Rebuilding Japan by promoting people-centered data-based health management initiatives

-From "supply side" to "demand side"-

AMDD Monthly Lecture Meeting

December 13, 2022

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## Lost 30 Years

#### Potential growth rate over the past 30 years



#### Growth = f(capital, labor, technological innovation)

Japan's two fatal failures after the bubble economy burst (1) Innovation policy (university reform, etc.

(2) Population policy

	1989		сар	italiz	zation 20	21	
	Δ Corld's Top 50 Com Market Capitaliz	panies by ation			World's Top 50 Market Ca	Companies b pitalization	у
Rank	Company Name	Market capitalization (US\$ 0.1 billion)	Country of headquarters	Rank	Company Name	Market capitalization (US\$ 0.1 billion)	Country of headquarters
1	NTT	1,638.6	Japan	1	Apple	21,335.1	U.S.
2	The Industrial Bank of Japan	715.9	Japan	2	Saudi Aramco	19,011.0	Saudi Arabia
3	The Sumitomo Bank, Ltd.	695.9	Japan	3	Microsoft	18,662.5	U.S.
4	The Fuji Bank, Limited	670.8	Japan	4	Amazon.com. Inc.	16,702.5	U.S.
5	The Dal-Ichi Kangyo Bank, Ltd.	660.9	Japan	5	Alphabet	15,613.0	U.S.
6	1014	646.5	U.S.	6	Facebook	9,027.0	U.S.
7	The Mitsubishi Bank Ltd	592.7	Japan	7	Tencent Holdinas	7,615.4	China
8	Exron corporation	549.2	U.S.	8	Tesla	6,489.0	U.S.
9	Tokyo Electric Power	544.6	Japan	9	Berkshire Hathaway	6,406.5	U.S.
10	Royal Dutch Shell	543.6	UK	10	Alibaba Group Holding	5,730,4	China
11	TOYOTA MOTOR CORPORATION	541.7	Japan	11	TSMC	5,494,2	US
12	GE	493.6	U.S.	12	Visa	5,105,5	US
13	Th. 0	492.9	Japan	13	Samsung Electro-Mechanics	5.081.3	U.S.
14	The Sanwa Bank, Limited	444.4	Japan	14	IPMorgan Chase	4 706 5	11.5
15	NIPPON STEEL CORPORATION	414.9	Japan	15	Johnson & Johnson	4 418 0	0.0.
16		381.2		16	Wolmort	3 959 1	0.3.
17	AI&I	250 3	Janan	17		2,002,6	0.3.
10	HITACNI, LTO. Mateushita Danki Sannun Kabushiki Kalaba	350.2	Japan	10	OntedHealth Group	3,002.0	0.3.
10	malousina bena cungyo rabasina rasha	357.0		10	Kweichow Moutai	3,636.0	China
19	Philip Morris International Inc.	321.4	lanan	19	Mactorcard	3,833.2	France
20	TOSHIBA CORPORATION	309.1	Japan	20	Mastercard	3,725.4	U.S.
21	Kansai Electric Power	308.9	Japan	21		3,578.0	U.S.
22	ne congrenn orear bank or oppan, climed	308.5	Japan	22	INVIDIA	3,572.8	U.S.
23	The Tokai Bank, Ltd.	305.4	Japan	23	Bank of America	3,513.4	U.S.
24	The Mitsui Bank, Ltd.	296.9	Japan	24	Nestle	3,480.3	Switzerland
25	Merck & Co.	275.2	U.S.	25	Walt Disney	3,344.6	U.S.
26	NISSAN MOTOR CO.,LTD.	269.8	Japan	26	P&G	3,293.9	U.S.
27	Mitsubishi Heavy Industries, Ltd.	266.5	Japan	27	PayPal	2,937.5	U.S.
28	Du Folit	260.8	U.S.	28	Roche Holding	2,936.5	U.S.
29	GM	252.5	U.S.	29	dustrial and Commercial Bank of China	2,677.5	China
30	Mitsubishi Trust & Banking Corporation	246.7	Japan	30	ASML Holding	2,633.2	Netherlands
31	BT	242.9	UK	31	Conicast	2,601.7	U.S.
32	BellSouth	241.7	U.S.	32	Exxon Mobil	2,505.8	U.S.
33	BP	241.5	U.S.	33	Verizon Communications	2,426.1	U.S.
34	Ford Motor Company	239.3	U.S.	34	LOreal	2,354.0	France
35	The Bank of Tokyo Ltd	229.3	U.S.	35	Adobe	2,345.5	U.S.
36	The bank of Fokyo, Etd.	224.6	Japan	36	Coca-Cola	2,334.3	U.S.
37	CHUBU Electric Power	219.7	Japan	37	Intel Corporation	2,297.6	U.S.
38	Sumitomo Trust and Banking Co., Ltd	218.7	Japan	38	AI&I	2,286.2	U.S.
39	. Coca-Cola	215.0	U.S.	39	Oracle Corporation	2,264.4	U.S.
40	Walmart Inc.	214.9	U.S.	40	Meituan Dianping	2,262.5	China
41	Mitsubishi Estate Company, Limited	214.5	Japan	41	Netflix	2,231.1	U.S.
42	Kawasaki Staal Corporation	213.0	Japan	42	Pfizer	2,228.5	U.S.
43	Nawasaki Sieer Corporation	211.5	U.S.	43	Cisco Systems	2,140.9	U.S.
44	TOKYO GAS CO LTD	211.3	Japan	44	TOYOTA MOTOR CORPORATION	2,087.9	Japan
45	Tokio Marine & Nichido Fire Insurance Co., Ltd.	209.1	Japan	45		2,082.3	U.S.
46	NKK	201.5	Japan	46	ADDOTT Laboratories	2,078.4	U.S.
47	ARKO Corp.	196.3	U.S	47	NIKE	2,045.9	U.S.
48	NEC Corporation	196.1	Japan	48	Chevron	2.031.1	China
49	Daiwa Securities Co. Ltd.	191.1	Japan	49	Unina Morchants Bank	2,010.1	U.S.
50	Asahi Glass Co., Ltd.	190.5	Japan	50	AbbVie Ring (a lasurance (Grang) Company (China	2,009.5	China
Source: 1	able published on page 45 of Diar	nond Weekly (Au	igust 25, 2018	Sou	rce: Prenared based on data from	SPEEDA and Pla	omberg (data

issue) THE BUSINESS WEEK, U.S. Business Week (July 17, 1989 issue)

Source: Prepared based on data from SPEEDA and Bloomberg (data acquired on May 6, 2021)

1 Japanese company (31 companies in 1989) and 5 companies in the healthcare sector (1 company in 1989) out of 50 companies ranked by market capitalization in the world in 2020

スライド 2

A3 サイマル:英語社名表記を優先し、記載しておりますため少々レイアウトが乱れてしまい申し訳ございません。必要に応じて適宜ご調整をお願いいたします。 作成者, 2022/12/26

# The speed of change will accelerate in the post-COVID-19 world.

- In a world where people have gone through the COVID-19 pandemic, the speed of change will accelerate significantly.
- Meanwhile, if our country's digital transformation and other changes remain extremely slow as they are now, sooner or later, the backs of the front runners will finally be out of our sight.

## Conditions for our growth

In order to enhance the vitality of the Japanese economy, it is essential to create an environment that attracts a diverse range of global human resources and enables them to fully demonstrate their capabilities.

Collaboration between "excellent government" and "excellent private sector."

Speedy "investment" in and "movement of human resources" to growth areas are necessary.

Both the public and private sectors need to make a major shift from "seniority-based wages and skill-based pay" to "job-based employment and job-based pay."

➡ A major reform to a "civil service system with freedom of movement in and out of the workforce"

# **THE World University Rankings 2022**

#### (World)

Rank	University Name	Country
1	University of Oxford	UK
2	Harvard University	U.S.
3	California Institute of Technology	U.S.
4	Stanford University	U.S.
5	University of Cambridge	UK
6	Massachusetts Institute of Technology	U.S.
7	Princeton University	U.S.
8	University of California, Berkeley	U.S.
9	Yale University	U.S.
10	University of Chicago	U.S.
11	Columbia University	U.S.
12	Imperial College London	UK
13	Johns Hopkins University	U.S.
13	The University of Pennsylvania	U.S.
15	Swiss Federal Institute of Technology in Zurich	Switzerland
16	Peking University	China
16	Tsinghua University	China
18	University of Toronto	Canada
18	University College London	UK
20	University of California, Los Angeles	U.S

	(Asia Pacific)	September 2, 2021
Rank	University Name, Asia, Australia	Country
16	Peking University	China
16	Tsinghua University	China
21	National University of Singapore	Singapore
30	University of Hong Kong	Hong Kong
33	The University of Melbourne	Australia
35	The University of Tokyo	Japan
46	Nanyang Technological University	Singapore
49	The Chinese University of Hong Kong	Hong Kong
54	The Australian National University	Australia
54	The University of Queensland	Australia
54	Seoul National University	South Korea
57	Monash University	Australia
58	The University of Sydney	Australia
60	Fudan University	China
61	Kyoto University	Japan
70	The University of New South Wales	Australia
75	Tam Kang University	China
84	Shanghai Jiao Tong University	China
88	University of Science and Technology of	China
91	The Hong Kong Polytechnic University	Hong Kong
99	KAIST	South Korea

Source: "THE World University Rankings 2022" published by Times Higher Education (THE), a British higher education magazine.

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### Why were there so few Japanese papers related to the COVID-19?

# Number of papers related to the COVID-19 published by OECD and China and number of the said papers per 100,000 population



# What is important is information sharing between the public and private sectors.

### As for countries other than Japan, the labor market is open to the world.

Australia's "28 years of consecutive growth" and "Changes in population" O Australia's total population surpassed 25 million in August 2018\*1. Every three years, the population increases by 1 million people (In the last 10 years, it increased by 350,000 people per year.) O The population increase can be attributed to two main factors,: "natural increase" and "increase due to migration," In recent years, more than half of the increase has been due to migration. Australia's total fertility rate is approximately 1.77 (2017-18) \*2, which is below the fertility rate that can sustain the population (approximately 2 1\*3) Real GDP YoY 5.1 4.6 5 4.0 4.0 Real GDP YoY 4.0 4.0 3.9 3.8 3.7 3.9 4 3.6 3.8 3.9 3.9 2.8 2.8 з (%) 2 2.3 2.3 19 1.9 1 0.4 -0.4 0 \*\*\*\*\*\*\*\*\*\*\*\*\*\* \$ \$ -1 Population and Population Increase 3000 (2500 2000 2000 Population increase (2017-18): approximately 390,000 people Breakdown increa 000 people) Population (10,000 peopl ncrease due to migration (NOM): approximately 240,000 peop latural increase (births - deaths): approximately 150,000 peopl Natural incr 40 atior 30 Increase due to migration (right axis) apulo 9 20 N 10 10 10 ല് 500 Natural increase (right axis) A7 0 Providation Statistics, 20081, 2005-0781119917, 200580/01/Stot 0 - Australian aphie Statistics](各年12月頃免表)を

Comparison of number\* and percentage of immigrants in each country

\*Number of immigrants: Number of foreign-born residents



Percentages of demographic changes in each country



(Source: World Bank, Ministry of Internal Affairs and Communications, HAVER)



Australia



New Zealand



(Source: World Bank, HAVER

スライド 7

#### **A7** サイマル: 左上のグラフ注釈は不鮮明なため作業対象外としております。 作成者, 2022/12/28

# In order to achieve the growth rates of real GDP of 2%, it is essential to improve productivity and increase the number of workers.

		Japan				
		Simulation (2022-2040)			UK	0.5
	Actual results 1990-2021	Scenario for continuation of declining trend in number of workers	Scenario for encouraging women and the elderly to take an employment	Scenario with flat labor productivity growth	Actual results 1990-2021	Actual results 1990-2021
Growth rates of real GDP (annual average)	0.9%		2.0% (Target)		1.8%	2.4%
Labor productivity growth rate	0.6%	2.9%	2.3%	0.6%	1.2%	1.5%
Percentage of an increase in the number of workers	0.3%	▲0.9%	<b>▲</b> 0.3%	1.4%	0.6%	0.8%
Increase/decrease in the number of workers (million people)	+6	▲11	▲4	+20	+6	+35
Differences from the "Scenario for continuation of declining trend in number of workers" (Million people)	-	_	+7	+31	-	-

<Notes>

- Scenario for continuation of declining trend in number of workers: Based on the assumption that the labor force participation rates for each age group and gender remain unchanged at the 2021 level.
- Scenario for encouraging women and the elderly to take an employment: Based on the following assumptions. (1) The labor force participation rate of women aged between 30 and 59 will increase to a level roughly similar to that of Sweden in 2010 by 2040.
- (2) The labor force participation rates of the elderly aged between 60 and 64 will increase to the same level as that of those aged between 55 and 59 by 2040, and that the labor force participation rate of those aged 65 or older will also increase commensurately. (3) The unemployment rate will improve by around 1% by 2025.
- Scenario with flat labor productivity growth: It is assumed that the labor productivity will remain at the historical (1990-2021) average.

(Sources): SNA (National Accounts of Japan), Cabinet Office; Labor Force Survey, Ministry of Internal Affairs and Communications; National Institute of Population and Social Security Research; OECD, etc.

# 2021: G7 Summit Communiqué at the G7 Cornwall Summit held in Cornwall, the United Kingdom



#### CARBIS BAY G7 SUMMIT COMMUNIQUÉ

We, the leaders of the Group of Seven, met in Cornwall on 11-13 June 2021 determined to beat COVID-19 and build back better. We remembered everyone who has been lost to the pandemic and paid tribute to those still striving to overcome it. Inspired by their example of collaboration and determination, we gathered united by the principle that brought us together originally, that shared beliefs and shared responsibilities are the bedrock of leadership and prosperity. Guided by this, our enduring ideals as free open societies and democracies, and by our commitment to multilateralism, we have agreed a shared G7 agenda for global action to:

• End the pandemic and prepare for the future by driving an intensified international effort, starting immediately, to vaccinate the world by getting as many safe vaccines to as many people as possible as fast as possible. Total G7 commitments since the start of the pandemic provide for a total of over two billion vaccine doses, with the commitments since we last met in February 2021, including here in Carbis Bay, providing for one billion doses over the next year. At the same time, we will <u>create the appropriate frameworks</u> to strengthen our collective defenses against threats to global health by: increasing and coordinating on global manufacturing capacity on all continents; improving early warning systems; and <u>support science in a mission to shorten the cycle for the development of safe and effective vaccines, treatments and tests from 300 to 100 days</u>.

From the website of the Ministry of Foreign Affairs of Japan

# CEPI "100 Days Mission"

# What if we had lifesaving vaccines in 100 days?

The world has witnessed and dramatically benefited from a game-changing global COVID-19 vaccine response.

The first COVID-19 vaccine was approved for emergency use in December 2020, just 326 days after the SARS-CoV-2 virus was identified. Its rapid development and approval was unlike anything else before it.

Previously, the fastest any vaccine had been developed and approved was four years. However, thanks to prior research on other coronaviruses and use of innovative scientific technology, CEPI and others were able to advance trials of multiple COVID-19 vaccines at record speed.

But what if the world could take this even further? What if we could reduce this timeline by two thirds and <u>develop safe and</u> <u>effective vaccine within 100 days?</u>

This ambitious goal lies at the heart of CEPI's \$3.5bn plan to end pandemics and is also endorsed by the G20 and heads of multiple pharmaceutical companies.



### IMD World Digital Competitiveness Ranking 2022 Japan ranked 29th

2022	2021	Country/Region	2022	2021	Country/Region
1	4	Denmark	16	14	UK
2	1	U.S.	17	15	China
3	3	Sweden	18	16	Austria
4	5	Singapore	19	18	Germany
5	6	Switzerland	20	25	Estonia
6	7	Netherlands	21	21	Iceland
7	11	Finland	22	24	France
8	12	South Korea	23	26	Belgium
9	2	Hong Kong	24	18	Ireland
10	13	Canada	25	30	Lithuania
11	8	Taiwan	26	29	Qatar
12	9	Norway	27	23	New Zealand
13	10	UAE	28	31	Spain
14	20	Australia	29	28	Japan
15	17	Israel	30	22	Luxembourg

Source: IMD World Digital Competitiveness Ranking 2022

### Digital Transformation in health, medical care and long-term care

- Digital transformation (DX) in health, healthcare, and long-term care is a priority policy of the government, along with education and disaster prevention.
- In order to realize health, healthcare, and long-term care based on data and evidence, the entire databased health management initiatives, including the promotion of the protection and utilization of personal information, must be promoted systematically and promptly.

## Priority plans for the realization of a digital society

Digital Agency "Priority plans for the realization of a digital society" (Cabinet decision on June 7, 2022)

### Our vision for a digital society

 "A society where people can select services that meet their individual needs through the utilization of digital technology and can realize multiple forms of happiness" ("Basic policy on reforms for the realization of a digital society" (December 25, 2020)) → This will lead to the promotion of "people-friendly digitization, where no one is left behind."

#### In order to realize our "vision for the society we aspire to," the following (1) to (6) are required.



 Satisfaction and utilization rates of citizens and private companies were set as indicators to grasp the progress of digitization in the big picture, including the progress toward the realization of (1) through (6) above. The progress will be periodically monitored and presented to citizens in order to steadily promote digitization.

### Welfare's data-based health management initiatives" (2017)

"Data-based health management initiatives promotion plan and roadmap on the promotion of big data utilization to ensure people's health" (July 4, 2017) issued by the Ministry of Health, Labour and Welfare (MHLW)

Data-based health management initiatives promotion plan and roadmap on the promotion of big data utilization to ensure people's health

#### Through the thorough utilization of health and medical data, Material 1 we will realize "healthier lives" for all people.

Japan is currently facing challenges associated with its declining birthrate and aging population. One important clue to solving this problem is "data-based health management initiatives."

Japan faces a super-aging society ahead of the rest of the world. The world is paying attention to how to extend the healthy life expectancy of each individual, from the elderly to children. Moreover, we will tackle the unprecedented issue of how to continue to ensure the sustainability of the social security system even in an aging society with a declining birthrate. One important clue to solving this issue is data-based health management initiatives.

#### How our lives will change

Medical and long-term care professionals, researchers, insurers, companies, and governments, etc. work together to support citizens and patients and lead them to good health.

- Each person will be able to easily grasp changes in his/her own health data and take preventive actions on his/her own.
- Management will be able to achieve the improvement of productivity by increasing the vitality of employees with improved health through health management initiatives based on data utilization.
- · Children (and persons) with disabilities who need medical care can go out safety, without anxiety in case of emergency.
- · Even if you encounter unexpected disasters or accidents, you can receive reliable medical care with peace of mind.
- Independence-supportive long-term care will be realized through scientifically based long-term care services to reduce anxiety of the individuals and their family members.
- · Genomic (genetic) medicine will greatly advance personalized cancer care and bring us closer to overcoming cancer.
- Optimal cure and care will be achieved through analysis of factors contributing to dementia. We aim to advance research on innovative drug discovery and overcome the challenges associated with dementia.

#### How to realize them.

We provide data and the fruits of advanced technology to citizens on the premise of reliable protection of personal information. We develop and provide healthcare ICT services from the "perspective of citizens, patients, and users."

Based on the premise of reliable protection of personal information, eliminate the stove-piped structure of health, medical care, and long-term care, and establish a system for "development of an ICT environment that allows data to be organically linked," "construction of a healthcare data platform," and "introduction of cutting-edge technologies such as genome analysis and AI into healthcare.

At the same time, reform the health insurance claims review & reimbursement services institutions that handle vast amounts of data from a "business group" to a "brain group that thinks and acts on its own" to achieve nationwide unification of reviews and promotion of smoother utilization of big data, etc.

Introduce advanced security monitoring utilizing AI, and defensive technologies, in order to protect the information on citizens' medical and long-term care. Establish an environment where healthcare data can be utilized with peace of mind by publishing guidelines for ensuring security with regard to the utilization of data and the results of security assessments and audits of utilization conditions.

The Ministry of Health, Labour and Welfare's "data-based health management initiatives promotion headquarters" will lead these initiatives to realize world-class healthcare services.

### "Data-based health management initiatives roadmap" prepared by the Ministry of Health, Labour and Welfare (June 4, 2021)

O Enable accessing one's health and medical information via the portal site called "Mynaportal," etc., and build a system with a convenient user interface (UI). In addition, by developing the framework, information which can be accessed by the patients themselves (medical examination data, claims/prescription data, electronic medical record data, long-term care data etc.) can be also accessed by medical institutions and long-term care institutions. This will enable people to access their health and medical data throughout their lives, as well as enable medical institutions and long-term care institutions

	to provide optima	I medical and long	g-term care services	based on the need	is of patients and users.	
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_				· · · · · · · · · · · · · · · · · · ·		

		FY2020	FY2021	FY2022	FY2023	FY2024	FY2025
	Medical checkup/						1
uilding a system that enables p	Examination data         Medical checkups for infants and pregnant women         Specific health checkups         Employer health checkups (Health checkups for employees under 40)         Municipality examinations	Accessib Legal and admi improvements	le via "Mynaportal Acco inistrative prepara System	" (from June 2020) essible via "Mynap tions/system	ortal" (from Octob Acces (from ccessible via "Myn	er 2021) sible via "Mynapo FY2023) aportal" (from ear	rtal" y FY2023)
eople to access t information	Class A: Diphtheria,	standard recording format formulation	Pilot demonstrat system improven	ion/ nents Start to p system ir from June 2017 acc	provide informatio mprovements com cessible via "Myna	n as soon as pleted portal" (from June	Accessible via "Mynaportal" from FY2022) "Available at all schools nationwide from FY2024 2017)
heir own health and medical	Vaccinations pertussis, etc. Class B: Influenza in the elderly, pneumococcus Develop an environmental arrangement to accelerate the utilization of safe and secure private PHR services Investigate suitable access environments with superior usability	*Develop a vaccinati Develop guidelines	nd operate COVID- on recording syste Start using FY2021) Develop additional guidelin high quality service levels i collaboration with industry groups, etc. Initiatives to improve the convenience of "Mynaportal"	19 * m (VRS) API to link "Mynap hes for n certification in collaboration wi industry groups, Investigate suitable acc favorable usability, such enables easy access to l (including measures oth	COVID-19-related inf available at as early ortal" and private Start syste PHR s ess environments with h as a framework that historical health data her than "Mynaportal"	ormation will be made a stage as possible. PHR operators (fr operation of third-pa m, etc. to provide ap ervices (from FY2023 Actions base results (sequ FY2024) Start enabling access ses weiling access ses	e om early irty certification propriate private ) d on the evaluation entially from quentially as available, witho

		FY2020	FY2021	FY2022	FY2023	FY2024	FY2025
Building a system that enabl	Claims/prescription data Pharmaceutical data (Past prescription/dispensing information based on claims) Electronic prescription data (Real- time prescription/dispensing information) Health data: · Medical institution names, etc. · Surgery and dialysis data, etc. · Medical management data, etc.	System improved Organize system requirements Organize system requirements	System improveme System improveme	Accessible via "My ents Ac	naportal" (from Oct cessible via "Mynap cessible via "Mynap	ober 2021) ortal" (from summe ortal" (from summe stem needs, including im	r 2022) r 2022)
les peol	Medical information for children who require medical care	called "M	III-scale operation o EIS" (From July 2020	)	based on the operation transportation, while ta standardization of elect	al status, such as use dur king into account, e.g., th ronic medical record info	ng emergency e trend toward rmation (sequential)
ple to	Electronic medical records, long-term care data, etc.						
access t	Test result/allergy data	Consider the prid data based on te practical issues,	ority of accessible echnical and etc	Organize system r conduct system in etc.	equirements, nprovements,	Accessible vi etc. (from FY	a "Mynaportal", 2024)
heir own	Notified diagnosis data	Consider the methor confirmation of noti based on technical a	d of enabling the fied diagnosis data nd practical issues, etc.	Consider a specific fram notified diagnosis data, requirements, conduct improvements etc.	nework for providing organize system system	Accessible vi etc. (from FY	a "Mynaportal", 2024)
health an	Imaging data	Consider the and an excha one's own he practical issue	range of imaging data, suc nge framework to achieve alth management based or es, etc.	h as key images, usefulness for n technical and	ganize system quirements, conduct stem improvements, etc.	Accessible vi etc. (from FY	a "Mynaportal", 2024)
d medical inform	Long-term care data	Develop feedback function for database called "CHASE"	Feedback of and of users, etc. (Fi Verify the effect of independe Consider, based on tech range of information es sites, and a framework term care data	Ilysis results of CHA om FY 2021) nee support using "CHASE," etc hnical and practical issue ssential for users and lon that enables access to n	SE, etc. in units s, etc., the g-term care ationwide long-	Further feedback be from start of operat system, etc. (from F Accessibl (sequenti vements, etc.	ised on data ion of next Y2024) e via "Mynaportal," etc. ally from FY2024)
ation	<u>Other data</u>		Consider th technical ar requiremen	e priority of accessind practical issues, on the practical issues, on the practical issues of the practical system	ble data based on organize system improvements, etc.	Accessible vi (sequentially	a "Mynaportal," etc. from FY2025)





(Note 1) While ensuring consistency with system optimization in the national government, incorporated administrative agencies, local public organizations, and quasipublic fields, take steps in advance accordingly to support services that can be brought in ahead of schedule. (Note 2) Optimize the schedule as needed according to the progress of each project.

### Data-based health management initiatives roadmap Important Matters

		Fiscal year of implementation
Standardize data to be included in electronic medical records, etc. to enable data sharing between medical institutions	With the IT Office (Digital Agency), consider the ideal foundation (*) to make electronic medical record data accessible nationwide and reach a conclusion. *Subject, cost, relation with the Online Confirmation System for Health Insurance Qualification and common government infrastructure, operation starting period, the ideal legal system related to protection and utilization of medical data	FY2021/FY2022
Standardize long-term care data to enable data sharing between long- term care institutions, and between long-term care institutions and medical institutions	With the IT Office (Digital Agency), consider the ideal foundation to make long-term care data available nationwide, including data stored in long-term care record support systems, and reach a conclusion.	FY2022/FY2023
Build effective collaboration structure between public health centers and regional medicine	Build a framework to share essential medical information between relevant parties (health centers, medical institutions, etc.) to ensure the provision of home visits and online medical care to those recovering from COVID-19 at home.	From FY2021 Establish collaboration between health centers and medical institutions in all infectious diseases by the end of FY2025

 Mr. Akira Morita (Next Generation Fundamental Policy Research Institute) presentation material at the "Study Group for the Promotion of Genomic Medicine" (hosted by Yasuhisa Shiozaki), entitled "Legal System for the Utilization of Medical Information –What the European Health Data Space (EHDS) concept suggests-" (June 8, 2022)

### Proposal on a system for the utilization of medical data



- In order to eliminate the current restrictions and promote the utilization of medical data, the following legal systems should be enacted.
  - 1. Special laws that promote the utilization of information and incorporate sufficient protection mechanisms that do not contradict the purpose of the Act on the Protection of Personal Information should be enacted.
  - 2. The regulations on the acquisition of information should be replaced by the regulations on the utilization of (access to) information.
  - 3. A distinction should be made between primary use (use for treatment) and secondary use (public health, medical research, development of pharmaceuticals, etc., and health care services), and with regard to secondary use, the regulations should be imposed for each function according to the purpose of use, user, and form of information processing (pseudonymized processed information, anonymously processed information, statistical information, etc.).
  - 4. In acquiring information for primary use, in principle, the generated data should be automatically stored in a database, and access should be broadly permitted to healthcare professionals in charge of patient care.
  - 5. In the case of secondary use, the main objective should be creating value through utilization. The cases in which the data can be used without specific confirmation of the person's intention should be set as broadly as possible. In this case, the scope of permitted use should be expanded to include pseudonymized processed information, which is processed medical data.

# Direction of Medical DX by the Liberal Democratic Party of Japan (LDP) and the Ministry of Health, Labour and Welfare (MHLW)

First "Medical DX Vision 2030" (Liberal Democratic Party of Japan: May 17, 2022) Materials issued by the Ministry of Health, Labour and Welfare Promotion Team (August 8, 2022)

#### **Direction of Medical DX**

#### Background

- In Japan, where the birthrate is declining and the population is aging ahead of the rest of the world, it is very important to promote the digitalization of the medical field and to actively promote the utilization of health and medical information (including long-term care) in order to improve the health of citizens and provide seamless, high quality medical care.
- In addition, as issues that have been recognized in response to the recent COVID-19 pandemic, it is imperative to establish a system that can promptly respond to the next infectious disease crisis by promoting "visualization" of medical care, through speeding up and expanding the scope of data collection from normal times, improving operational efficiency and data sharing by digitization of medical care, and other efforts.

#### Direction

- Efforts will be made to extend healthy life expectancy by enabling citizens to easily access their own health and medical information (including long-term care) and utilizing it to maintain and promote their own health and to promote improvement of the quality of medical care and optimization of treatment through efficient and effective provision of medical care.
- In addition, while utilizing the existing systems that were developed during the recent COVID-19 pandemic, a mechanism will be established as the overall system related to medical information to enable prompt and reliable acquisition of necessary information in the next infectious disease crisis.
- Furthermore, it is expected that the acceleration of the development of new drugs and treatments through the appropriate use of medical information will lead to the promotion of industries in related fields, and that the improvement of work efficiency, etc. through the digitization of medical care will lead to more effective use of human resources, including SE personnel.

#### Skeleton

- 1. "National medical information platform"
- 2. Standardization of electronic medical record information, consideration of standardized electronic medical records
- 3. "Medical fee revision DX

#### First "Medical DX Vision 2030" Material issued by the Ministry of Health, Labour and Welfare Promotion Team (August 8, 2022)

# Standardization of electronic medical record information and exchange methods, consideration of standardized electronic medical records

#### Standardization of electronic medical record information and exchange methods

(Basic Concept)

In order to promote smooth data exchange and sharing among medical institutions, HL7 FHIR will be used as a standard for exchange of information, standard data items to be exchanged and electronic specifications will be defined, and these specifications will be standardized as a national standard.

(Specific Efforts)

- In March 2022, the Ministry of Health, Labour and Welfare (MHLW) adopted three documents and six pieces of information\* as MHLW standards. In the future, we will expand the scope of standardization while taking into consideration its usefulness in the medical field. In FY2022, we will work on standardization of dialysis information and some notifications of infectious disease outbreaks as part of a project funded by Grants-in-Aid for Scientific Research.
  - (\*) 3 documents: patient referral document, discharge summary, medical checkup result report
    - 6 information: name of injury or disease, allergy information, infectious disease information, drug contraindication information, test information (useful tests in emergency, tests related to lifestyle-related diseases), prescription information

#### **Consideration of standardized electronic medical records**

At the same time, we are considering the development of a cloud-based electronic medical records (standard electronic medical records) for small medical institutions that conforms to this standard. In FY2022, we plan to implement the FY2023 research and study project, while conducting interviews with related parties.

### Abandoned standardization of the entire electronic medical record?

### Current status of introduction of electronic medical records (general hospitals <Note>) and MHLW's proposal for standardization

"The Static Surveys of Medical Institutions" conducted by the Ministry of Health, Labour and Welfare, FY 2020

### HL7 FHIR as replacement standard <MHLW's proposal>

	Number	r of beds (Share of beds . %)	Penetration rate of electronic medical records (%)
2.	400 beds	384,067 (30.1%)	91.7
	200- 300 beds	363,530 (28.5%)	75.7
ti.	200 or more beds	747,597 (58.6%)	84.3

### Policy of standardizing only for "199 beds or less" + "clinics" <MHLW's proposal>

199 bed or less	528,925 (41.4%)	53.5
Total	1 276 521 (100%)	71.2
Total	1,270,521 (100%)	/1.0

<Note> Excluding psychiatric hospitals.

It is difficult to realize data-based health management initiatives through the standardization limited to "199 beds or less" plus "clinics."



### Estonia: "eHealth Services"



# Finland: "Kanta"

# National Kanta Services

Kanta is an entity of digital services, which brings benefits for citizens, pharmacies and the social welfare and healthcare sector

The Kanta services are implemented and adopted in stages



## Denmark: "Sundhed.dk"



Source: Danish Ministry of Health and Prevention / sundhed.dk

Bertelsmann Stiftung

# UK: "NHS Digital"



Using information and technology to transform health and care, NHS Digital

Liberal Democratic Party's Special Committee on Data Health Promotion (April 2018), processed from EY presentation material, "Health Data Reform (Digitization)" in the UK.

# EU: European Health Data Space(EHDS)

### 3. Key points of EHDS 3. EHDSのポイント





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Mr. Akira Morita (Next Generation Fundamental Policy Research Institute) presentation material entitled "Legal System for the Utilization of Medical Information

-What the European Health Data Space (EHDS) concept suggests-" (June 8, 2022)

Importance of information sharing between the public and private sectors Establishment of an organization to implement the project (Genome Medical Center Japan (tentative name))

An organization to implement the project should be newly established and whole-genome analysis etc. should be steadily promoted, with reference to the concept of project promotion in Genomics England. Genomics England takes the form of a state-funded company and widely invites participation from academia and industry. This enables flexible management decisions based on the latest knowledge. Based on this, we should make Japan's organization to implement the project <u>a transparent and open organization</u> in which academia and the business community participate widely in terms of ideas, human resources, investment, and financing etc., rather than a closed organization consisting only of national research institutes and national research and development corporations, and we should make it the one that can also <u>function</u> as a <u>business model integrating the public and</u> private sectors. In order to promote the establishment and operation of such an organization to implement the project, the public and private sectors need to work together, and measures that include the <u>utilization of</u> private funds in addition to sufficient public budgets should be considered.

June 1, 2021: Liberal Democratic Party of Japan "Recommendations by the Special Mission Committee on Data Health Promotion" Data:https://www.jimin.jp/news/policy/201657.html

### **Global Leaders Group on Antimicrobial Resistance**

**Established in November 2020** 

#### Co-Chairs 2 persons) O Sheikh Hasina, Prime Minister, PEOPLE'S REPUBLIC OF BANGLADESH Overview O Mia Amor Mottley, Prime Minister, Minister of Finance, Economic Affairs and Investment, BARBADOS Background Committee members (18 persons) After the UN High-Level Meeting on AMR held in September Dr Hamad Abdullaziz Al-Batshan Deputy Minister for Animal Resources, Ministry of Environment, Water, and Agriculture, SAUDI 2016, the UN Secretary-General convened the "UN Inter-ARABIA Agency Coordinating Committee on AMR." Dr. Hasan Mohamed Abbas Al-Temimi It was created in response to the Committee's Minister of Health and Environment, IRAQ Prof António Correia de Campos recommendation in its April 2019 report to the UN Secretary-Professor Emeritus of Health Economics, National School of Public Health, New University of Lisbon, PORTUGAL General to establish a One Health Global Leaders Group on Prof C.O. Onyebuchi Chukwu AMR. Former Minister of Health, Professor of Orthopaedic Surgery, Alex Ekwueme Federal University The World Health Organization (WHO), the Food and Ndufu Alike, NIGERIA Dr Guilherme Antônio da Costa Júnior Agriculture Organization (FAO), and the Office International Chairperson of the Codex Alimentarius Commission, BRAZIL des Epizooties (OIE) serve as the secretariat. Prof Dame Sally Davies Former Chief Medical Officer, UK Special Envoy on Antimicrobial Resistance, UNITED KINGDOM Prof Sir Jeremy James Farrar Roles Director, Wellcome Trust, UNITED KINGDOM Dr Julie Gerberding The roles of this group are as follows. Chief Patient Officer and Executive Vice President, Merck & Co., Inc., UNITED STATES OF To maintain political momentum and citizens' support for AMERICA Ms Grace Fu AMR within the international community. Minister for Sustainability and the Environment, SINGAPORE To support and raise awareness of the activities of WHO, Ms Lena Hallengren Minister of Health and Social Affairs, SWEDEN FAO, and OIE. Sussan Ley To manage the progress of the response from the Minister for Agriculture, Water and the Environment, Australia Aminata Mbengue Ndiaye international community on AMR, etc. Former Minister of Livestock and Animal Production, Former Minister of Fishery and Maritime Economy, Senegal •Ms Sunita Narain Members Director-General, Centre for Science and Environment, INDIA It is co-chaired by Prime Minister Sheikh Hasina of Anna Yuryevna Popova Bangladesh and Prime Minister Mottley of Barbados and Head of the Federal Service for Supervision of Consumer Rights Protection and Human Welfare, Russia composed of current and former heads of state, ministers, and Mr Yasuhisa Shiozaki senior government officials. Yasuhisa Shiozaki, a member of Former Minister of Health, Labour and Welfare, Member of the House of Representatives, JAPAN Ms Dechen Wangmo the House of Representatives, was elected from Japan. Minister of Health, BHUTAN Dr Jeffrey Scott Weese Professor at the University of Guelph, Director of the Centre for Public Health and Zoonoses, **Future Activities** CANADA The meeting is scheduled to be held four times a year. Prof Lothar H. Wieler President of the Robert Koch Institute, GERMANY