

Healthcare in Society **5.0**

Overview

March 20, 2018

Keidanren (Japan Business Federation)

Contents

 **Introduction** p. 2

 **Concepts** p. 3

 **Action Plan** p. 6

 **Concluding Remarks** p. 14

Introduction

Hyper-aging has confronted Japanese society with a plethora of challenges.

The world is watching to see how it solve these issues while maintaining its system of high-quality healthcare.

With the trend toward a human-centered society with the 100-year life, we discussed healthcare in Society 5.0 to improve the healthy life expectancy and vitality of individual citizens.

We propose a new Japanese model of healthcare that treats or prevents hitherto intractable illnesses, improving human health in Japan and worldwide, as well as contributing the achievement of SDGs, and global challenges.

Digitalization of the individual

Advances in IT enables the digitalization of information on human biometrics and physiological function. Utilizing these massive data resources will generate a diverse array of new value.



Advances in biotechnology

These will allow more-elaborate temporal and spatial observations of biological forms and functions. Advances in IT enables analysis of life forms as complex, integrated systems.

Healthcare Scenarios

Society 4.0

Healthcare in Society 5.0

Curative care

ME-BYO care
and prevention

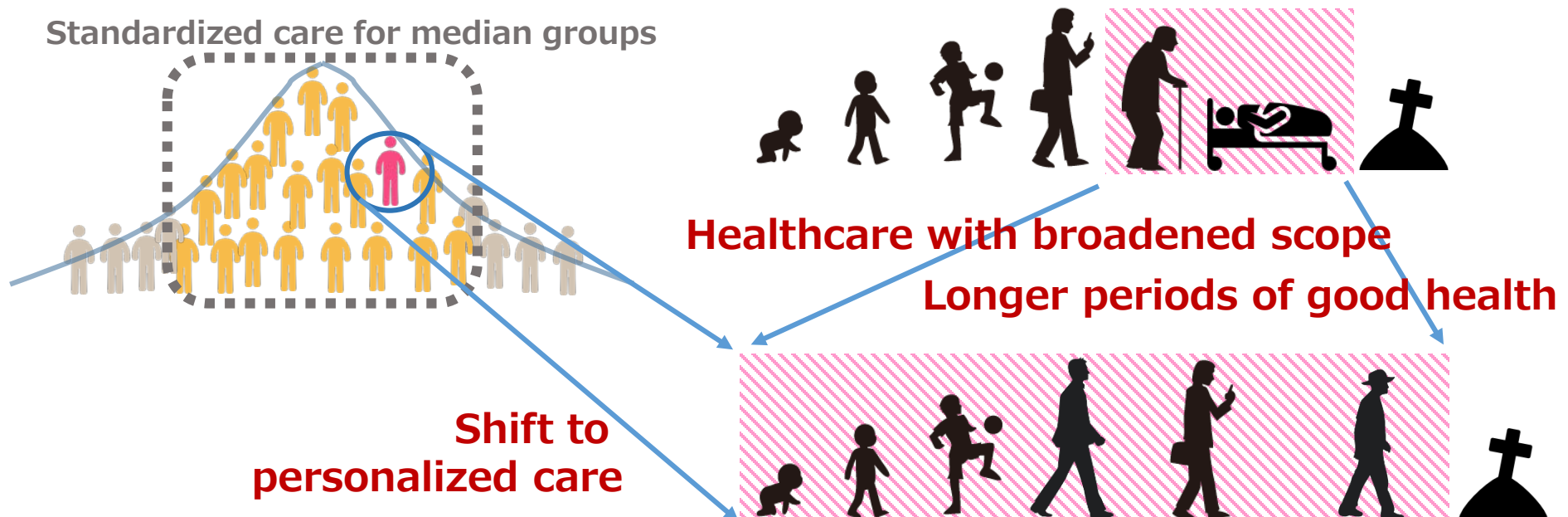
Standardized care

Personalized care

Healthcare provider-led

Active patient involvement

Standardized care for median groups



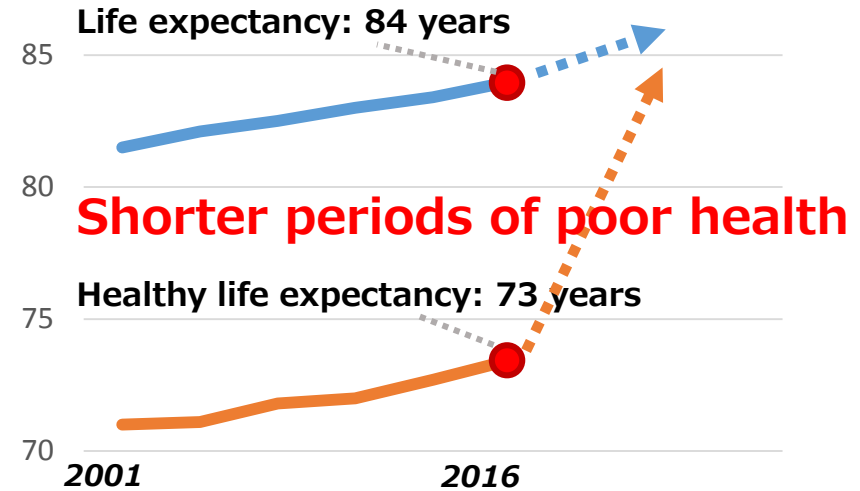
*ME-BYO: Early-stage disease condition prior to appearance of symptoms.

Generated Values

Improved
Quality of Life & Society

Keidanren
Policy & Action

- ✓ Improved longevity with longer periods of good health.
- ✓ Life-course care for patients with cancer, heart disease, psychiatric disorders, or other conditions that demand lifestyle management and long-term monitoring.



Sources: Ministry of Health, Labour and Welfare, "Abridged Life Tables," "Comprehensive Survey of Living Conditions," etc.

Improved quality of life

- ✓ Minimize the incidence and severity of disease and optimize medical expenses.
- ✓ Demonstrate world-leading success in the field in Japan, promote social system applications overseas, and cultivate healthcare as a growth industry.

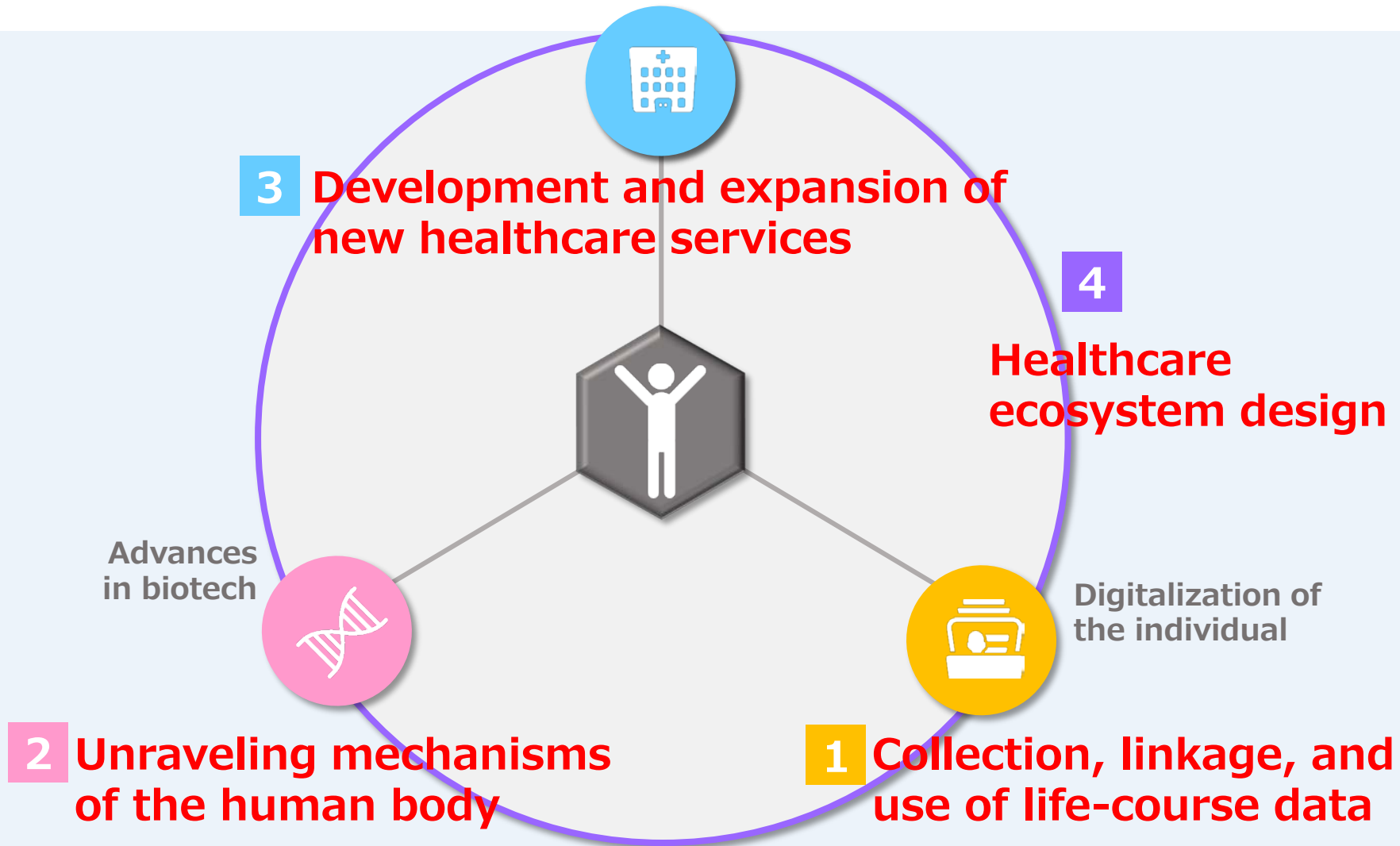
Longer periods of good health

	National Market	Foreign Market
2013	¥16 trillion	¥163 trillion
2020	¥26 trillion	¥311 trillion
2030	¥37 trillion	¥525 trillion

Source: Japan Revitalization Strategy (Revised 2015).

Improved quality of society

Positioning healthcare as a growth industry 5



1 Collection, Linkage & Use of Life-course Data

Genome and omics data Activity & health data Medical data Living wills
Maternity passbook Data from general/specified health exams Care-related data



Collect

Widened use of genomic tests, expanded health exam checklists;
Utilization of wearable devices;
Digitalization and standardization of medical and care data.

Link

Development of personal data-linked IDs;
PDS and medical blockchains;
Development of EHR, PHR.

Use

Healthcare data platform development;
Open access to NDB with expanded use by private sector;
Next-generation healthcare platform law.

Promotion of cohort studies

Continuation of Tohoku Medical Megabank Project

Discovering new biomarkers and studying analysis technologies

Promotion of microbiome research

Example

Hirosaki COI Center of Healthy Aging Innovation

A project aimed at solving issues affecting Aomori Pref. with participation from private companies, universities, and research institutes, it has harnessed big data from health checkups to develop preventive methods and new business opportunities.



*Cohort studies are typically long-term studies that examine correlations between risk factors and the health status of individuals belonging to a specific group.

*Microbiome research examines correlations between disease and microorganisms that inhabit the human body.

Next-generation medicine

The provision of personalized medicine, regenerative medicine, and other advanced medical approaches as well as digital therapy, liquid biopsies, and other new forms of care.

Healthcare in Society 5.0

Integrated healthcare services

Services coordinated by private firms, local government, and hospital institutions to develop personal health programs and provide presymptomatic care and prevention support.

Depth

Scope

*Digital therapy: Drug and other dependence therapy and other treatments that utilize smartphone apps.

*Liquid biopsies: Diagnostic screening that can detect minute levels of cancer DNA in blood samples.

1. PDS managed through biometric authentication

- ◇ Entry and use of various data in PDS with personal consent.

2. Dietary recommendations

- ◇ Nutritional database and dietary plans tailored to the individual.

3. Remote monitoring services

- ◇ Health status and emergency monitoring, with coordinated care from medical institutions.

4. Design of personalized healthcare plans

- ◇ Design of treatment and nursing care plans with PDS data.

5. Health improvement incentives

- ◇ Membership and service-fee discounts for individuals in improved health.

6. Offshore healthcare services

- ◇ Mainly in Asian countries marked by advanced aging.
Contributes to industry creation and improved healthcare abroad.

7. Physical/mental support and psychiatric care

- ◇ Physical/mental support and psychiatric care utilizing virtual dialogue agents.

1. Personalized medicine

- ◇ Advances in genomic diagnosis and therapy; support for drug discovery with AI.

2. Regenerative medicine

- ◇ Broad-based development of therapies using iPS and ES cells.

3. Diagnostic support

- ◇ Support for physician diagnoses, diagnostic imaging, liquid biopsies.

4. Therapeutic support

- ◇ Development of advanced therapeutic instrumentation, promotion of digital therapy.

5. Nursing care support

- ◇ Nursing care facility IT enhancements, research on automated care, treatments for dementia.

6. Advanced technologies and ethics

- ◇ Biosecurity, gene editing, AI.

(1) Promotion of open innovation

- ◇ Promotion of collaboration between the medical field and other fields.

(2) Study of institutional frameworks for healthcare system

- ◇ Promotion of functional differentiation at the community level.

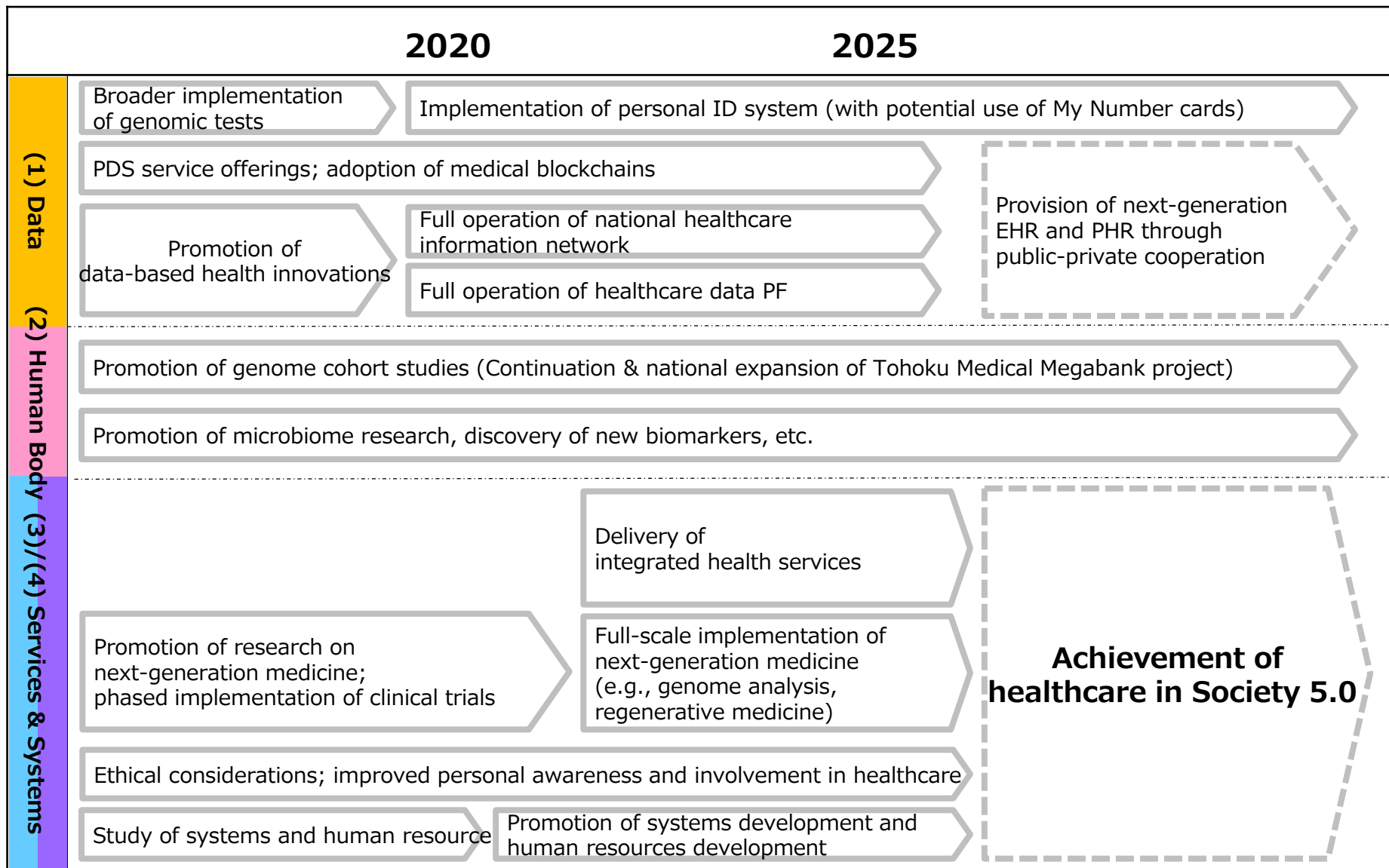
(3) Cultivation of human resources for ecosystem support

- ◇ New learning opportunities for physicians, gains in personal literacy of IT and medicine.

(4) Stronger coordination among government command centers, ministries, and agencies

- ◇ Coordination between CSTI and Headquarters for Healthcare Policy.

(Reference) Roadmap



Closing Remarks

Society 5.0 is a human-centered society. Healthcare is one domain that could benefit most through utilization of cutting-edge technologies.

As we confront the challenges of hyper-aging, industry will harness its wealth of expertise to build a new healthcare ecosystem while giving consideration to privacy and security.

We hope these proposals will spur deeper dialogue on the issues among industry, academia, the government, and the general public.

Keidanren

Policy & Action