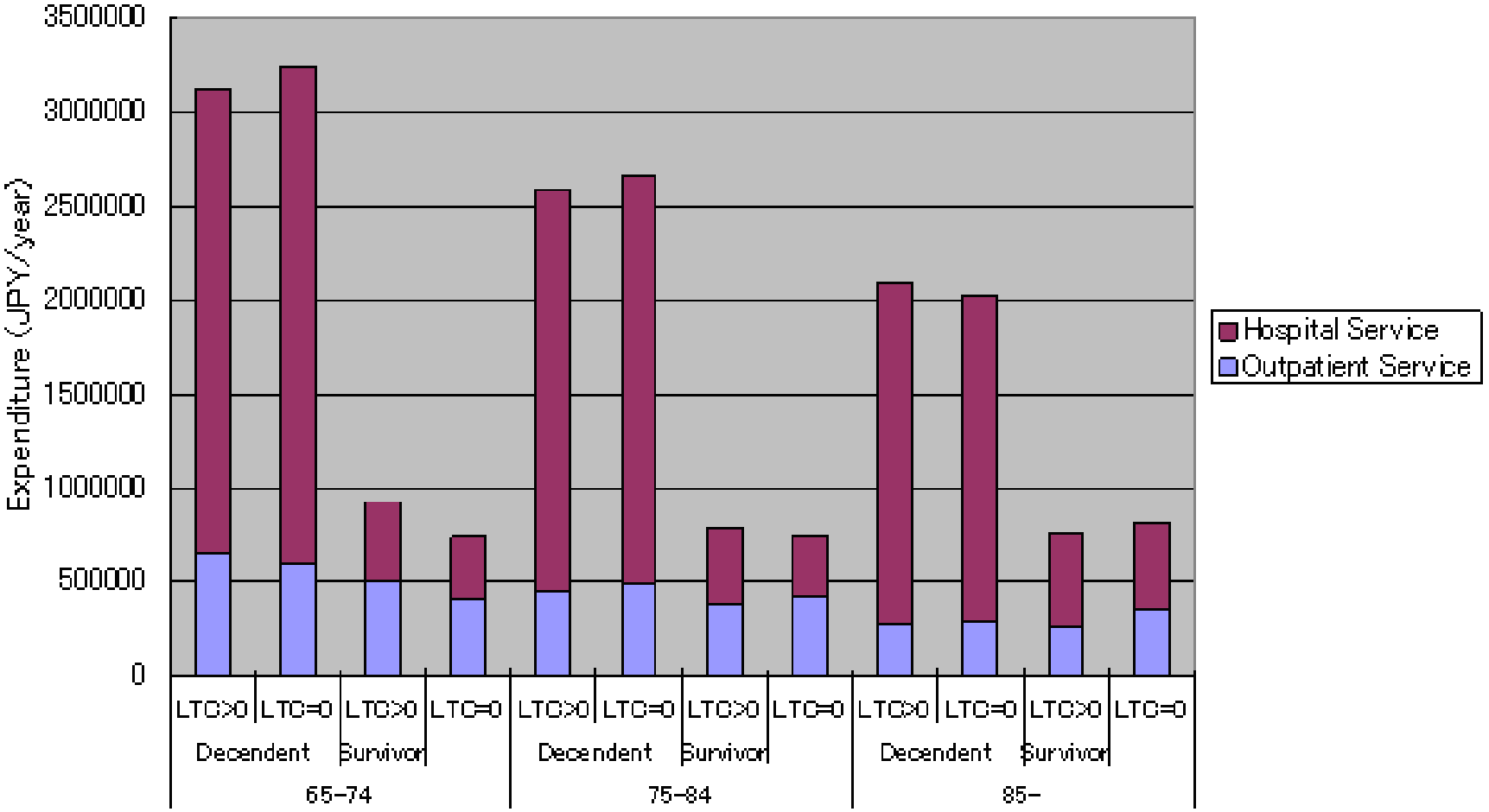


Figure 14. Average Medical Service Use by Age, Survivorship, and LTC use



Summary

- Decedents medical expenditure was expensive, dependent on TTD, and decreased over age. (“red herring theory”)
- Survivors spent less medical care, but not age-dependent.
- Long-term care increased over age among both decedents and survivors, which closes the gap between two groups in terms of total health cost over age.