

Redesigning Communities for Aged Society ~Kashiwa Model, Japan~

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Challenges and Opportunities in Longevity Society

Individual: A new map of life

today's topic

Society: Redesigning the infrastructure

Industry: Fast-growing market

Demographics (Japan)

Life Expectancy

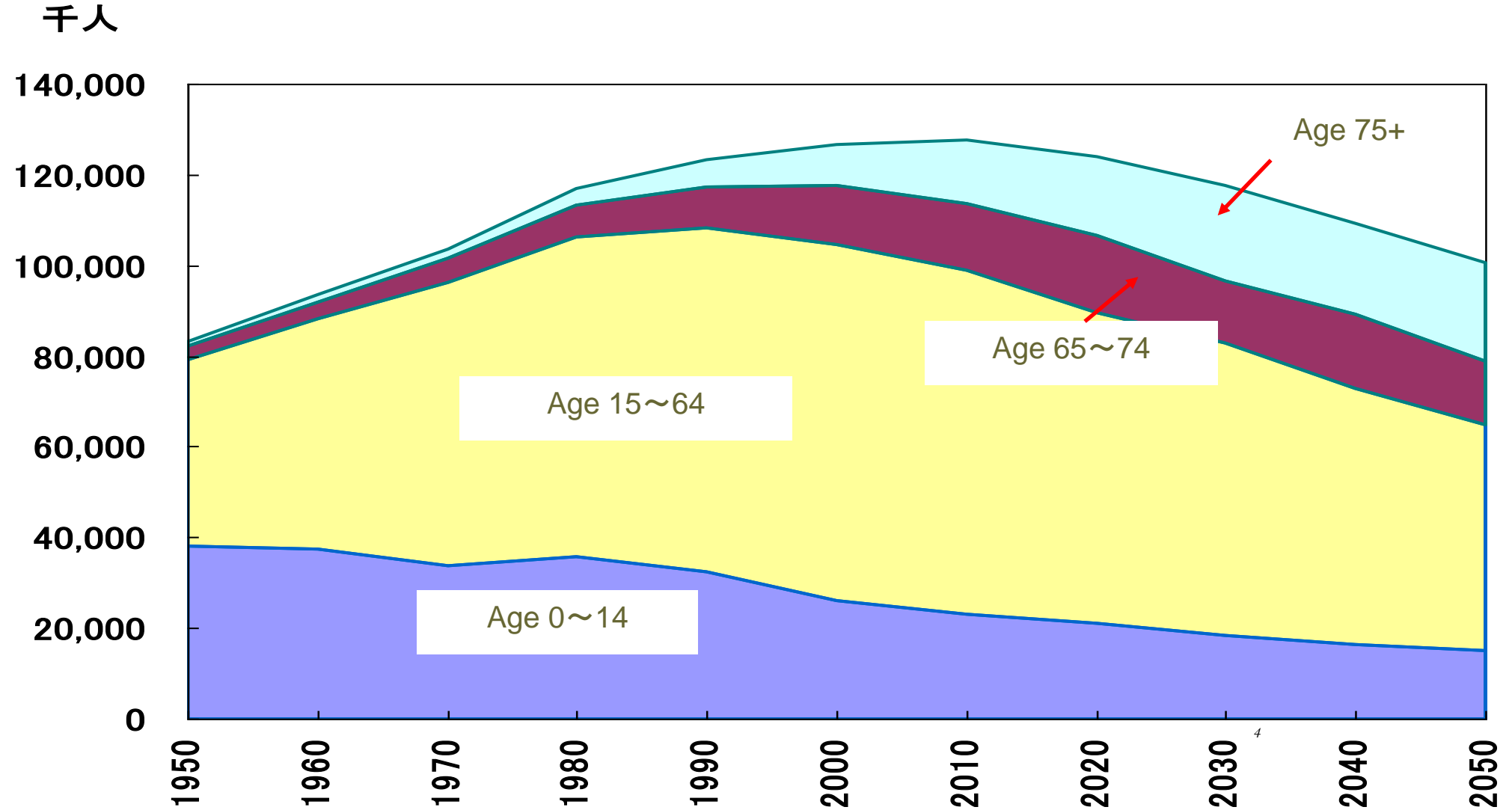
Men 82 years

Women 88 years

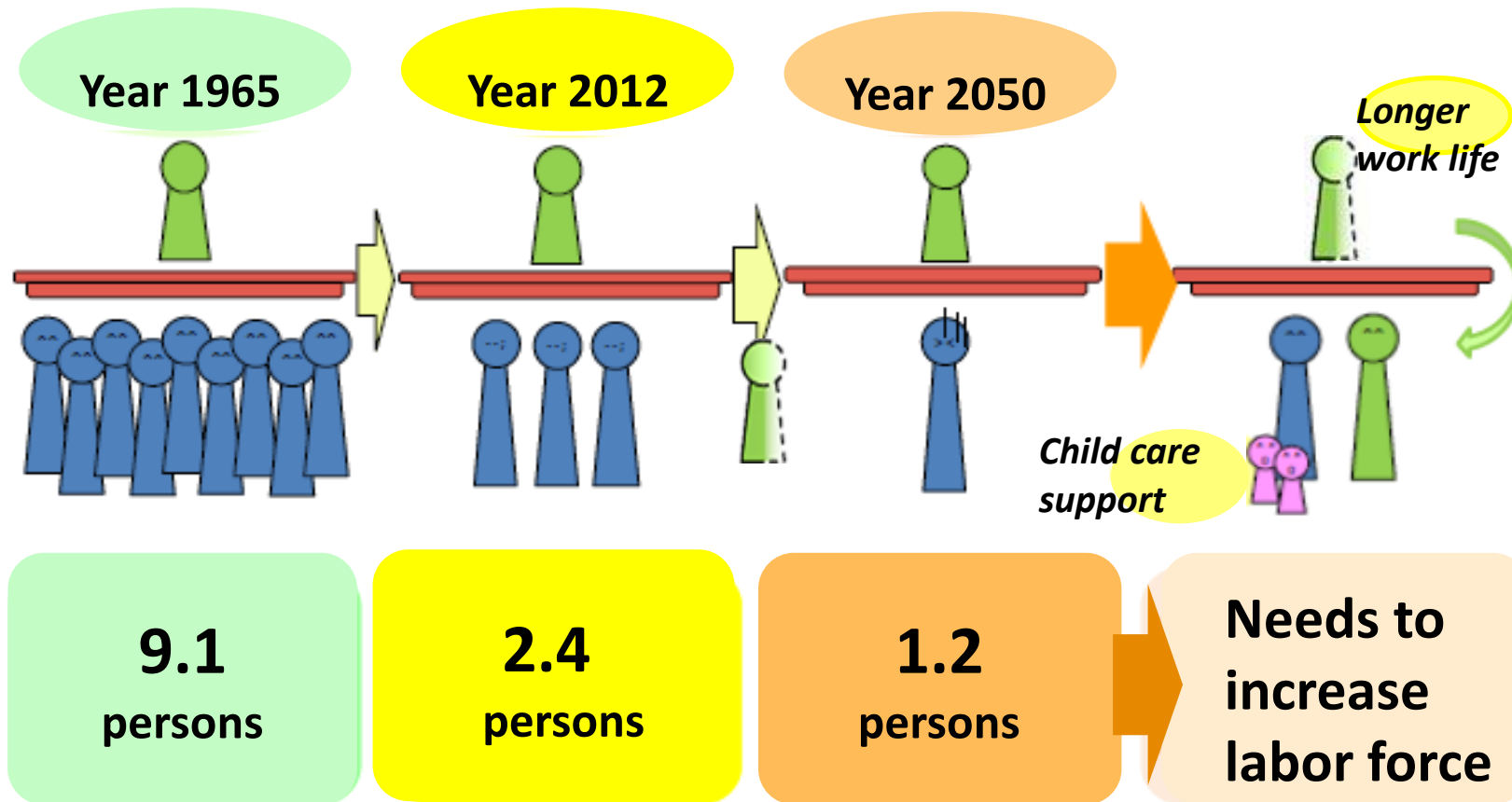
Fertility Rate 1.34

Age 65+ 29%

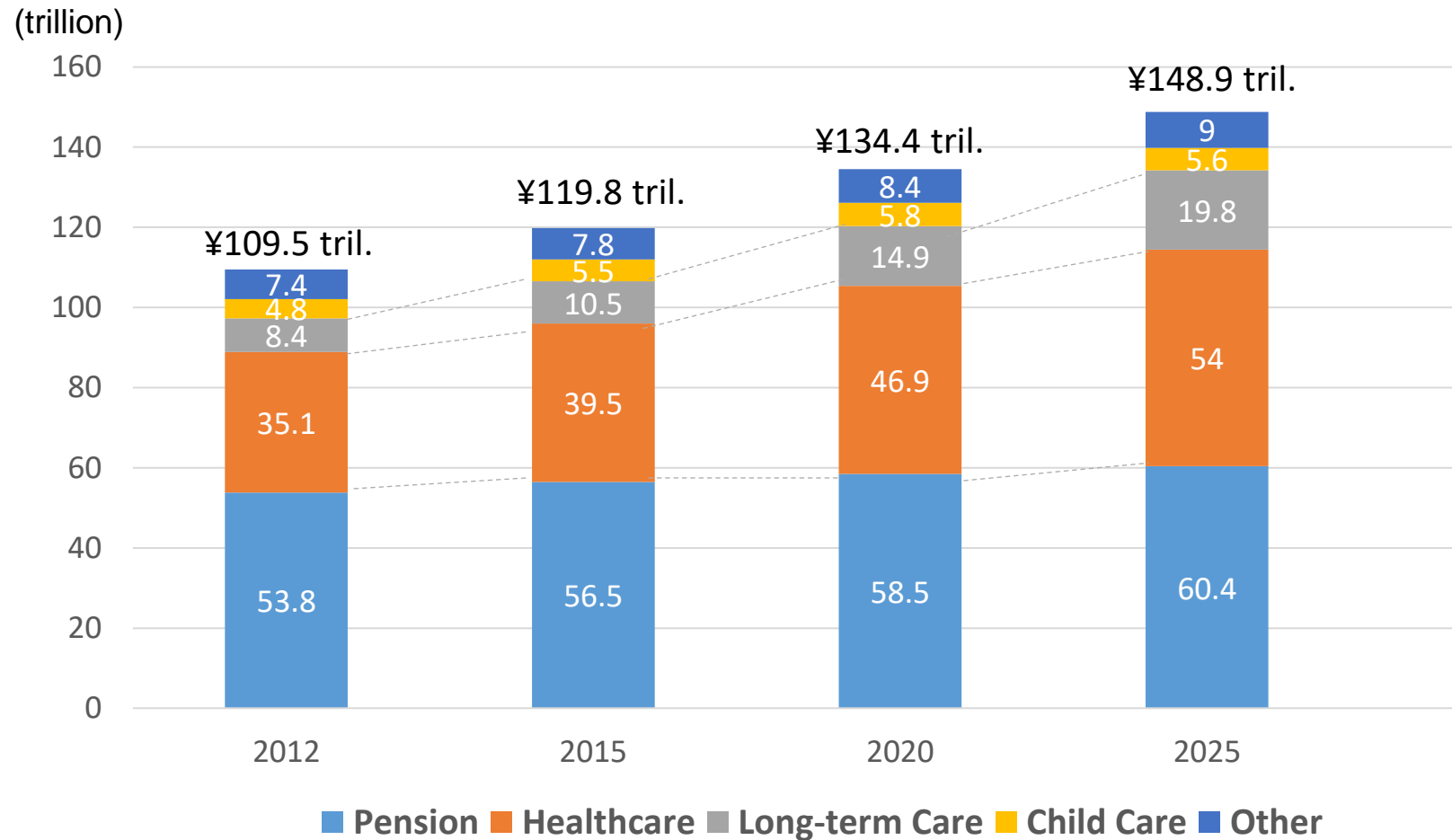
Demographic Shifts (1950—2050)



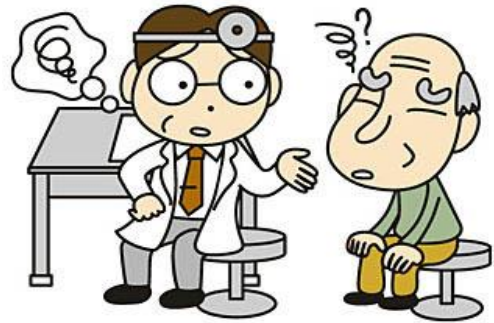
Old Age Dependency Ratios (Age 20-64 / Age 65+)



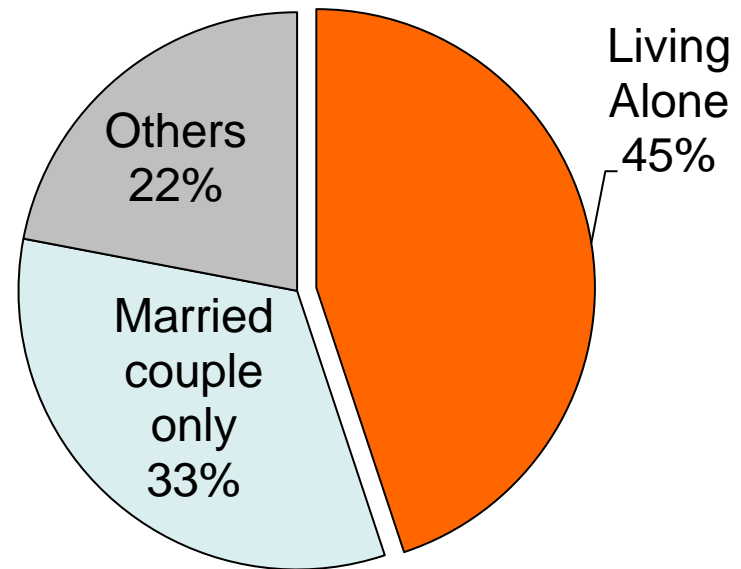
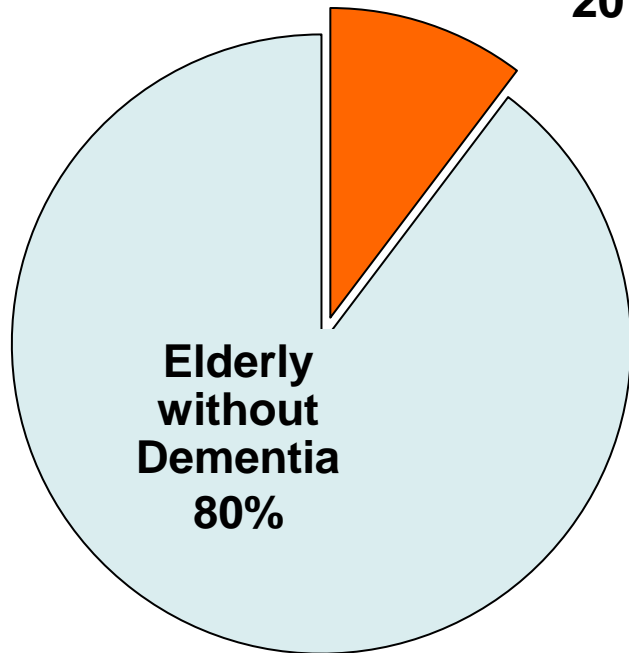
Social Welfare Spending



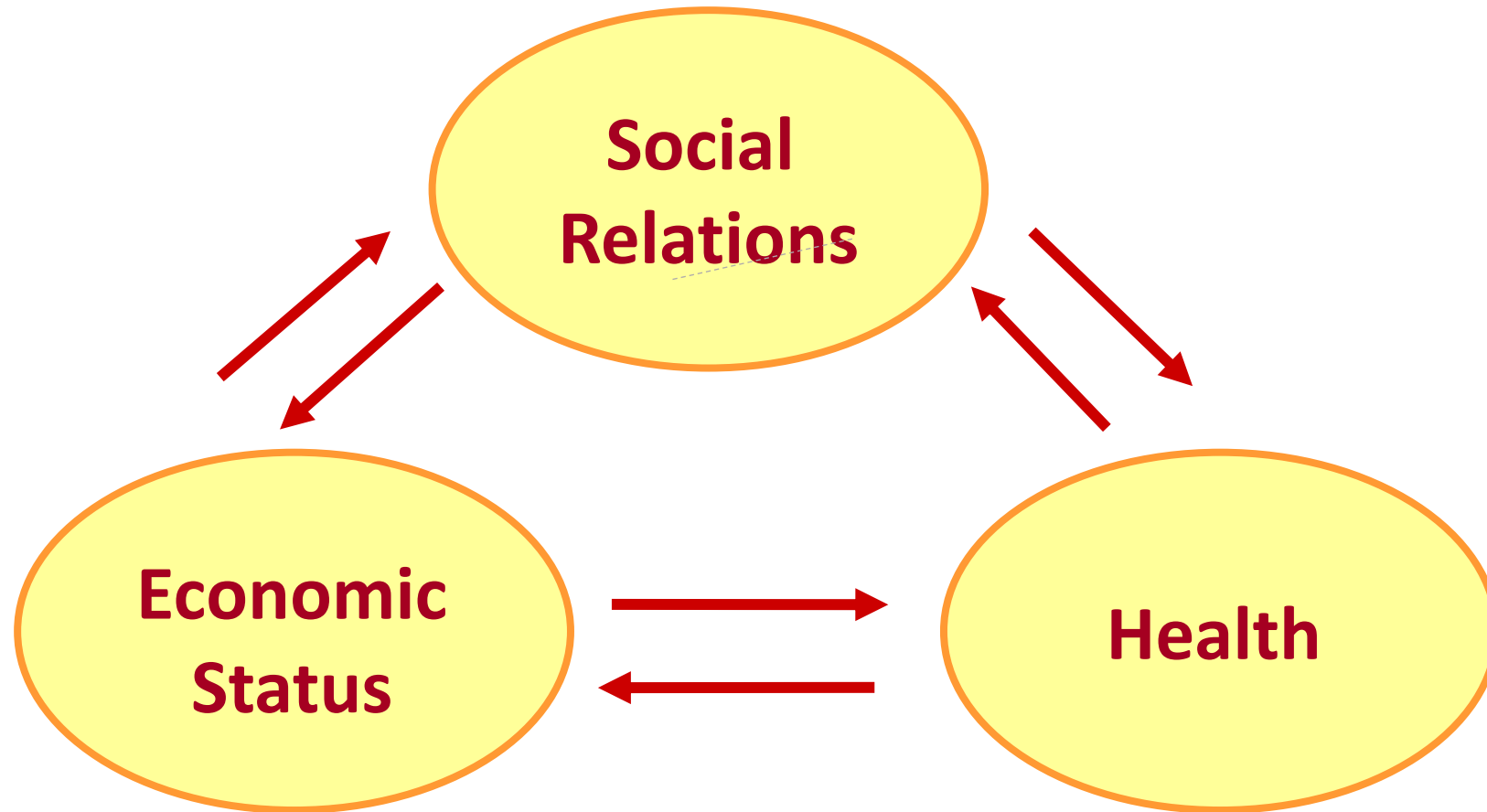
Demographic Shift and New Needs (2030)



Dementia
20%



Well-being of Japanese Elderly Survey 1987- (N=5715)



Survey Design

- **National probability sample of 5715 Japanese (age 60+)**
- **Face-to-face interview in every three years**
- **Supported by Ministry of Health, Welfare and Labor & NIA**

Survey Years

Wave 1	1987
Wave 2	1990
Wave 3	1993
Wave 4	1996
Wave 5	1999
Wave 6	2002
Wave 7	2006
Wave 8	2012
Wave 9	2017
Wave 10	2021



30 years

Independent Living Measure

Score

- 3 ADL & IADL without assistance
- 2 IADL with assistance but ADL without assistance
- 1 ADL & IADL with assistance
- 0 Dead

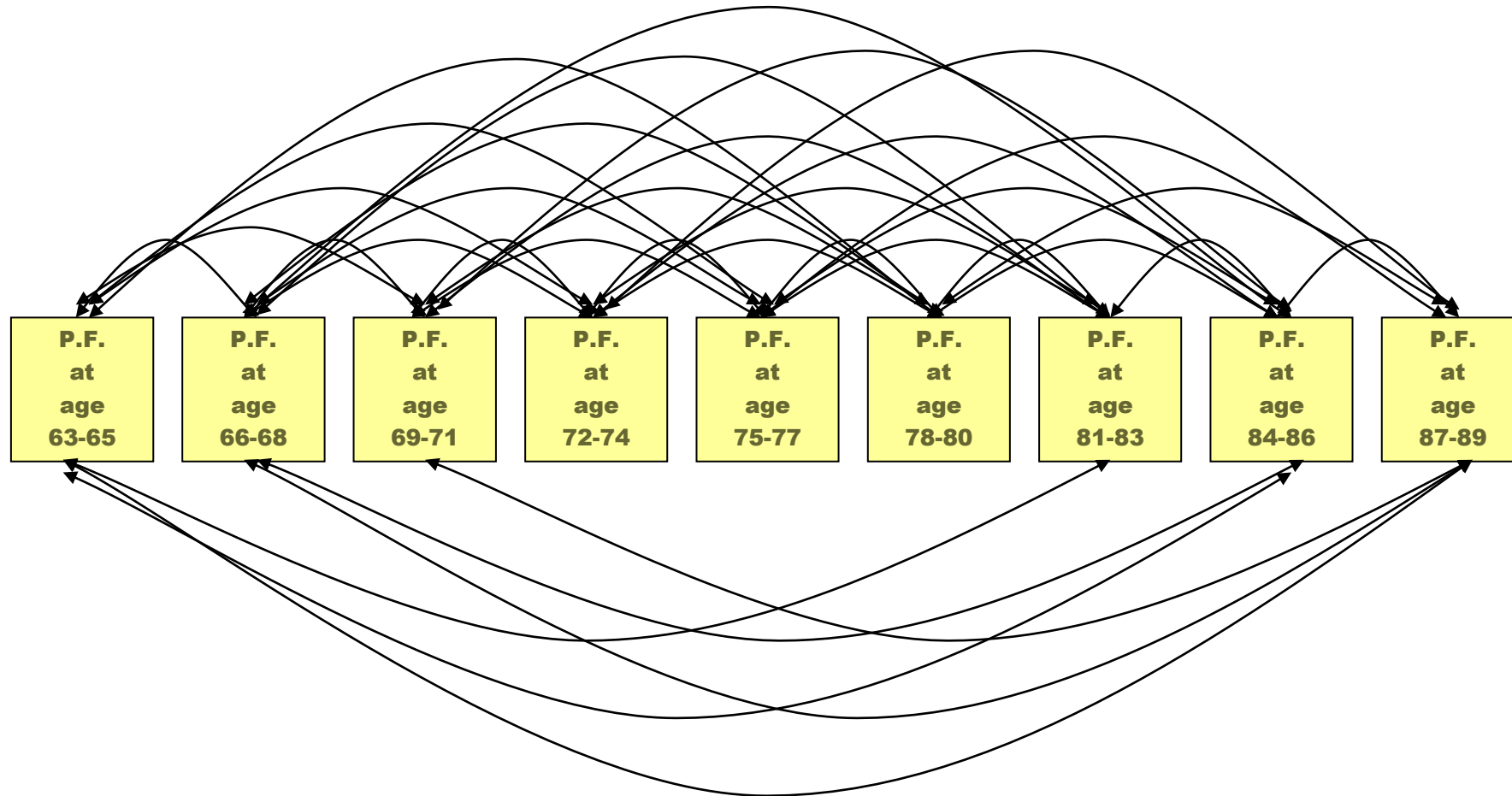
ADL questions

- Bathing
- Walking a short distance
- Going up a few steps

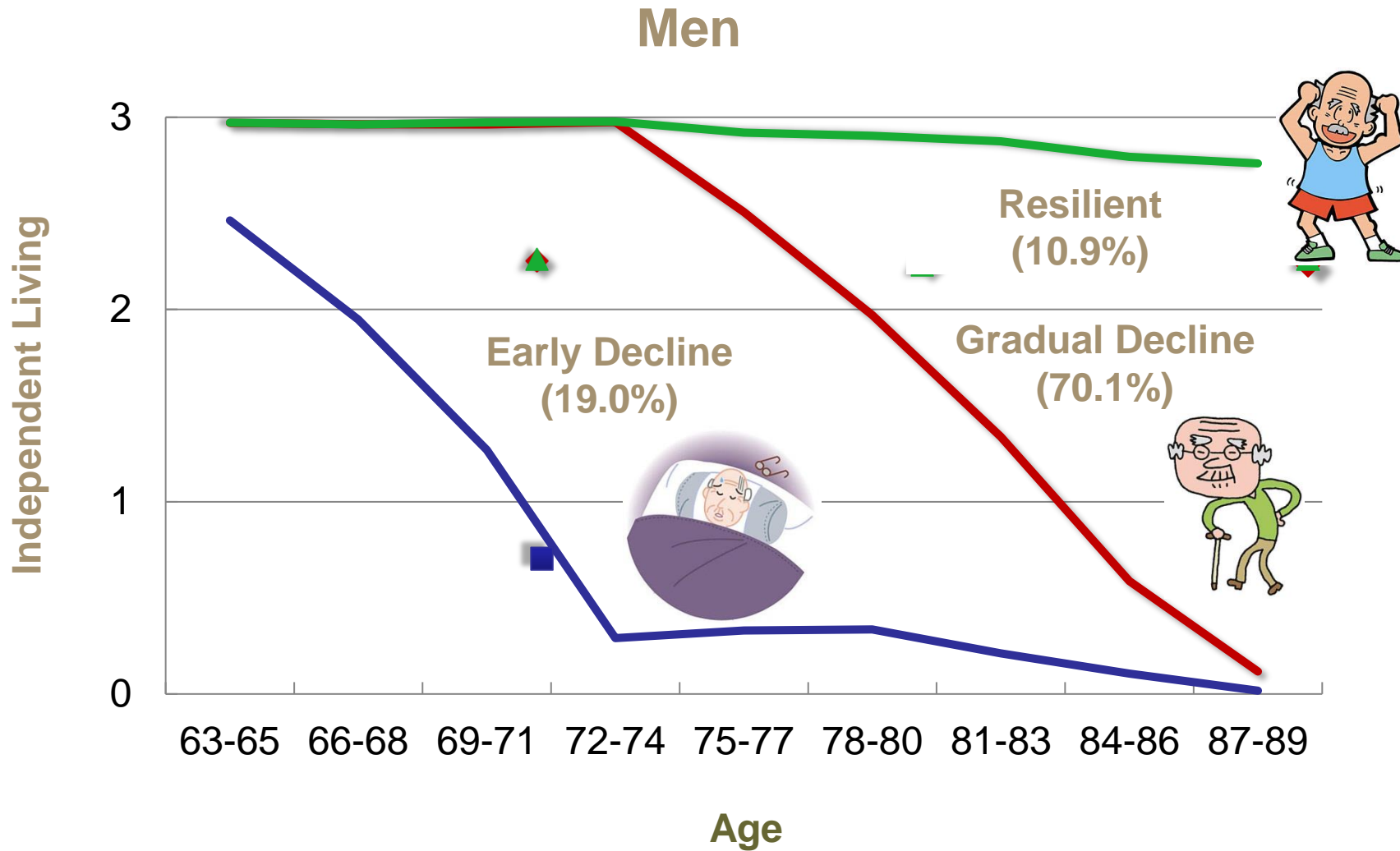
IADL questions

- Shopping for groceries or clothes
- Using the telephone
- Going out by bus/train

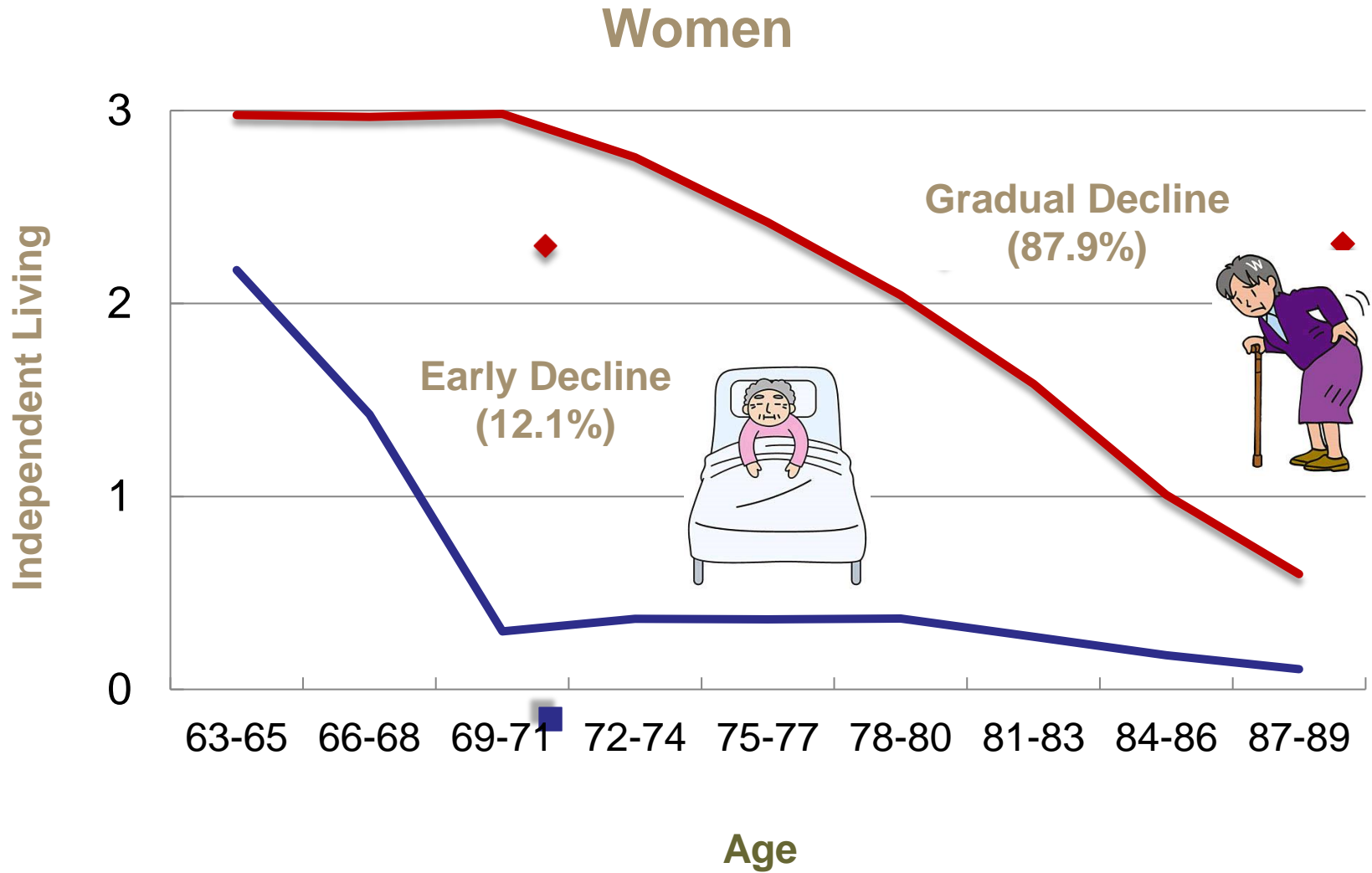
Latent Class Analysis: Model



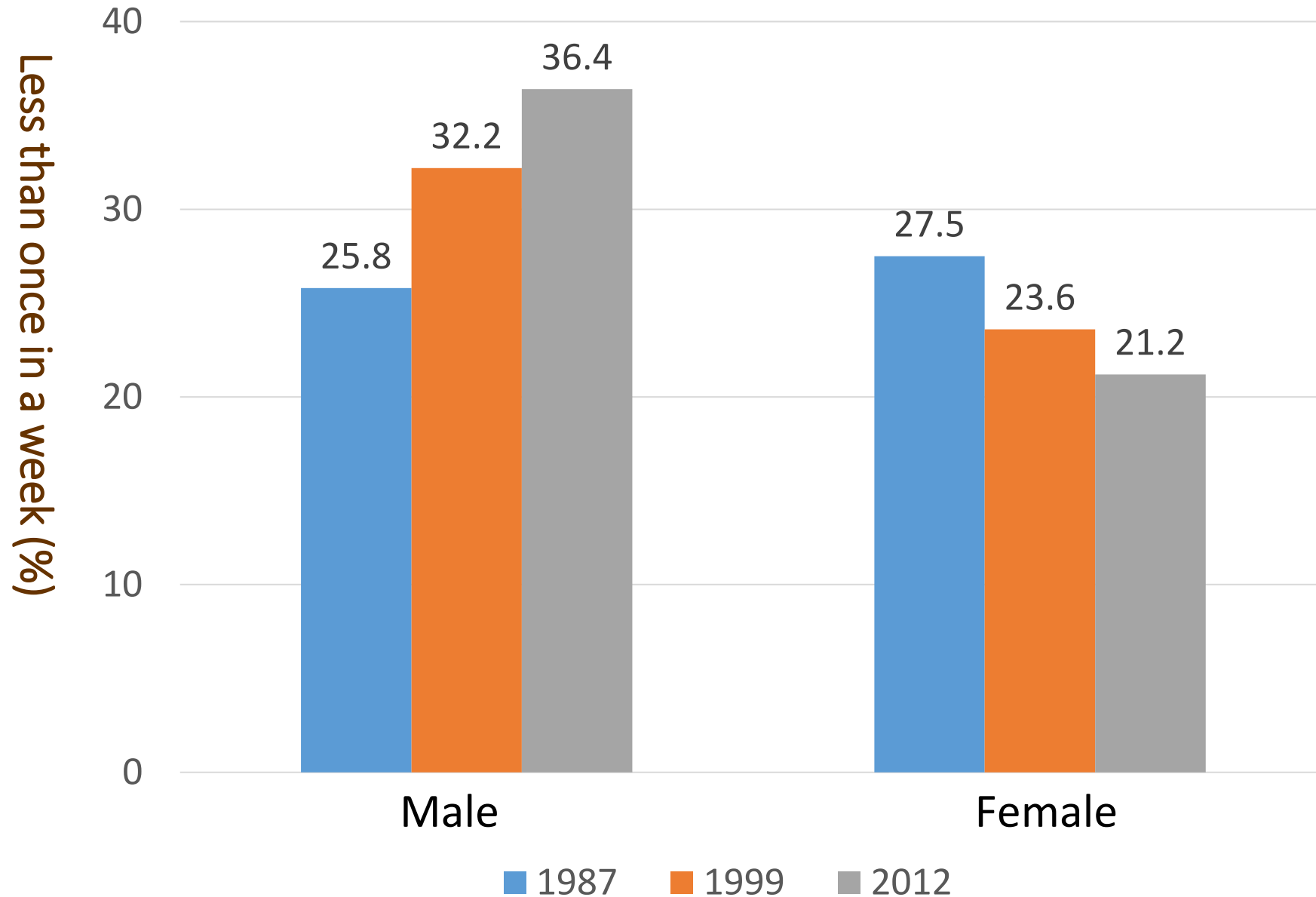
Trajectories of Independent Living



Trajectories of Independent Living



Cohort Difference in Frequency of Contacts with non-Family Members (Age 70+)



We know what issues are.

What we need now are **solutions and actions!**

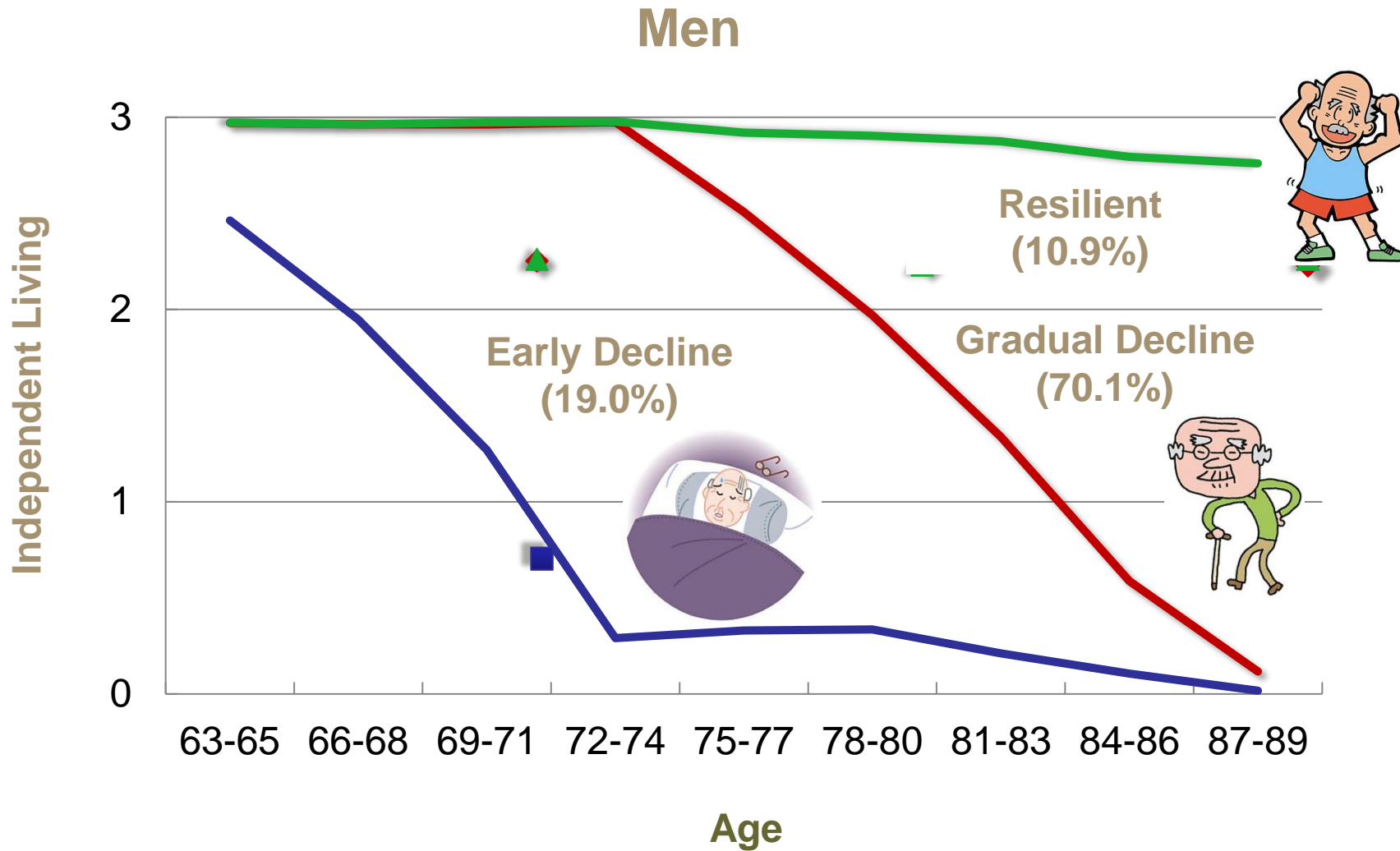
Action Research

- **Aims to solve a social problem**
- **Active participation in collaboration of multi-stakeholders**
- **A spiral of steps, each of which is composed of a PDCA circle**

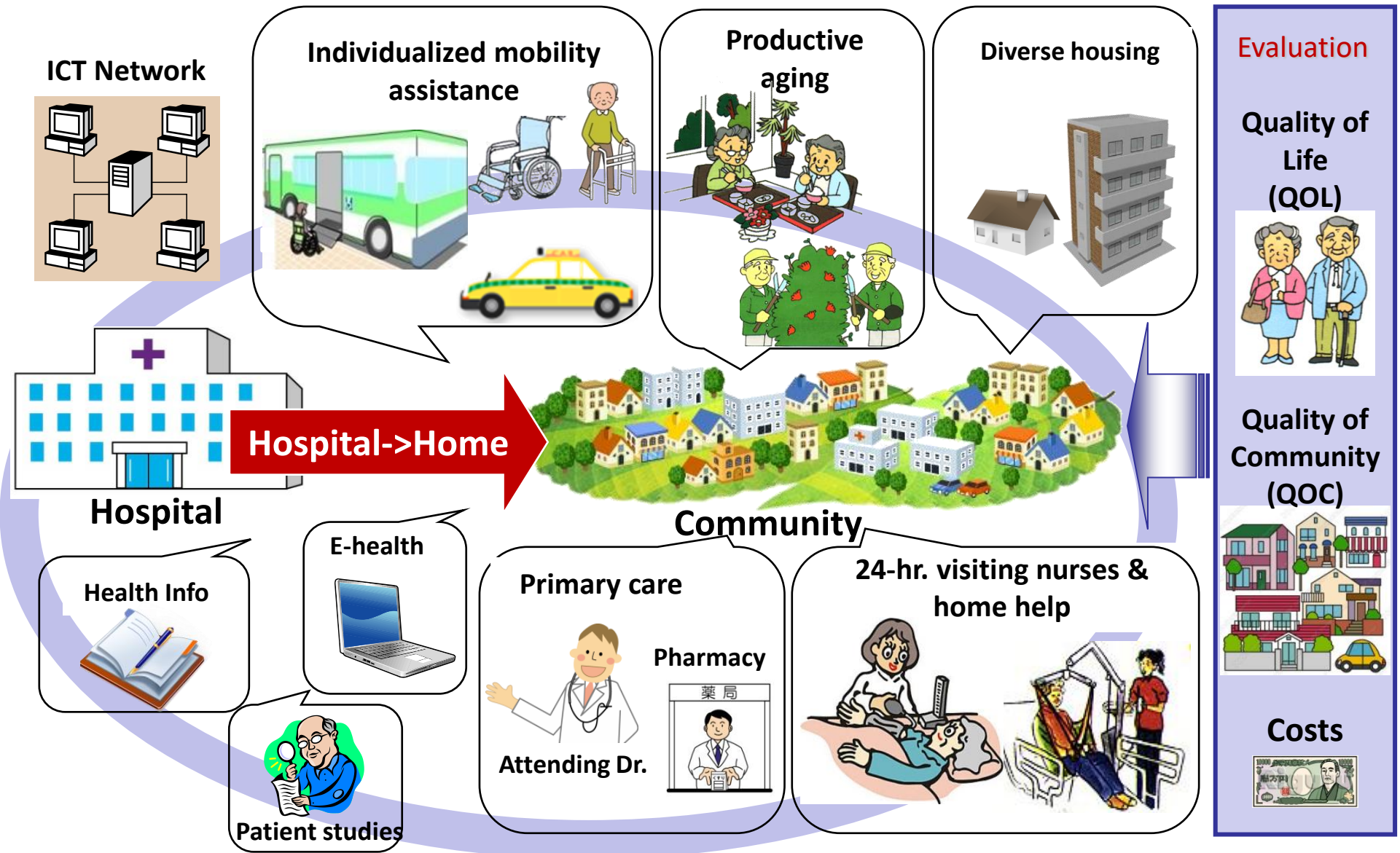
Three Priority Issues

- **To extend years of being independent**
- **To create an environment for aging in place**
- **To maintain and strengthen human bonds**

Trajectories of Independent Living



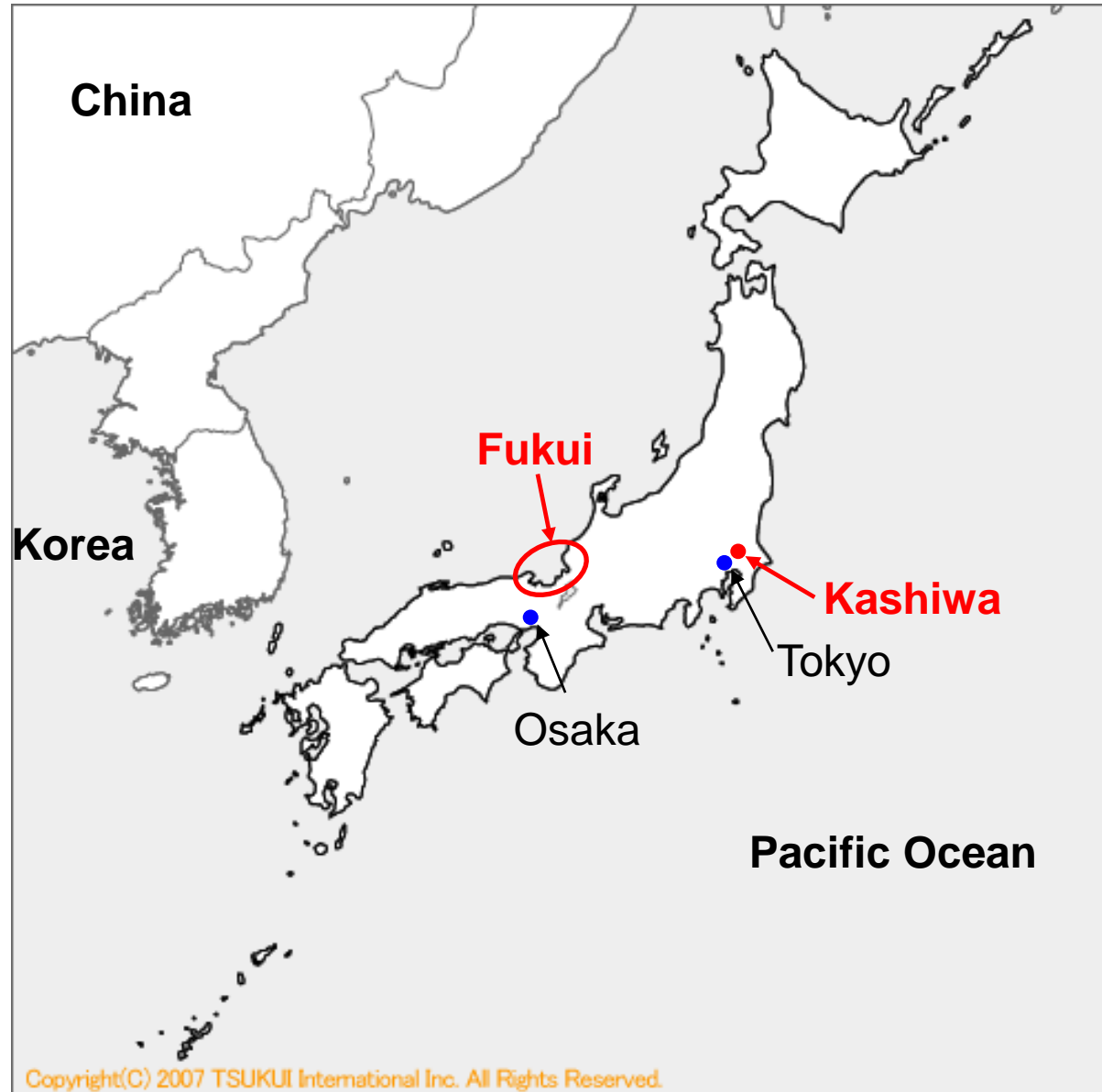
Redesigning Communities for Aged Society



Major Projects

- **Productive aging**
- **Lifelong learning**
- **Human Bonds**
- **Frailty prevention**
- **Health care & long term care**
- **Housing**
- **Transportation**
- **ICT**

Social Experiment Sites



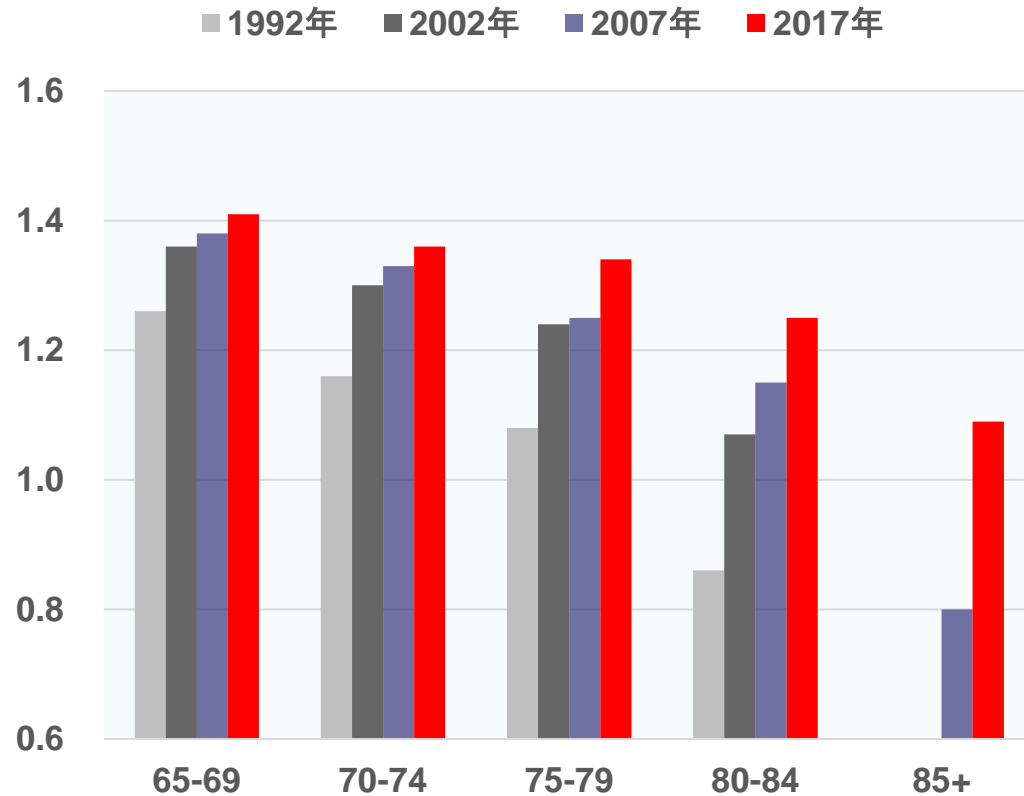
We Live Longer & Work Longer

**It is good for the well-being of individuals
and the society**

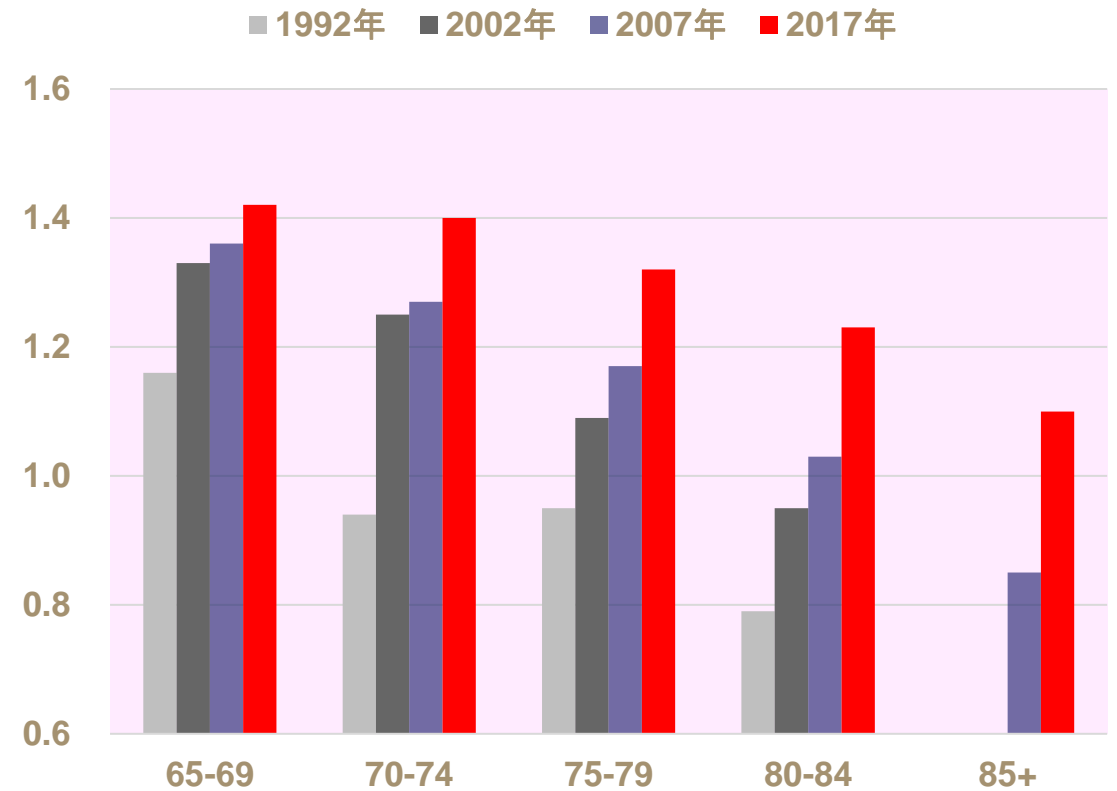
We are Living Longer and Healthier!

~Walking Speed~

Men



Women

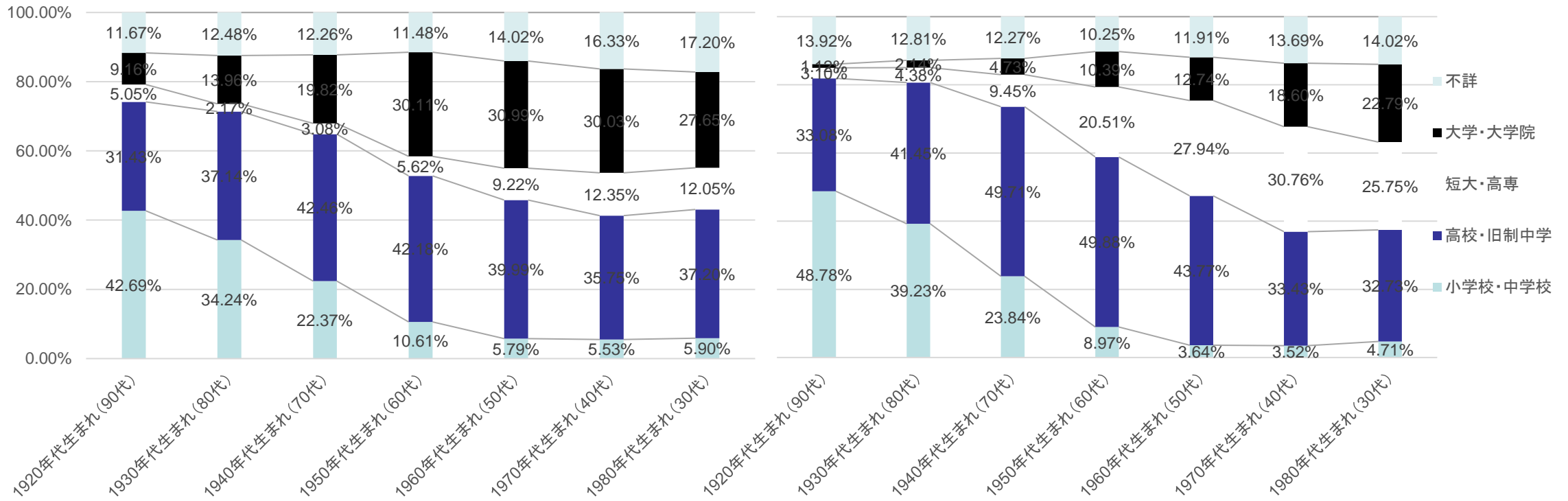


Suzuki, T et al, Are Japanese Older Adults Rejuvenating? Changes in Health-Related Measures Among Older Community Dwellers in the Last Decade, Rejuvenation Res, 2020

Better Educated

Men

Women



Source: 2015 Census

Definition of 'old-age' : age 75+

日本経済新聞

記事利用について

75歳で高齢者、65歳は「准高齢者」 学会提言

2017/1/5 19:17 | 日本経済新聞 電子版

日本老年学会などは5日、現在は65歳以上と定義されている「高齢者」を75歳以上に見直すよう求める提言を発表した。医療の進展や生活環境の改善により、10年前に比べ身体の働きや知的能力が5～10歳は若返っていると判断した。

前期高齢者とされている65～74歳は、活発な社会活動が可能な人が大多数だとして「准高齢者」に区分するよう提案。社会の支え手と捉え直すことが、明るく活力ある高齢化社会につながるとしている。

65歳以上を「支えられる側」として設計されている社会保障や雇用制度の在り方に関する議論にも大きな影響を与えそうだ。

平均寿命を超える90歳以上は「超高齢者」とした。提言をまとめた大内尉義・虎の門病院院長は「高齢者に対する意識を変え、社会参加を促すきっかけになってほしい」と述べた。

学会は、お年寄りの心身の健康に関するさまざまなデータを解析。身体の働きや知能の検査結果、残った歯の数などは同一年齢で比べると年々高まる傾向にあり、死亡率や要介護認定率は減少していた。

内閣府の意識調査でも、65歳以上を高齢者とすることに否定的な意見が大半で、男性は70歳以上、女性は75歳以上を高齢者とする回答が最多だったことも考慮した。

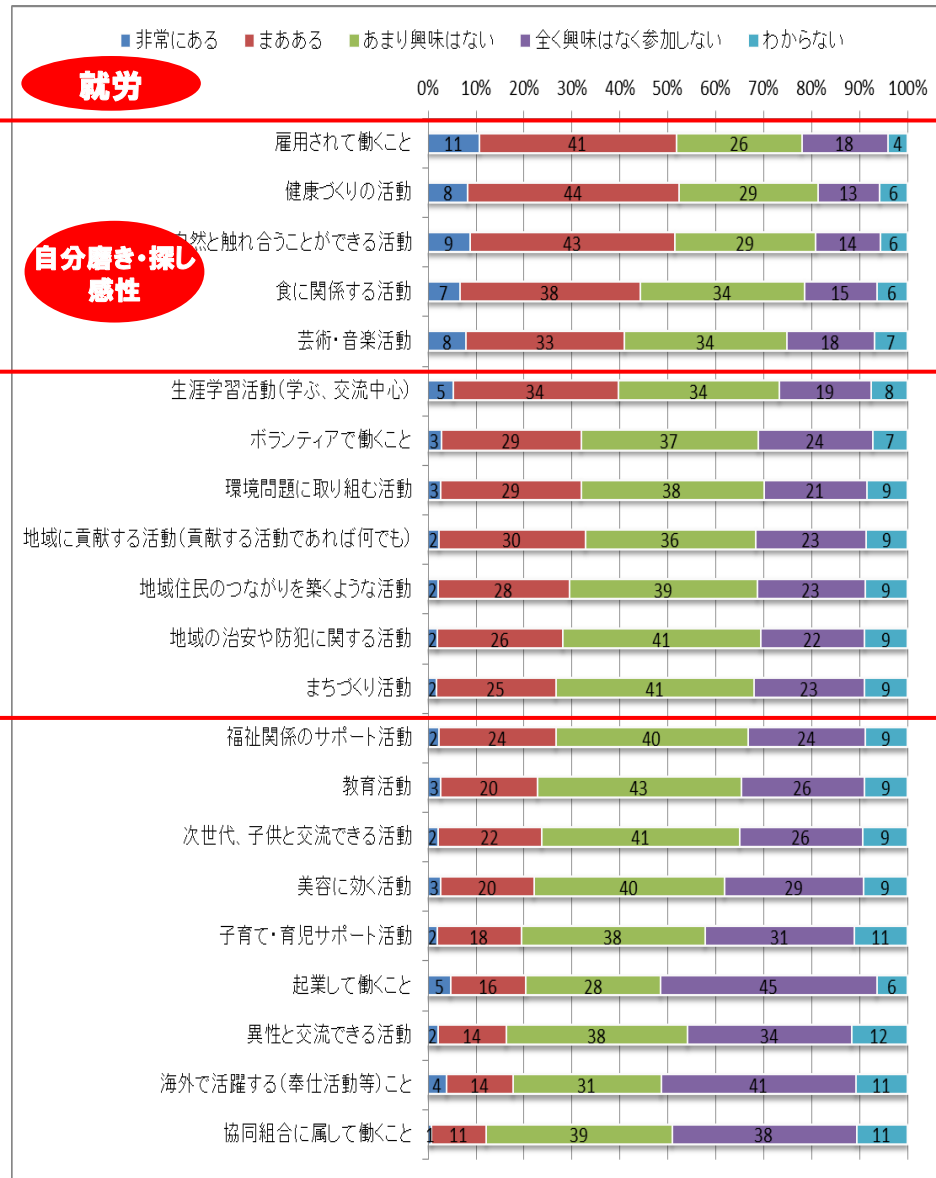
准高齢者は、仕事やボランティアなど社会に参加しながら、病気の予防に取り組み、高齢期に備える時期だとした。〔共同〕



10年前に比べ身体の働きや知的能力が若返っているとみられる

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What do you want to do after age 65?

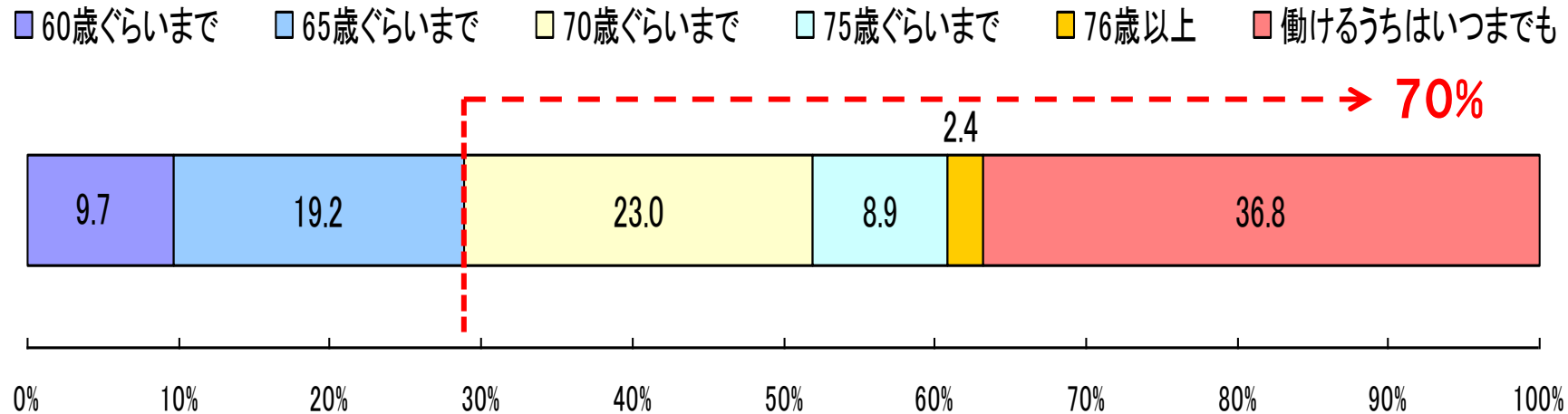


	全体					
			男女別			
			男性		女性	
	平均 得点	順位	平均 得点	順位	平均 得点	順位
雇用されて働くこと	3.36	1	3.46	1	3.27	5
健康づくりの活動	3.36	2	3.29	3	3.43	1
自然と触れ合うことができる活動	3.35	3	3.36	2	3.35	2
食に関する活動	3.23	4	3.11	4	3.35	3
芸術・音楽活動	3.17	5	3.04	5	3.29	4
生涯学習活動(学ぶ、交流中心)	3.11	6	3.02	6	3.19	6
ボランティアで働くこと	2.97	7	2.96	10	2.97	8
環境問題に取り組む活動	2.96	8	2.98	8	2.94	9
地域に貢献する活動(貢献する活動であれば何でも)	2.95	9	3.00	7	2.90	10
地域住民のつながりを築くような活動	2.92	10	2.94	12	2.89	11
地域の治安や防犯に関する活動	2.90	11	2.98	9	2.84	13
まちづくり活動	2.88	12	2.95	11	2.80	14
福祉関係のサポート活動	2.87	13	2.85	14	2.89	12
教育活動	2.82	14	2.84	15	2.80	15
次世代、子供と交流できる活動	2.82	15	2.83	16	2.80	16
美容に効く活動	2.77	16	2.50	21	3.03	7
子育て・育児サポート活動	2.68	17	2.59	20	2.76	17
起業して働くこと	2.67	18	2.83	17	2.52	19
異性と交流できる活動	2.61	19	2.86	13	2.37	21
海外で活躍する(奉仕活動等)こと	2.60	20	2.61	19	2.58	18
協同組合に属して働くこと	2.53	21	2.61	18	2.45	20

Japanese seniors are willing to work

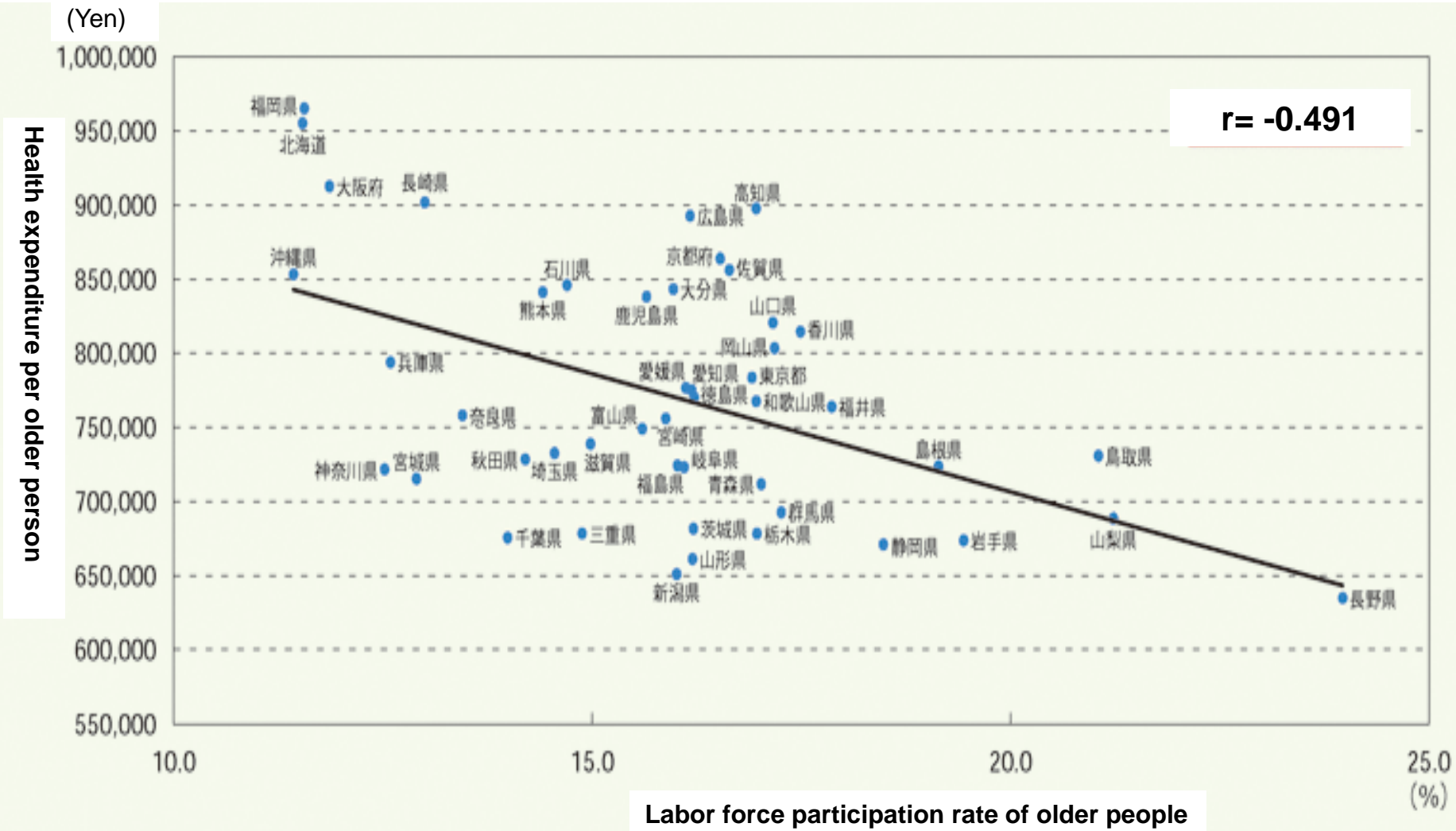
70% of people age 60+ want to work until age 70 and longer

<How long do you want to work? >



Source: Seniors' Social Participation Survey (Cabinet Office)

Labor force participation rate & health expenditure by prefecture (Age 65+)



Sources: Ministry of Health, Labour and Welfare; Statistics Bureau

<Contributions of seniors>

Expansion of job opportunities for seniors is essential to ensure sustainability of the society (i.e., to sustain and enhance the labor force, social security finance and economic development)

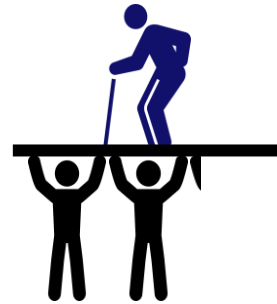
- Labor demand & supply in 2030: ▲8.45M : Seniors will be “producers (workers)”
- Social security benefits exceed 100 trillion yen : Seniors will be “taxpayers” (+ promoting health & containing medical costs by working)
- Expansion of senior market: Seniors will be active “consumers”

<Seniors are able and willing to work>

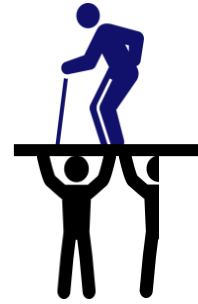
- Seniors are physically and cognitively younger than their counterparts in the past
- Japanese seniors are willing to work

If People Work until Age 75

Work until Age 65



2020
2.07 persons

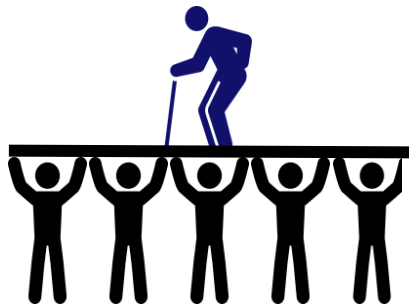


2040
1.53 persons



2060
1.35 persons

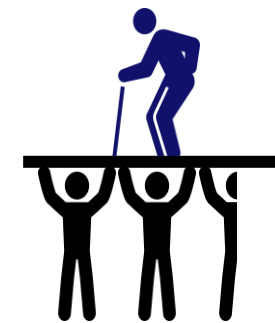
Work until Age 75



2020
4.89 persons



2040
3.42 persons

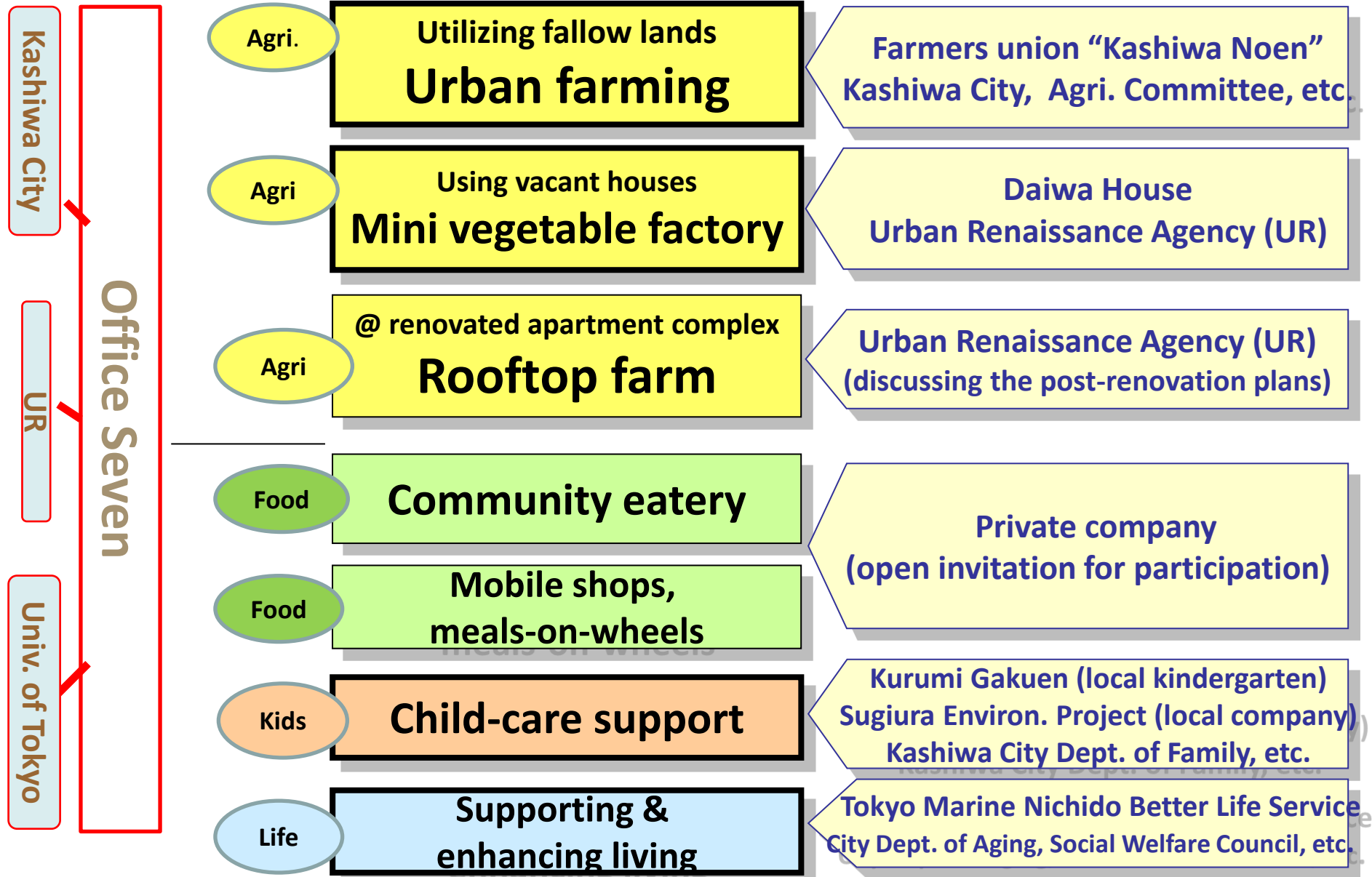


2060
2.49 persons

Work Places for the Second Life



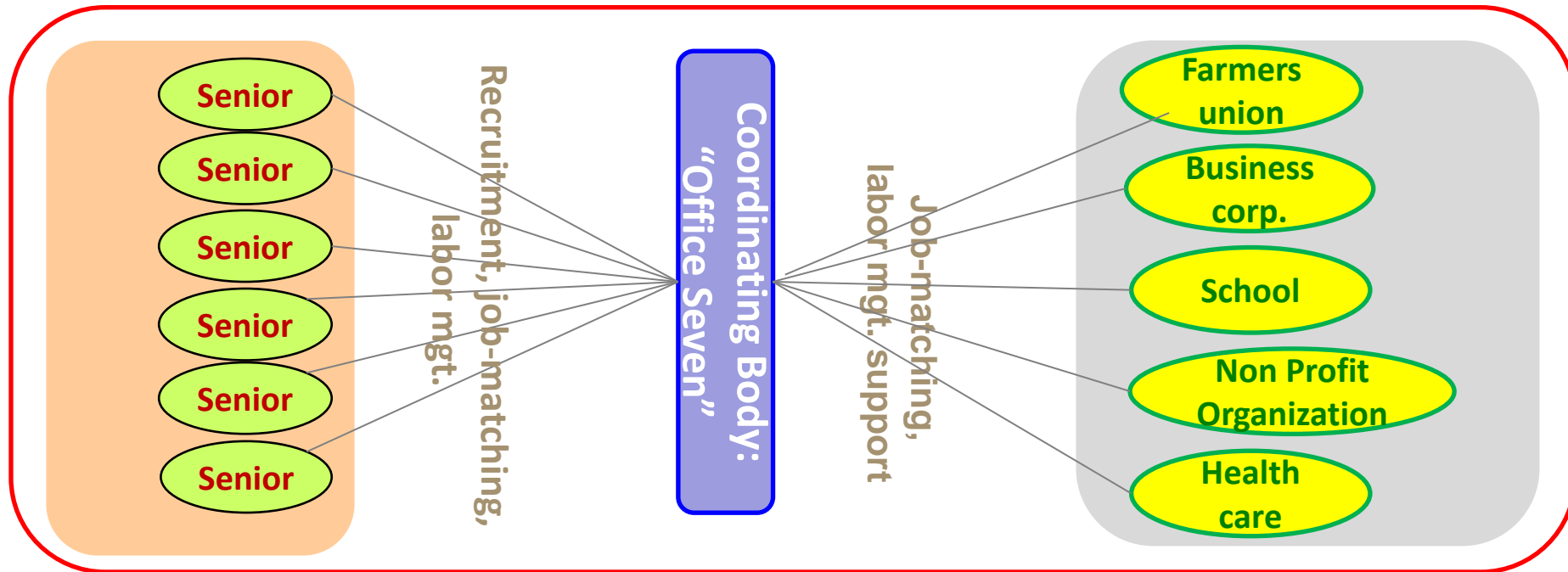
Creating Work Places



New Work Style for the Second Life

Office Seven

- “Job seminar” for senior citizens: held 8 times & 778 persons completed
- Using work-sharing, a flexible employment scheme for both employers and workers
- Technological development using a cloud computing system to support the flexible work scheme



“Job Seminar”



Seminar Dates & Programs

<p>#1 June 22</p>	<p>AM: Second-life work 101</p> <p>PM: Current job opportunities and environment for seniors</p> <p>人材派遣業、シルバー人材センターの担当者等 労の実態などを学びます</p>
<p>#2 June 29</p>	<p>AM: Expectations from employers</p> <p>PM: New work styles in the second-life</p>

Seminar Venue

セミナー会場

The Univ. of Tokyo
Kashiwa Campus
Research bldg.
6th fl.

This seminar is for:

- Age 60+
- City residents
- Interested in working
- Can participate in evaluation, etc.

■ The 4th job seminar
June 22 (Fri.) & 27th
(Fri.)

■ The 5th job seminar
July 24th (Tue.) and
31st (Tue.)

✕ The 5th seminar will
focus on agriculture

Senior at Work





Effect Indicators



Individual

Physical and mental health

Social relations

Meaningful life

Smile



Community

Tax revenue

Health care costs

Social capital

Evaluation Study

Vascular test

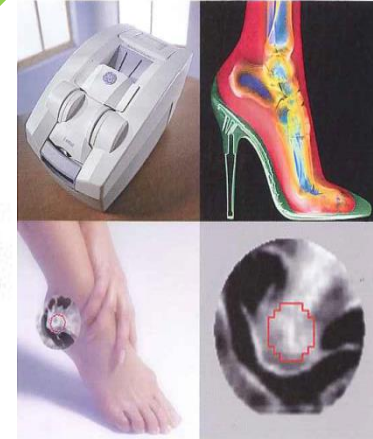
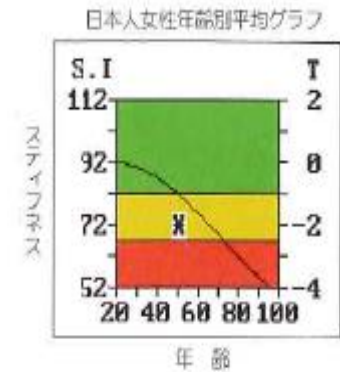


- CAVI/ABI
- FMD

IOG Lab



Bone density



Body composition



- Fat/body water/
bone and muscle mass



Physical activity



- Pedometer/calories/Mets

Cognitive function



Data

Physical Activities

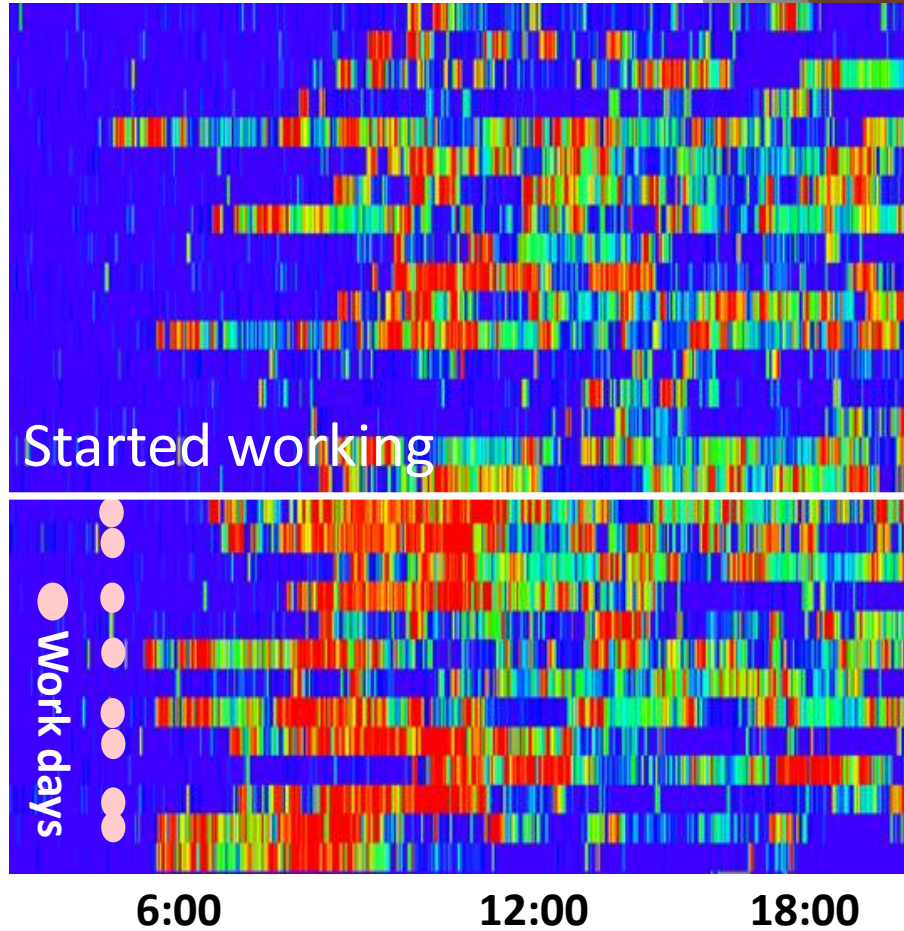
Activity Tapestry



Jan. 15

Feb. 2

Feb. 15

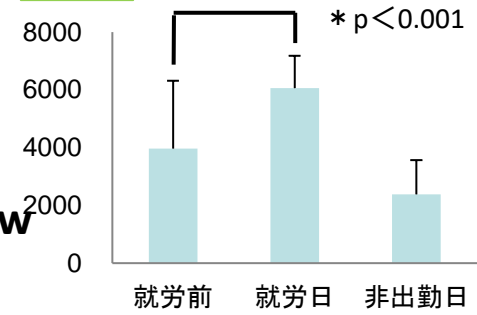


Low

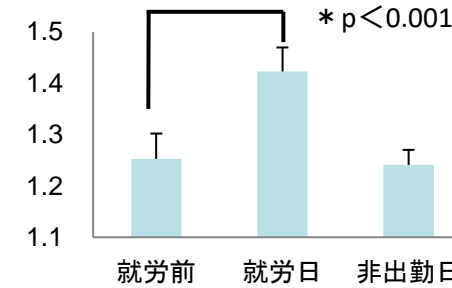
Activity Frequency

High

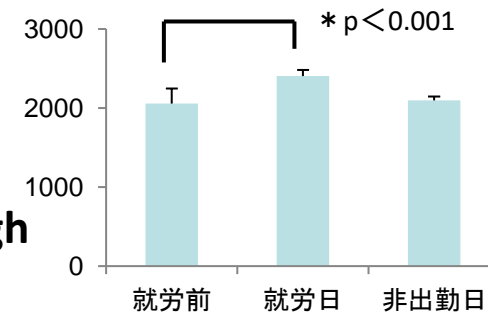
歩数



Mets (運動強度)



消費カロリー



Life-long Active Society

Individual

Society

Health
Purpose of Life
Connected
Sense of Belonging
Income

Producers
Consumers
Tax Payers
Public Finance for Healthcare/Welfare
Community Power
Preventing Social Isolation³⁷



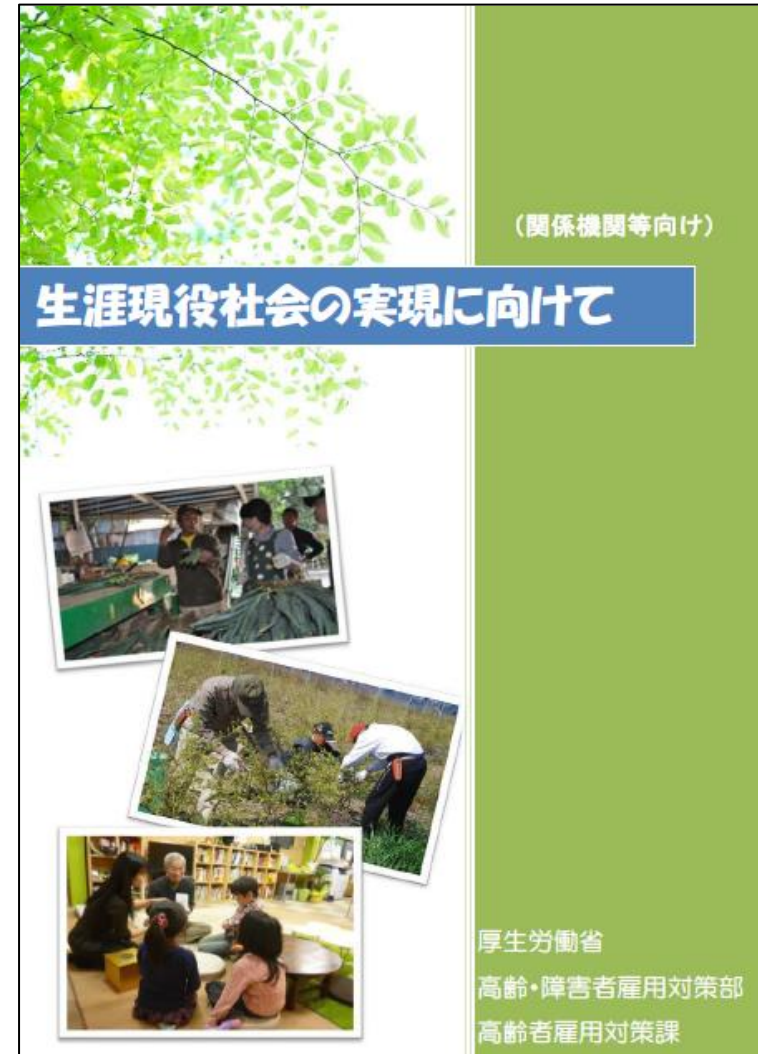
Well-balanced Mutual Support Society

Policy Recommendation to Ministry of Health, Welfare and Labor

生涯現役社会の実現に向けた
雇用・就業環境の整備に関する検討会
報告書

平成27年6月5日

生涯現役社会の実現に向けた
雇用・就業環境の整備に関する検討会



生涯現役促進地域連携事業 地域マップ



Towards Life-long Active Society

- Pension reforms
- Reduction of labor market barriers
- Enhancing employability

KEIROKA: 3S Assistive Technology

KEIROKA Technology

Assistive technology to reduce fatigue/load of human workers in manual labors, e.g. agricultural work, nursing care, construction, designed on the concept of 3S assist.

3S Assist

<http://keiroka.org/>

- *Secure assistance*
- *Sustainable assistance* to maintain physical functions
- *Subliminal assistance* not to disturb sensory functions

Smart Suit®

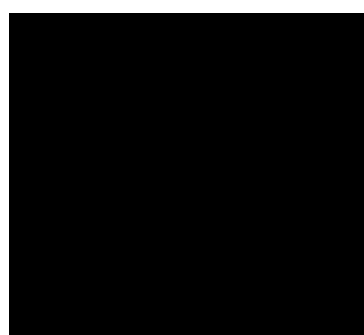
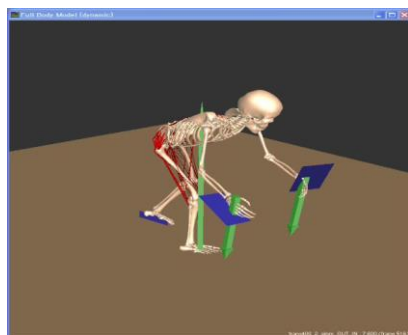
Semi-active KEIROKA Technology



Smart Suit® Lite

Passive KEIROKA Technology

KEIROKA technologies for buck support



Biomechanical design for Smart Suit



Contact to Prof. Tanaka (Hokkaido University, JP)
ttanaka@ssi.ist.hokudai.ac.jp

Mosaic Workers

Mosaic Worker Model

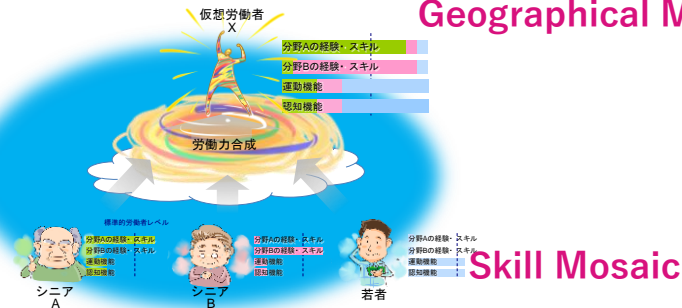
The diagram shows a grid representing worker availability. The columns are numbered 3, 4, 5, 6, 7, 8. The rows are labeled with names: Aさん, Bさん, Cさん, Dさん, Eさん. A red box highlights a specific cell in the grid. Below the grid, a sequence of letters A, C, E, B, D, A is shown. To the left is a photo of people working in a field. To the right is a photo of people working at a computer workstation.

Time Mosaic

GBER: Gathering Brisk Elderly in the Region



GBER: 地域活動へのマッチングプラットフォーム



Geographical Mosaic

Skill Mosaic

Schedule



Location



Interest



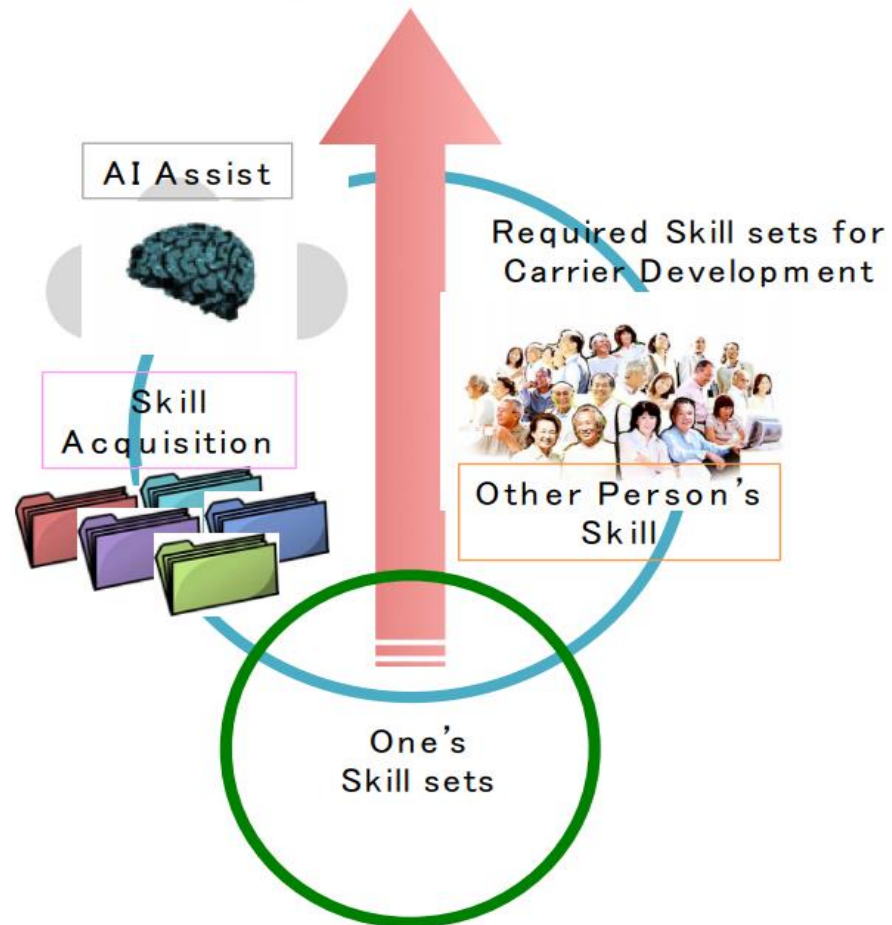
地域参加できる予定管理

生活圏内の地域活動を検索

興味関心を手軽に入力

AI Platform for Augmenting Intelligent Production of Diverse Human Resources

Augmenting Intelligent Production



Life Expectancy



Healthy Life Expectancy

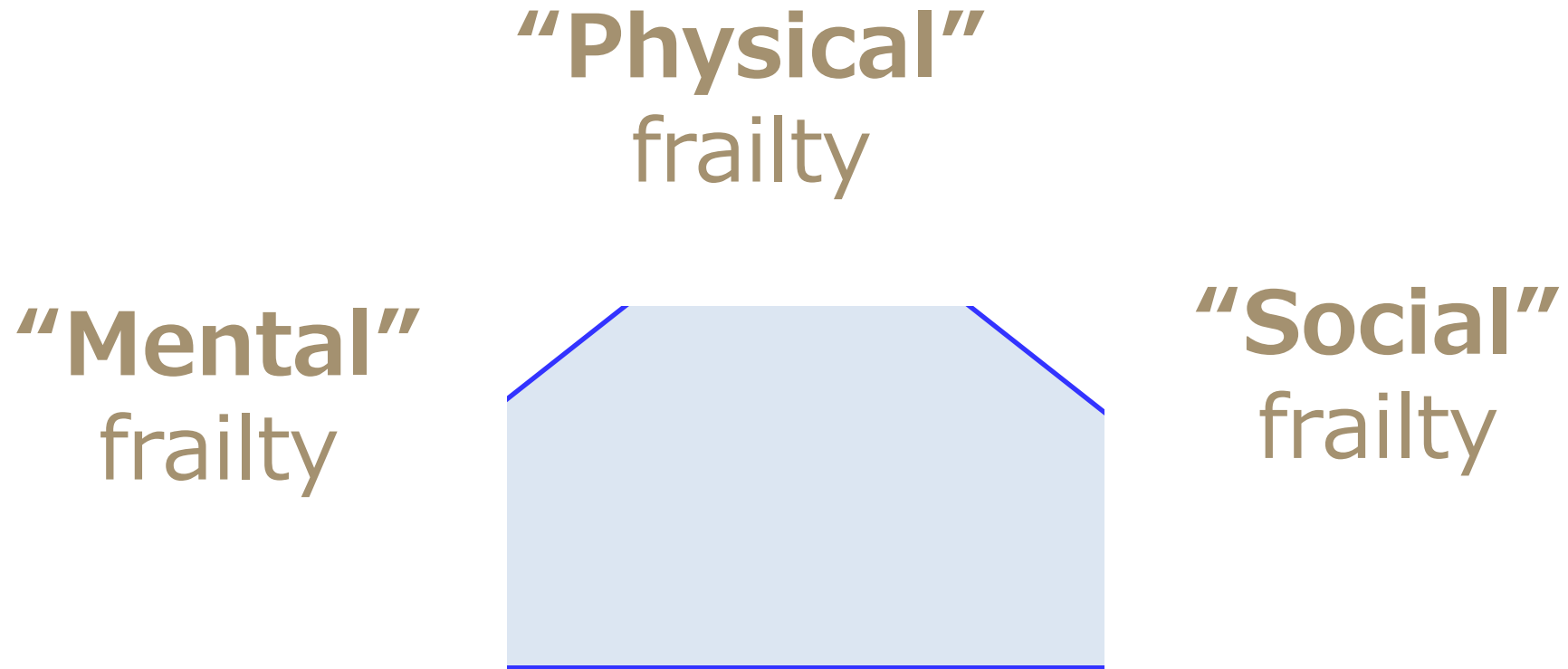


Engaged Life Expectancy

Frailty Prevention

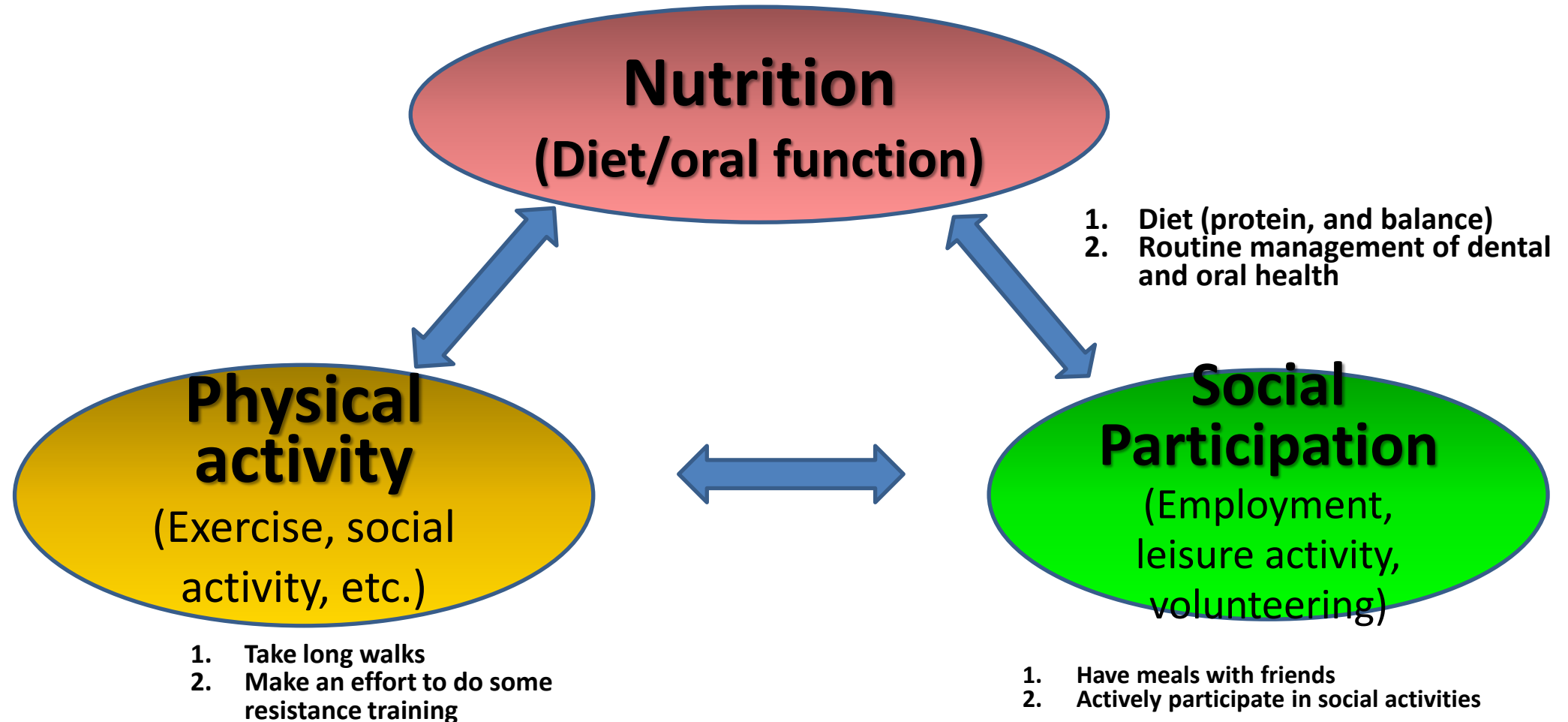


Multi-dimensional Frailty



"The Trinity" for Health and Longevity

Early prevention of frailty due to sarcopenia



Borrowed from Prof. Katsuya Iijima's (Univ. of Tokyo) lecture

Frailty Check-up Conducted by Senior Citizen Supporters

Training program for senior citizen supporters



Frailty check-up conducted by senior citizen supporters



Borrowed from Prof. Katsuya Iijima's (Univ. of Tokyo) lecture

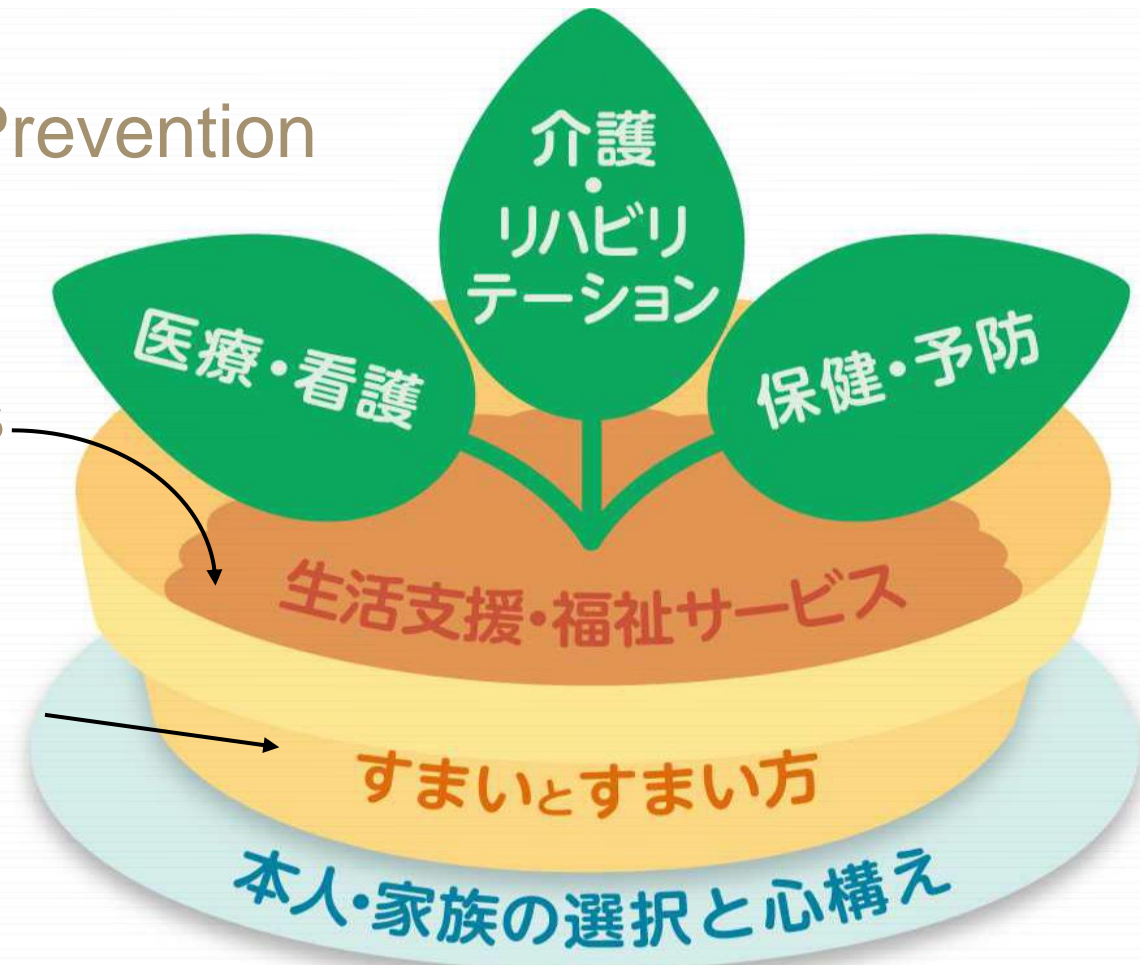
Flowerpot Concept of Integrated Community Care System

Plant: Healthcare & Prevention

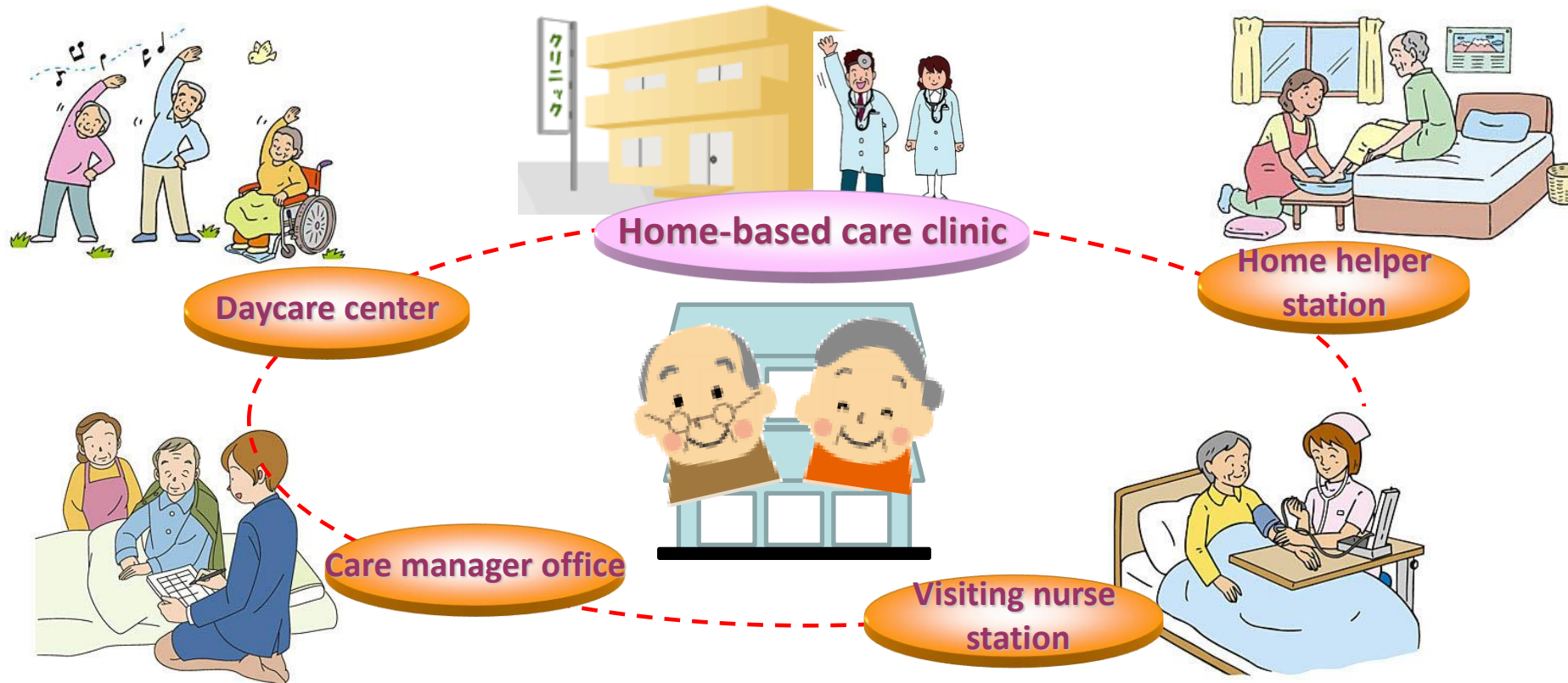
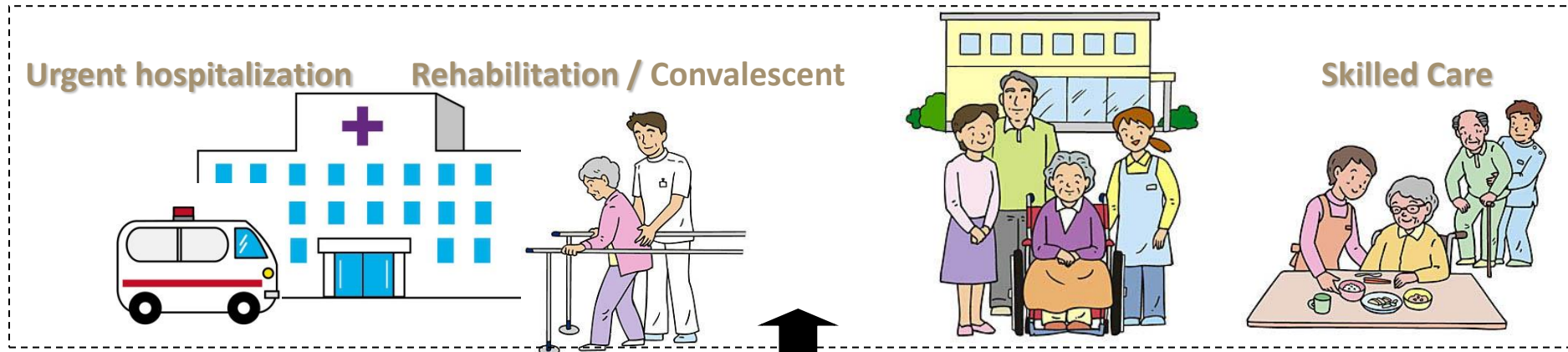
Earth: Social services

Flowerpot: Housing

Tray: Patient's choice & preparation



Community-based Health Care



△ : Primary Doctor

▲ : Sub-doctor

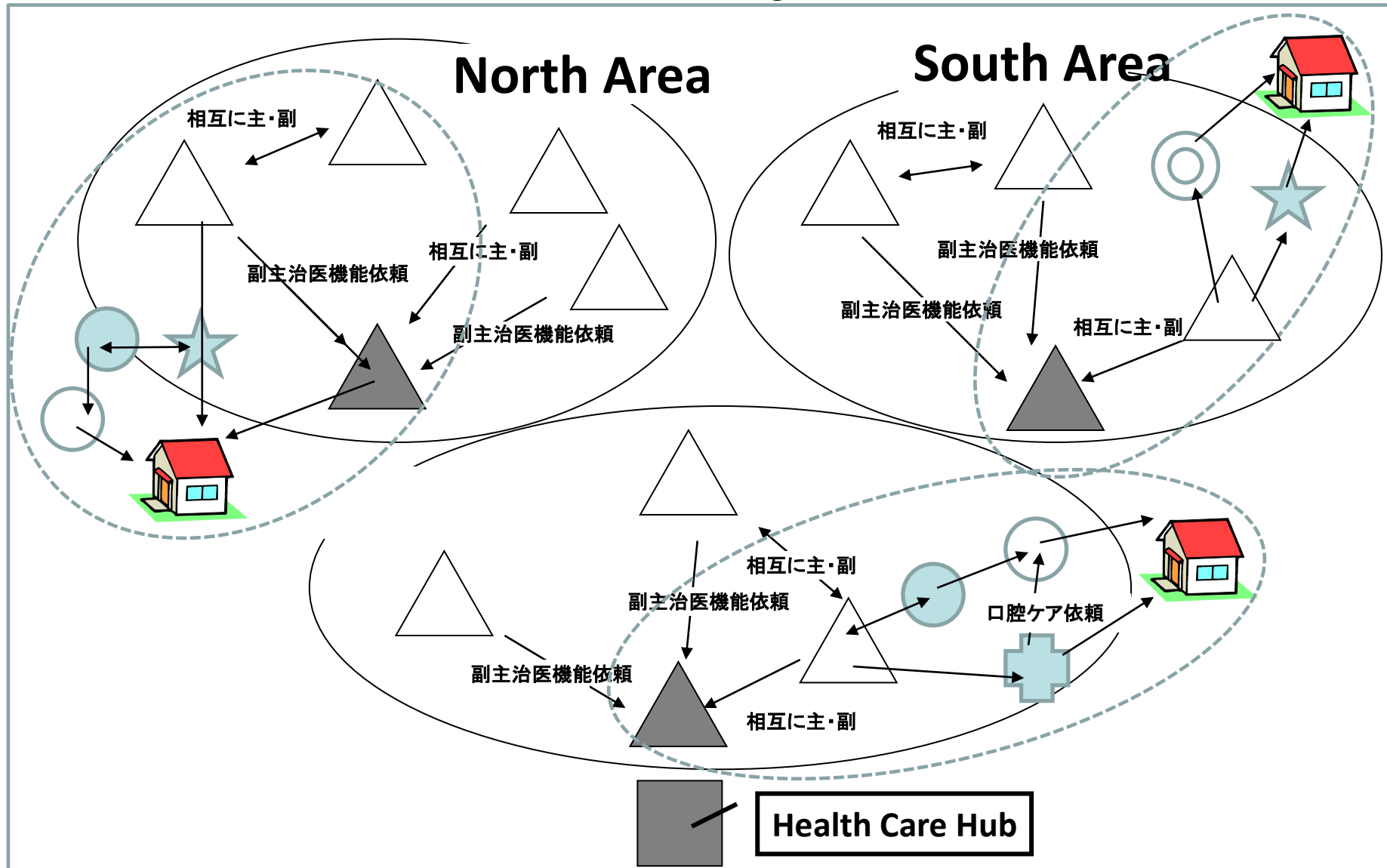
■ : Health Care Hub

★ : Visiting Nurse ● : Care Manager

○ : Visiting Caregiver

◎ : Visiting Pharmacist

⊕ : Visiting Dentist



Borrowed from Prof. Tetsuo Tsuji's (Univ. of Tokyo) lecture

5 Working Groups

(1) Physician WG

- Kashiwa Medical Association and hospitals
- Workable relations among the primary doctors, sub-doctors and hospitals

(2) Coordination WG

- Coordination among health care and long-term-care services

(3) Trial Practice WG

- Testing and verification of the system using by trial runs

(4) Hospital WG

- Discharge protocol and backup system of home-based care

(5) Face-to-Face WG

- All service providers get together and enhance the partnerships



Borrowed from Prof. Tetsuo Tsuji's (Univ. of Tokyo) lecture

Training Workshop for Health and LTC Professionals on Home-based Care

Day 1

○Curriculum

- Needs for home-based care
- Identifying useful resources in the area (GW)
- GW by profession
- Networking party



GW by mixed professionals

Practicum

(Physician only)

○3 hours × 2 times

○Options

Accompany with:

- Physician home visit
- Nurse home visit
- Care manager visit
- Ward rounds in hospice



Accompanying Dr. home visit

Day 2

(1 month after Day 1)

○Curriculum

- Starting Home-based Care
- Collaboration of multi-professionals
- GW by profession
- Review of practicum experience (GW)
- Challenges and solutions of home-based care (GW)
- System & compensation
- Awarding certificate



Group photo

Borrowed from Prof. Tetsuo Tsuji's (Univ. of Tokyo) lecture

Assisted Living in Community

◇イメージ図

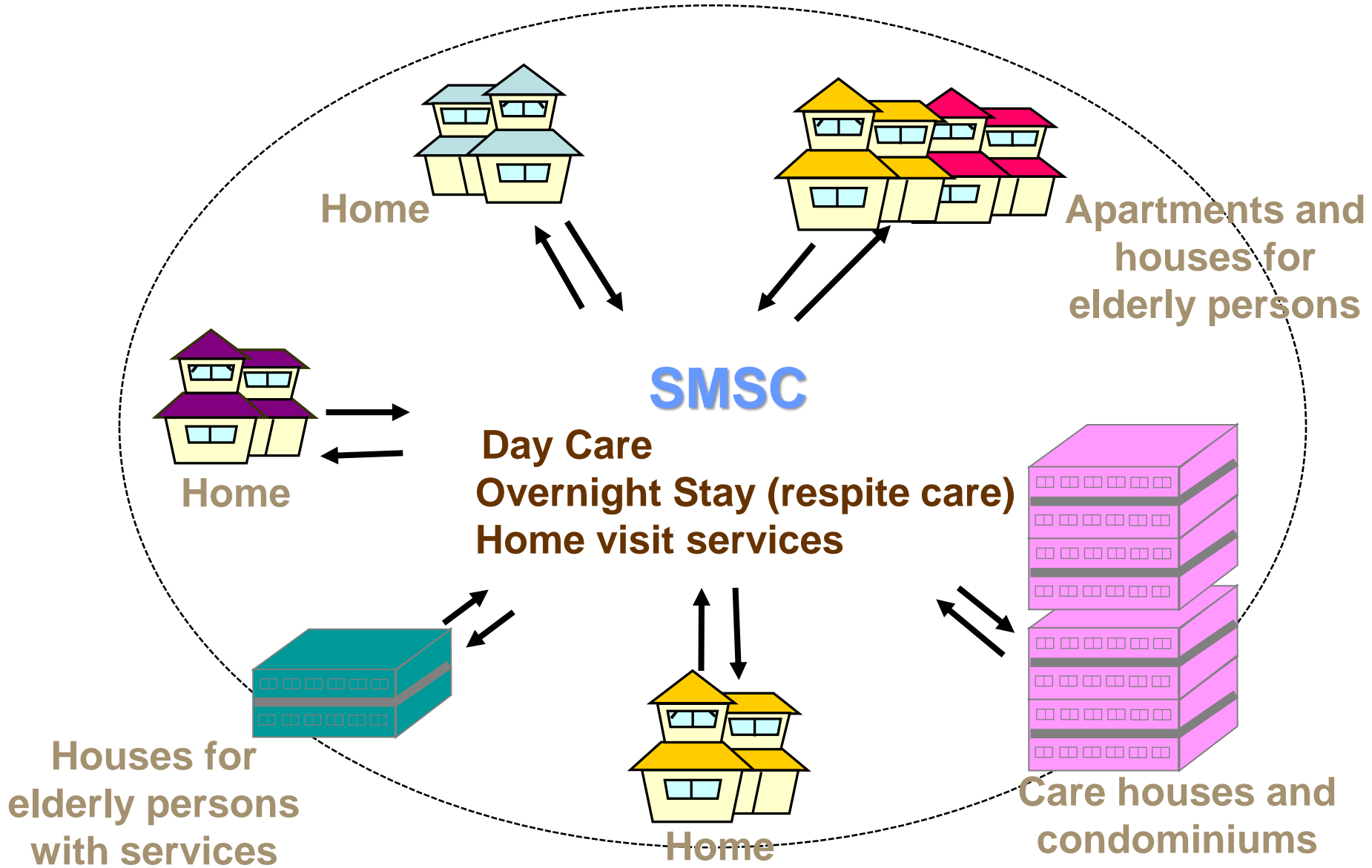


Home-based Health Care



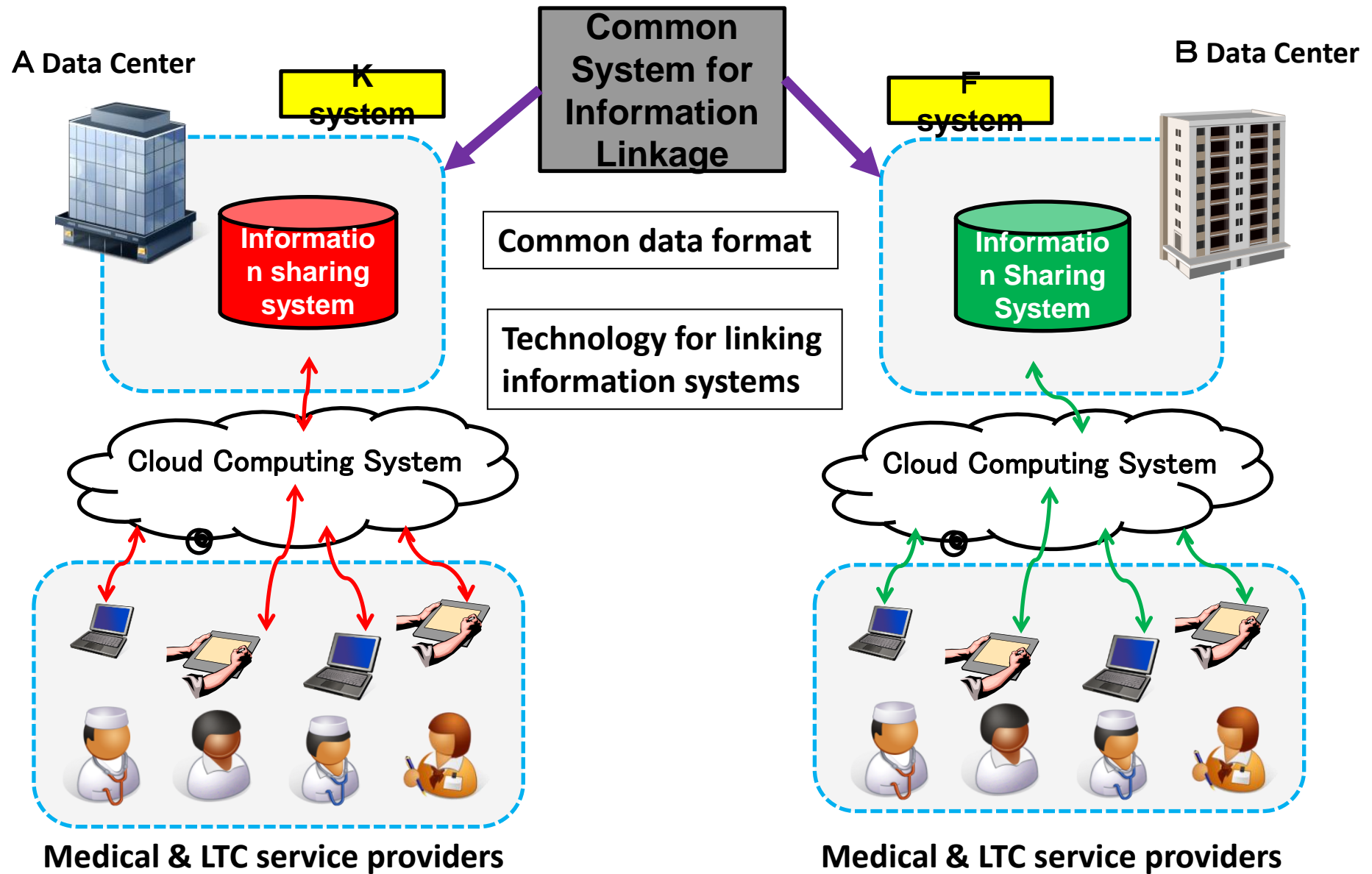
Borrowed from Prof. Tetsuo Tsuji's (Univ. of Tokyo) lecture

Small Multifunctional Service Center

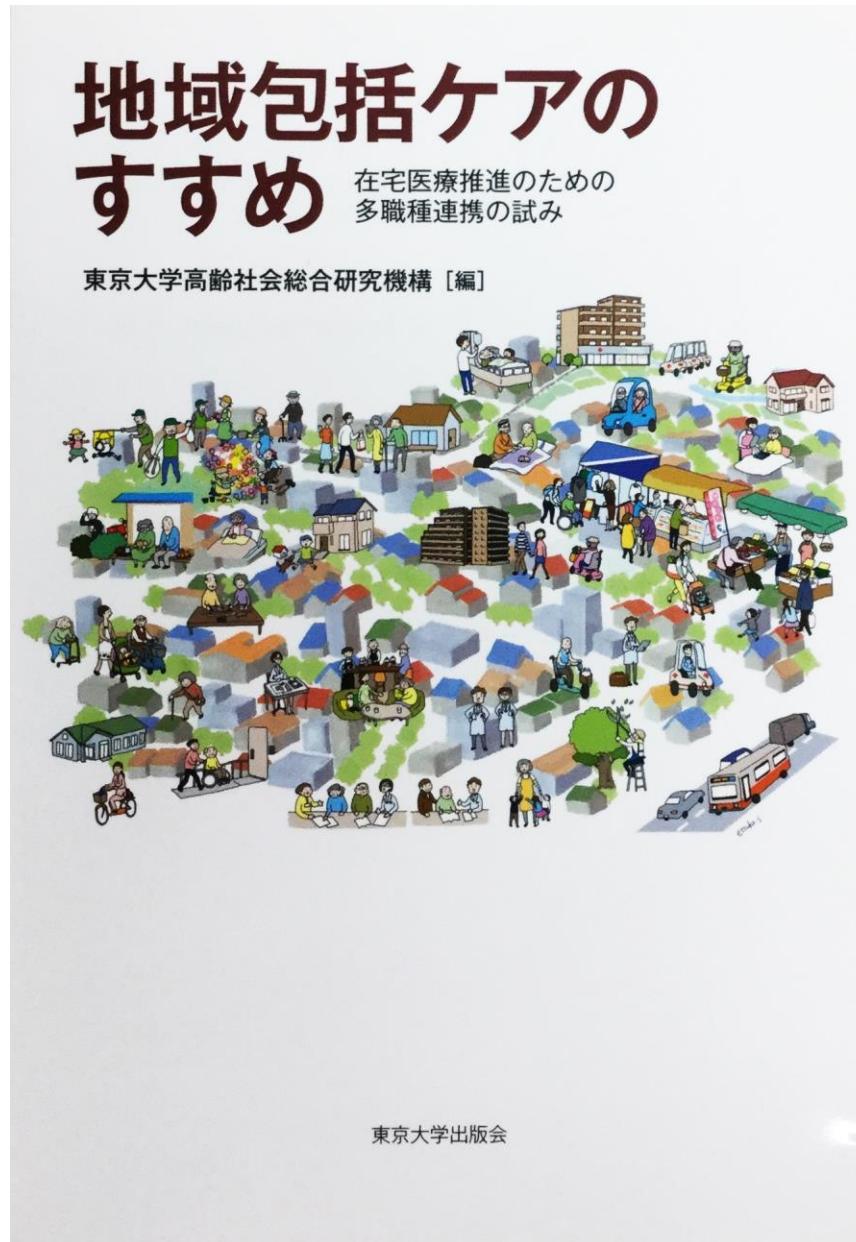


Borrowed from Prof. Tetsuo Tsuji's (Univ. of Tokyo) lecture

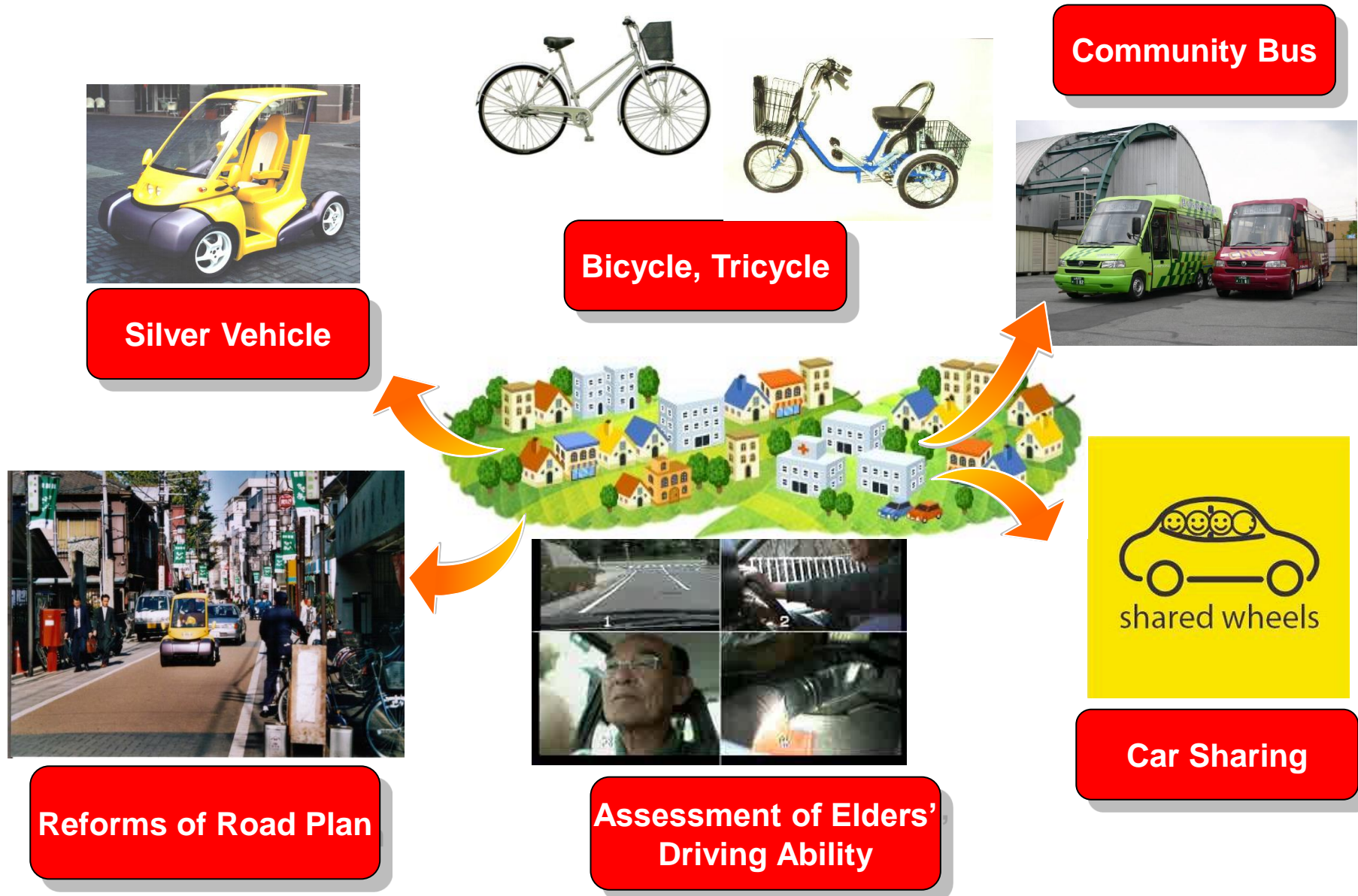
Common Infrastructure for Sharing Information



Guidebook to Home-based Health Care System



Alternative Means of Transportation



Reaching out by ICT



Smart Home



Communication



Internet of Things

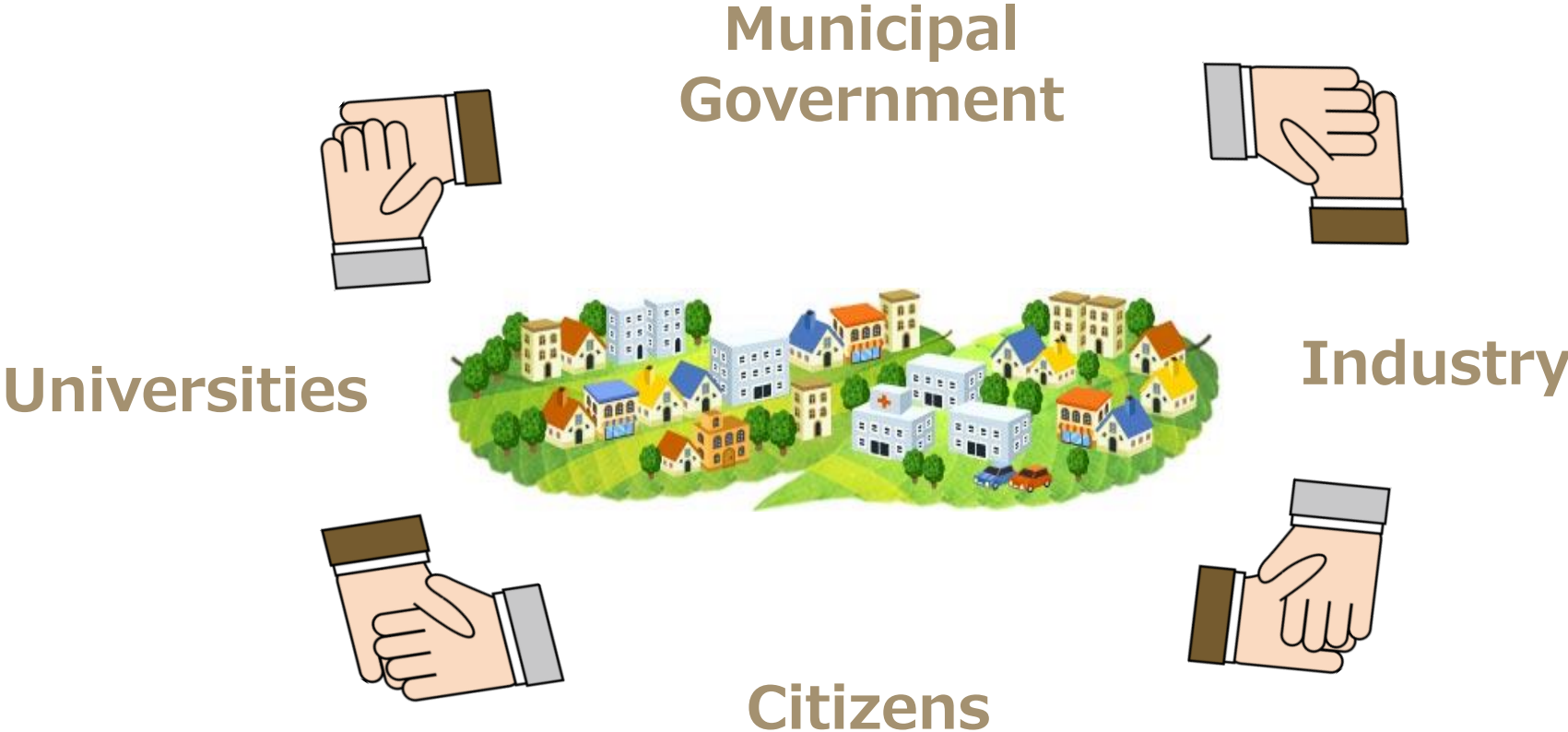


Telehealth



Health Monitoring

Collaboration of Multi-stakeholders



Action Research for Age-friendly Communities

