Data as Shared Goods:
How can we contribute to shared values

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share
the
future

Google COVID-19 Community Mobility Reports

Île-de-France

Retail & recreation

-91% compared to baseline

Grocery & pharmacy

-69% compared to baseline

Parks

-89% compared to baseline

Transit stations

-87% compared to baseline

Workplace

-63% compared to baseline

Residential

+20% compared to baseline

Google COVID-19 Community Mobility Reports

Tokyo

Retail & recreation

-63% compared to baseline

+80%
+40%
Baseline
-40%
-80%
Sun Feb 16   Sun Mar 8   Sun Mar 29

Grocery & pharmacy

-32% compared to baseline

+80%
+40%
Baseline
-40%
-80%
Sun Feb 16   Sun Mar 8   Sun Mar 29

Parks

-66% compared to baseline

+80%
+40%
Baseline
-40%
-80%
Sun Feb 16   Sun Mar 8   Sun Mar 29

Transit stations

-5~~~ed~~ to baseline

> School Closure

+40%
Baseline
-40%
-80%
Sun Feb 16   Sun Mar 8   Sun Mar 29

Workplace

-27% compared to baseline

+80%
+40%
Baseline
-40%
-80%
Sun Feb 16   Sun Mar 8   Sun Mar 29

Residential

+14% compared to baseline

+80%
+40%
Baseline
-40%
-80%
Sun Feb 16   Sun Mar 8   Sun Mar 29

Project summary

 identical with WhatsApp
83 million users in Japan

This project uses the social networking service "LINE" to efficiently screen and follow up high-risk groups of new coronaviruses (COVID-19) and patients with potential coronaviruses, as well as to support patients with mild symptoms.

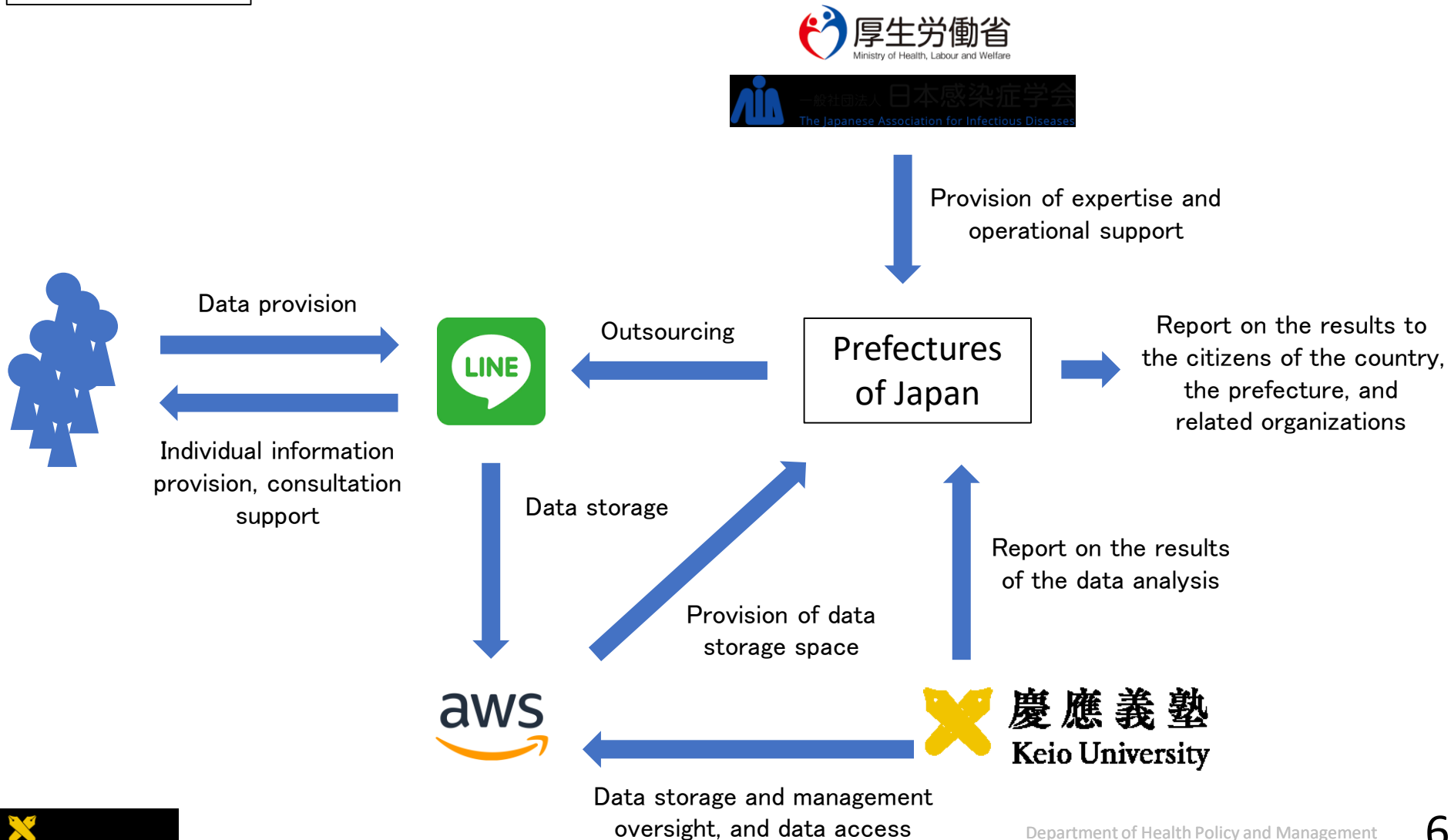The system specifically implements the following three points:

- Support for personalized self-care and prevention of secondary infections

- Real-time follow-up

- Population-level feedback and rapid identification of actions
  (For more details, see the supplementary material)

COvid-19: Operation for Personalized Empowerment to Render smart prevention And care seeking [COOPERA]
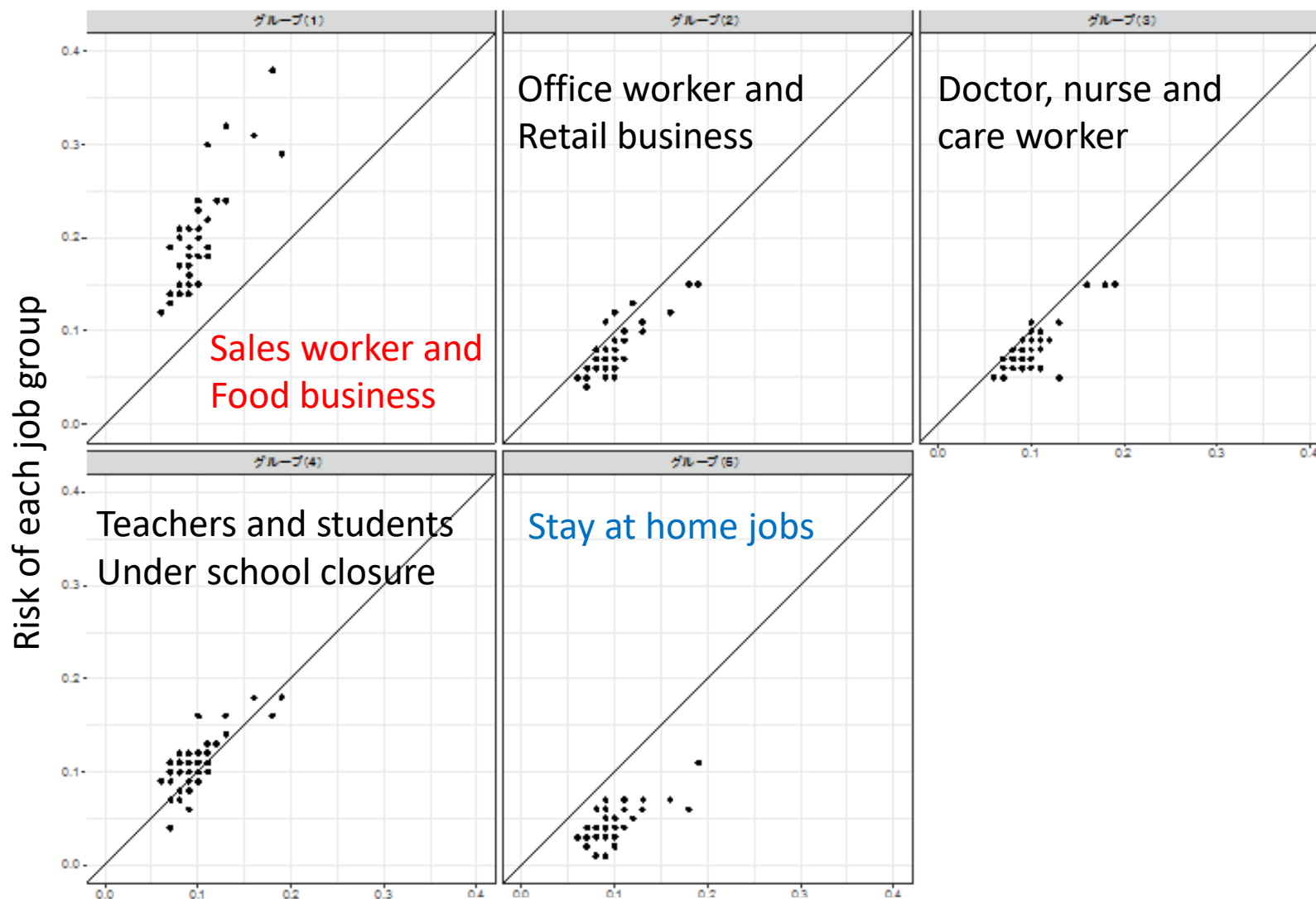
Project design

厚生労働省
Ministry of Health, Labour and Welfare

一般社団法人日本感染症学会
The Japanese Association for Infectious Diseases

Provision of expertise and operational support

Data provision

Individual information provision, consultation support

LINE

Outsourcing

Prefectures of Japan

Report on the results to the citizens of the country, the prefecture, and related organizations

Data storage

Provision of data storage space

Report on the results of the data analysis

aws

慶應義塾
Keio University

Data storage and management oversight, and data access
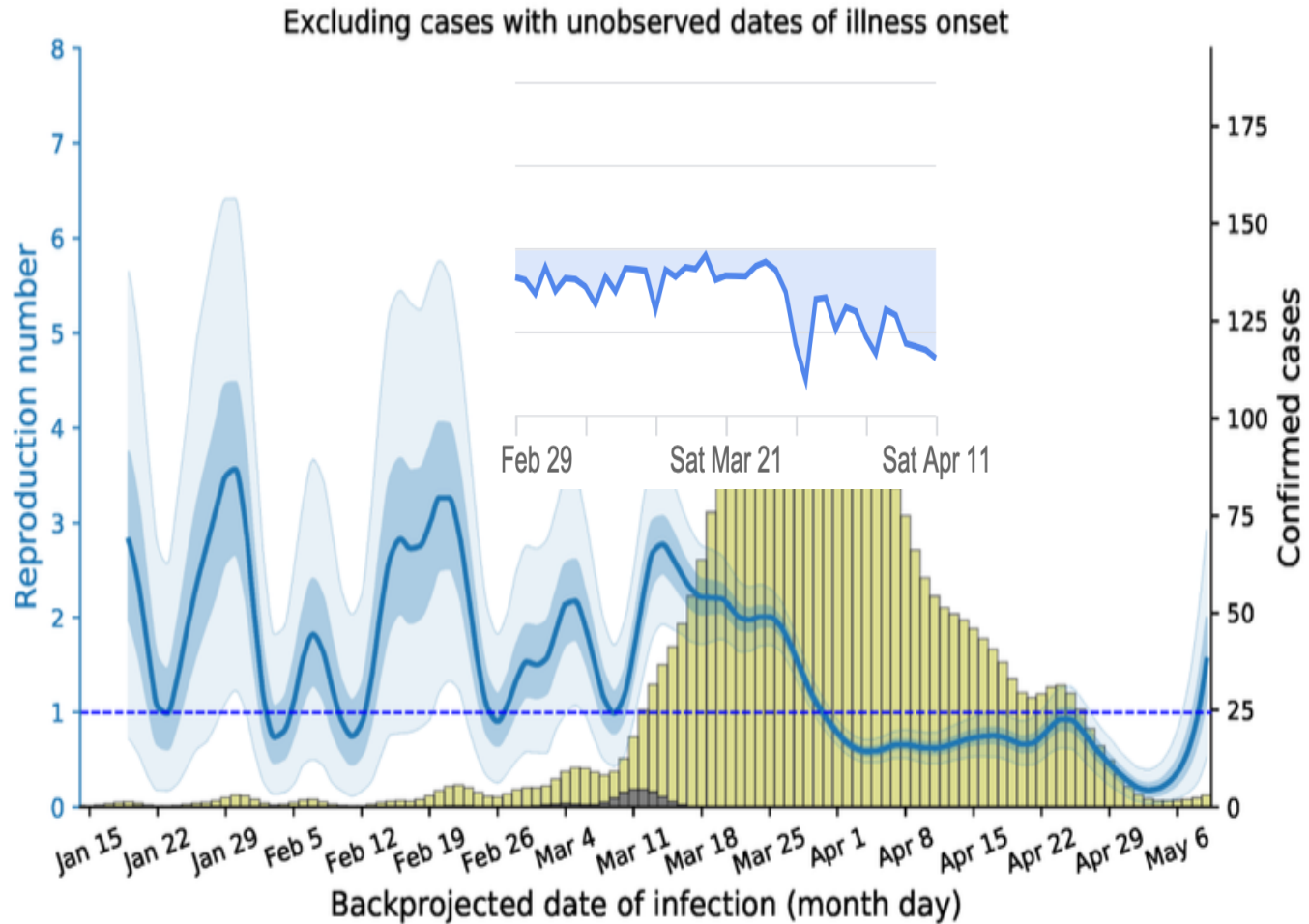
Questionnaire summary

There are two main questions on LINE:

- Basic questions: whether the user have a current fever (>37.5°C) or a strong feeling of weariness (fatigue) or shortness of breath (difficulty breathing), and their durations, those in the past month, gender, age, medical history, and recent overseas travel history, etc.

- Detailed questions: body temperature, symptoms, medications, risk-avoide behavior, history of medical consultations, diagnostic results, stress assessment with K6, information on contact with infected persons in the vicinity, etc.

  - According to the results of the responses, we recommend that the user should consult with the local government's counselors, based on the guidelines set by the Ministry of Health, Labour and Welfare (MHLW), and provide information such as Q&A on COVID-19 from the MHLW.

  - Follow up with detailed questions sent daily to those with symptoms and periodically to those without

Screenshot of getting consent to the survey

Screenshot of the survey response scene

Results of emergent survey for 25,000,000 people

Risk of each job group (y-axis)

Region Risk (Rate of Fever in general publics) (x-axis)

グループ(1) — Sales worker and Food business

グループ(2) — Office worker and Retail business

グループ(3) — Doctor, nurse and care worker

グループ(4) — Teachers and students Under school closure

グループ(5) — Stay at home jobs

Rt compare with google mobility report

新型コロナウイルス感染症の拡大を防止するため行っていただきたい取組

（チェックリスト）＜パチンコ店＞

事業活動を行うにあたり、各業界団体が策定するガイドライン及び以下の取組の遵守をお願いします。

１．ソーシャルディスタンスの確保（２メートル以上（最低１メートル））
- □混雑時における入店制限、及び開店前の入店者の列の間隔確保又は整理券配付等
- □施設への入店前、施設利用中において、周囲の人とのソーシャルディスタンスを保つよう表示・周知
- □アクリル板等により各席を遮蔽する、又は隣合う席を撤去（非通電）する等配席の工夫
- □店内音量を必要最小限にし、大声での会話の必要性のない環境を確保
- □休憩スペースや喫煙ブース利用時に密集・密接しないよう周知、又は休憩スペースや喫煙ブースの利用中止
- □景品カウンター等対面する場所にビニールカーテン等を設置
- □各台計数システム（パーソナルシステム）の導入

２．従業員及び来客等の保健衛生対策の徹底
- □従業員及び来客等のマスク着用
- □従業員及び来客等の手洗い・手指消毒
- □消毒液の設置、ごみ廃棄時の衛生管理、従業員のユニフォーム等のこまめな洗濯
- □遊技台での飲食禁止の周知
- □従業員の体調管理、来客等の入店時体調チェック

３．共用物の衛生管理・換気の徹底
- □パチンコ玉やメダル利用後に必ず手指衛生を徹底するよう周知
- □客席、テーブル、利用設備・機材等についての消毒
- □換気設備による換気、又は窓の開閉による毎時２回以上の換気とともに騒音等に配慮
- □トイレにおけるハンドドライヤー等の使用中止

４．景品陳列の変更
- □カウンター前にある景品の陳列を変更し、遊技客が景品に手を触れないように工夫

５．感染が発生した際の利用者への情報提供
- □ＳＮＳ等の技術を活用した、施設利用者に対する感染発生状況等の情報提供

６．県外からの来店の抑止
- □店頭におけるチラシの掲示等による、県外からの来店抑止の注意喚起

新型コロナウイルス感染症の拡大を防止するため行っていただきたい取組

（チェックリスト）＜飲食店等（飲食店、和・洋菓子店等）＞

事業活動を行うにあたり、各業界団体が策定するガイドライン及び以下の取組の遵守をお願いします。

１．ソーシャルディスタンスの確保（２メートル以上（最低１メートル））
- □アクリル板等により各席を遮蔽する、又は隣の人と一つ以上空け互い違いに座る、対面せず片側に座る等
- □定員の半分程度の人数で部屋を提供
- □衛生的な取扱いに注意してテイクアウト等に積極的に対応
- □ソーシャルディスタンスを確保した客席の配置、利用設備・機材の設置
- □入店前、入店中において、周囲の人とのソーシャルディスタンスを保つよう表示・周知
- □カウンター内とカウンターをアクリル板等により遮蔽する、又は対面の距離を確保する
- □レジ等対面する場所にビニールカーテン等を設置
- □混雑時における入店制限（整理券配布等）

２．従業員及び来客等の保健衛生対策の徹底
- □回し飲み禁止について注意喚起
- □従業員及び来客等のマスク等着用
- □従業員及び来客等の手洗い・手指消毒
- □消毒液の設置、ごみ廃棄時の衛生管理、従業員のユニフォーム等のこまめな洗濯
- □従業員の体調管理、来客等の入店時体調チェック

３．共用物の衛生管理・換気の徹底
- □大皿等での提供は避ける
- □テーブルへの共用調味料・冷水ポット等の設置を避ける、もしくは定期的に消毒
- □トング等共用物の定期消毒または交換
- □客席、テーブル、利用設備・機材等についての消毒
- □換気設備による換気、又は窓の開閉による毎時２回以上の換気
- □トイレにおけるハンドドライヤー等の使用中止
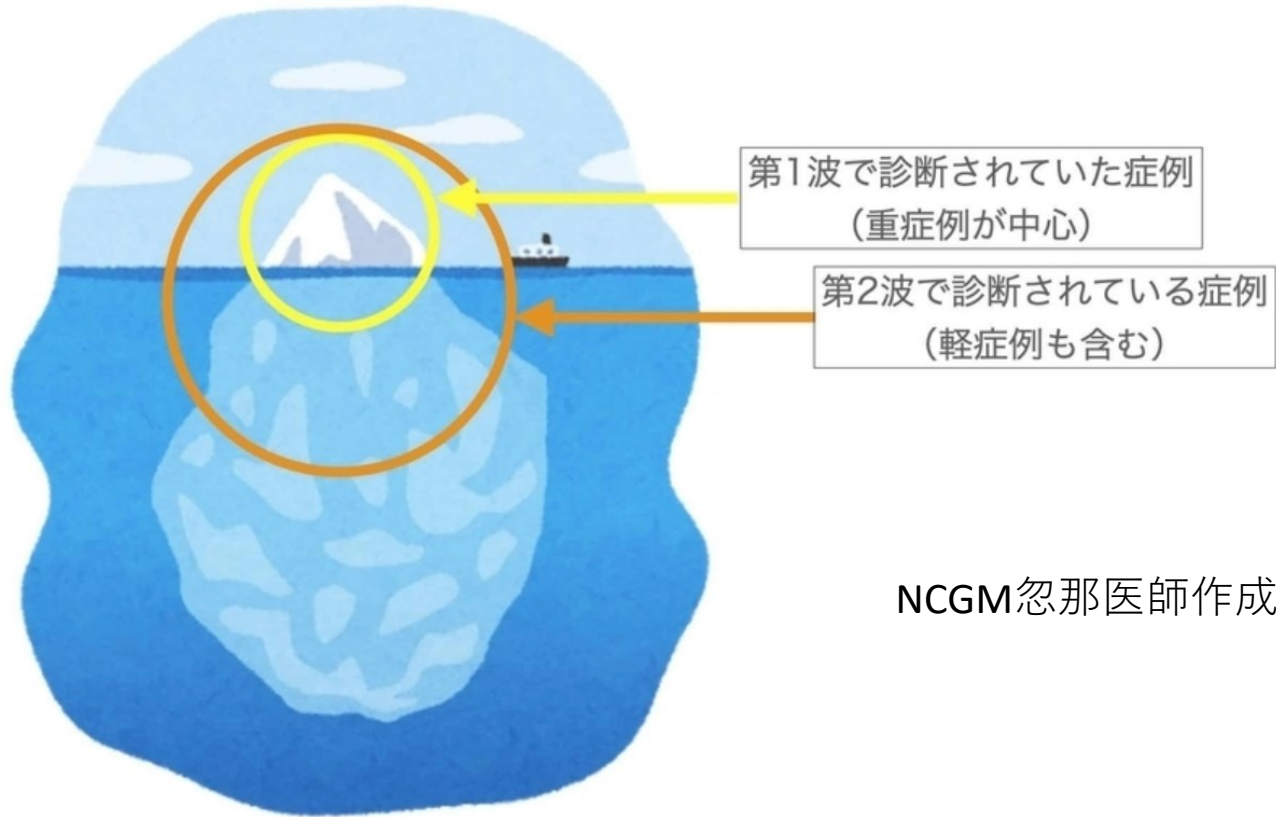
４．会計時等の非接触
- □電子マネー等非接触型決済の導入、もしくは支払時のコイントレイの使用

５．感染が発生した際の利用者への情報提供
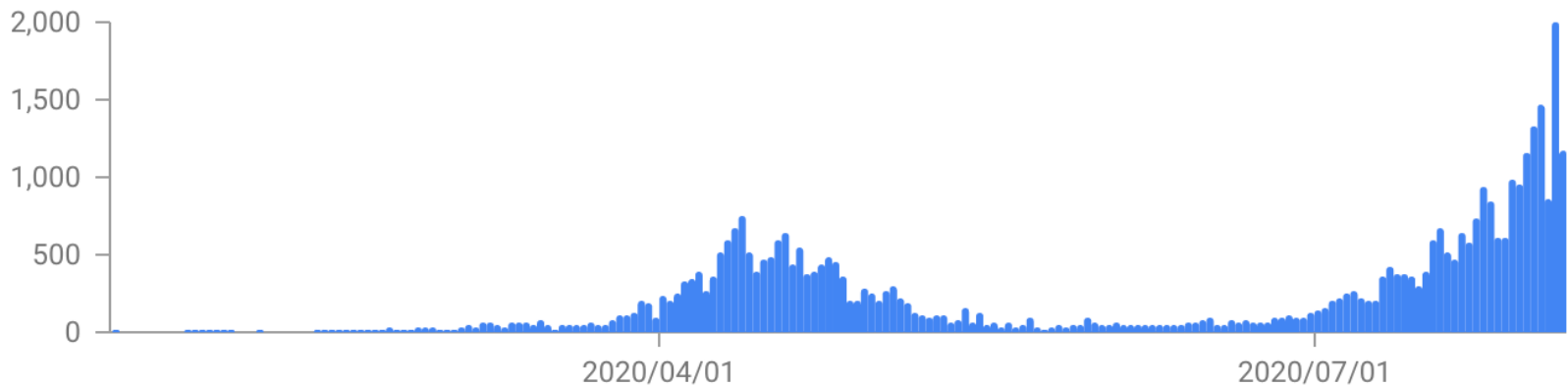- □ＳＮＳ等の技術を活用した、施設利用者に対する感染発生状況等の情報提供

６．業界ガイドラインの遵守
- □業界ガイドラインの遵守

Second wave has come since July

第1波で診断されていた症例
（重症例が中心）

第2波で診断されている症例
（軽症例も含む）

NCGM忽那医師作成

2,000
1,500
1,000
500
0

2020/04/01 2020/07/01

Percentage of implementation of infection prevention measures at workplaces by occupation (%) in the fifth national survey

***Responses from people aged 15 or older and 110 or younger were used.**

Occupations	Hand-washing	Wearing a mask	Avoiding three Cs	Cleaning and disinfection of facilities	Health management of facility users and employees	Restrictions on the number of employees (telework, etc)	Nothing in particular
Office worker	75.1+	89.9+	74.6+	43.5+	52.9+	42.9+	2.5+
Outside salesperson	73.9+	91.2+	70.1+	33.2+	46.8+	30.0+	3.5+
Manufacturing and production	68.4+	84.0+	62.8+	31.4+	49.9+	11.8+	6.3+
Food and drink without entertainment	90.6+	94.7+	64.8+	73.8+	68.7+	2.7	1.0+
Food and drink with entertainment	84.0+	86.3+	57.2+	71.0+	62.6+	3.8+	2.9+
Education	87.4+	96.5+	79.2+	76.6+	63.1+	10.7	0.7+
Medical care	93.4+	98.7+	77.4+	81.1+	78.0+	2.9−	0.4+
Nursing and care givers	94.5+	97.7+	69.4+	79.1+	86.4+	2.4−	0.5+
Taxi driver	70.1+	94.2+	52.0+	45.9+	43.0+	3.3−	3.0+
Transportation	66.5+	89.0+	57.0+	31.4+	43.8+	3.6	5.6+
Retailing	80.6+	97.0+	62.7+	59.1+	64.2+	3.4	1.2+
Lodging and leisure	81.7+	94.5+	70.1+	79.1+	72.0+	10.7	1.5+
Childcare-giver	93.5+	95.9+	60.8+	85.9+	77.7+	1.9−	0.5+
Beauty and esthetics	87.2+	97.0+	69.3+	85.5+	66.2+	4.1	0.8+
Government officials	78.8+	94.8+	79.7+	53.7+	51.9+	17.7+	1.5+
Other paid work	68.7+	80.2+	60.6+	38.9+	39.2+	8.4−	7.5+

+/- The percentage of those with fever (Fever>37.5℃ for >4days) was significantly higher/lower in the group that responded that their workplace measures to prevent infection were "not performed" than in the group that responded "performed" (Fisher's exact test: p < 0.05). (the opposite for 'Nothing in particular')
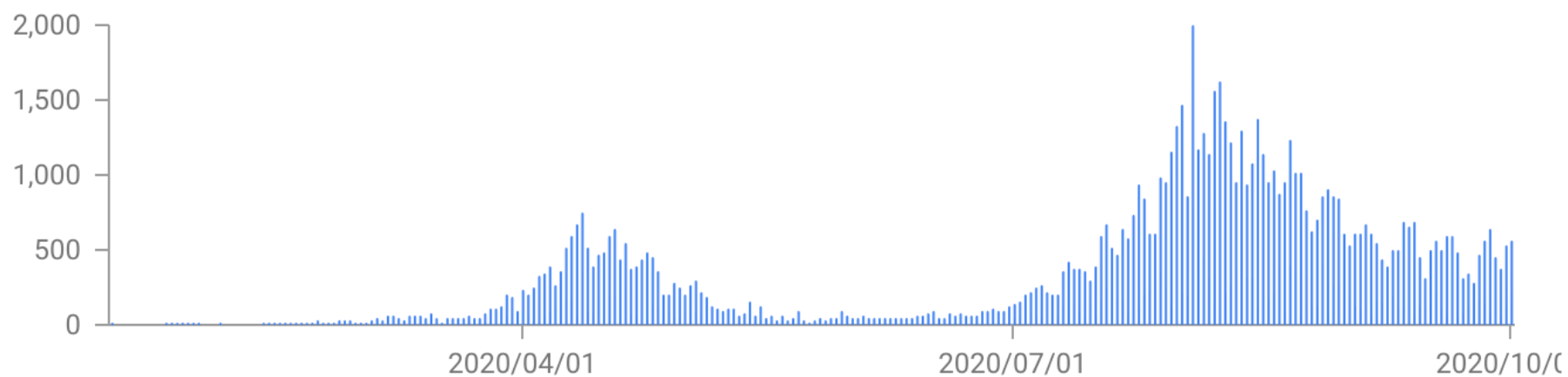
感染者数の推移

日本

新規 合計

「各日」は前日以降に新たに報告された感染者数を表します

General Data Protection Regulation (2018.5-)

The **EU General Data Protection Regulation (GDPR)** is the most important change in data privacy regulation in 20 years - we're here to make sure you're prepared.

After four years of preparation and debate the GDPR was **finally approved** by the EU Parliament on **14 April 2016**. Enforcement date: **25 May 2018** - at which time those organizations in non-compliance may face heavy fines.

Data Portability
GDPR introduces data portability - the right for a data subject to receive the personal data concerning them, which they have previously provided in a '*commonly use and machine readable format*' and have the right to transmit that data to another controller.

privacy. The key articles of the GDPR, as well as information on its business impact, can be found

Background of Transition to
VALUE CO-CREATION SOCIETY

It will be data, not oil, that fuels Society 5.0 and Data-Driven Society.
There are three possible types of social system with both its pros and cons: USA, EU and China.

USA

Rational business activities trigger innovation after innovation while GAFA prevails

⚠️

The danger of data hegemony looms ahead

EU

GDPR and the right to data portability allow citizens to control their personal data, even after providing to govts or companies

⚠️

Too much emphasis on data as property goods results in disproportionately strong individual rights

CHINA

Social Credit System 'Credit China' shares and spreads the value as it is

⚠️

The top-down and uniform management and a surveillance society

The era of human co-being: *Upgrade Our Society*

The principles of Japanese
VALUE CO-CREATION SOCIETY

Maneuvering the strengths of American, EU, and Chinese models, CO-CREATION SOCIETY underlies the basis on which diversity and plurality of values can be accomplished with everyone.

Economy-driven innovation	**Data as an extension of property goods** (GDPR and Data Portability)	**Top-down and uniform management of Social Credit System**
↓	↓	↓
Value-driven innovation	**Data as common goods through active choice** (Going beyond GDPR)	**Bottom-up decision, diversity, and pluralism in value sharing and social credit system**

Speeches and Statements by the Prime Minister

Toward a New Era of "Hope-Driven Economy": the Prime Minister's Keynote Speeach at the World Economic Forum Annual Meeting

January 23, 2019

The regime we must build is one for D.F.F.T., Data Free Flow with Trust -- non-personal data, needless to say. It is not the big, capital intensive industries, but rather we individuals who will benefit from both the fourth industrial revolution and what we call "Society 5.0," which this fourth industrial revolution will bring about.
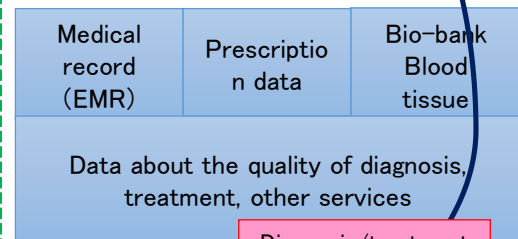
In Society 5.0, it is no longer capital but data that connects and drives everything, helping to fill the gap between the rich and the less privileged. Services of medicine and education, from elementary to tertiary, will reach small villages in the Sub Saharan region. Girls who have given up going to school will see, beyond their own village, a wider horizon where the sky is the limit.
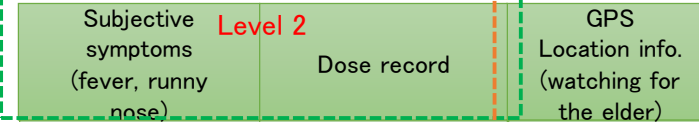
Person-centered open Platform

Create

Link

Utilize

Sensitivity Level: 0: High – 4: Low

Level 1
| Medical record (EMR) | Prescription data | Bio-bank Blood tissue |
| Data about the quality of diagnosis, treatment, other services | | |

Diagnosis/treatment Support modules

Level 2
Subjective symptoms (fever, runny nose)	Dose record	GPS Location info. (watching for the elder)
Diet, calorie info.	sleep	Exercise, pedometer
Health-related info. delivery pill search	Side-effect report delivery function	Other tailor-made info. delivery
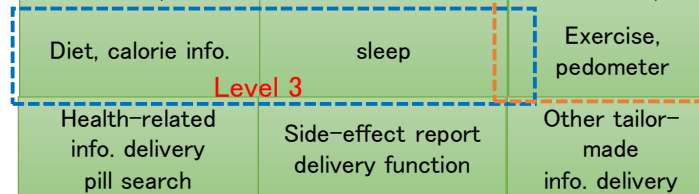
Level 3

Smart phone applications (common OS)

Weather, temperature, humidity, pressure

Pollen, Yellow sand

Level 4

Wearable, sensing, environmental sensing technology

Data on elderly care, rehab., medical check-up

Regional healthcare alliance support func.

Decision support, Second opinion info., Pain control support

E-medicine notebook (w/ side-effect info.) reminder functions

Healthy behavior support application

Data transaction among companies

Individual

Consent to participate

Basic info. registration
Sex, date of birth
Address, phone No.   **Level 0**
Income, household info.   **Level 1**

Key for different disclosure levels

Linkage Platform

Use of registered data
Setting disclosure level
To whom to show

Individual

Extracting specific DB (usually anonymous)

Building DBs for different purposes (analysis on disease mechanism, board of certification checking, new drug development, safety management, etc.)

API

For various stakeholders

Registration procedure

They can check a person's sensitive data according to disclosure levels if s/he gives a permission key to the professionals.

Healthcare providers (doctors, dentists, Pharmacist etc.)

Cost-effectiveness analysis

Regional healthcare alliance

Use of data
– Business use
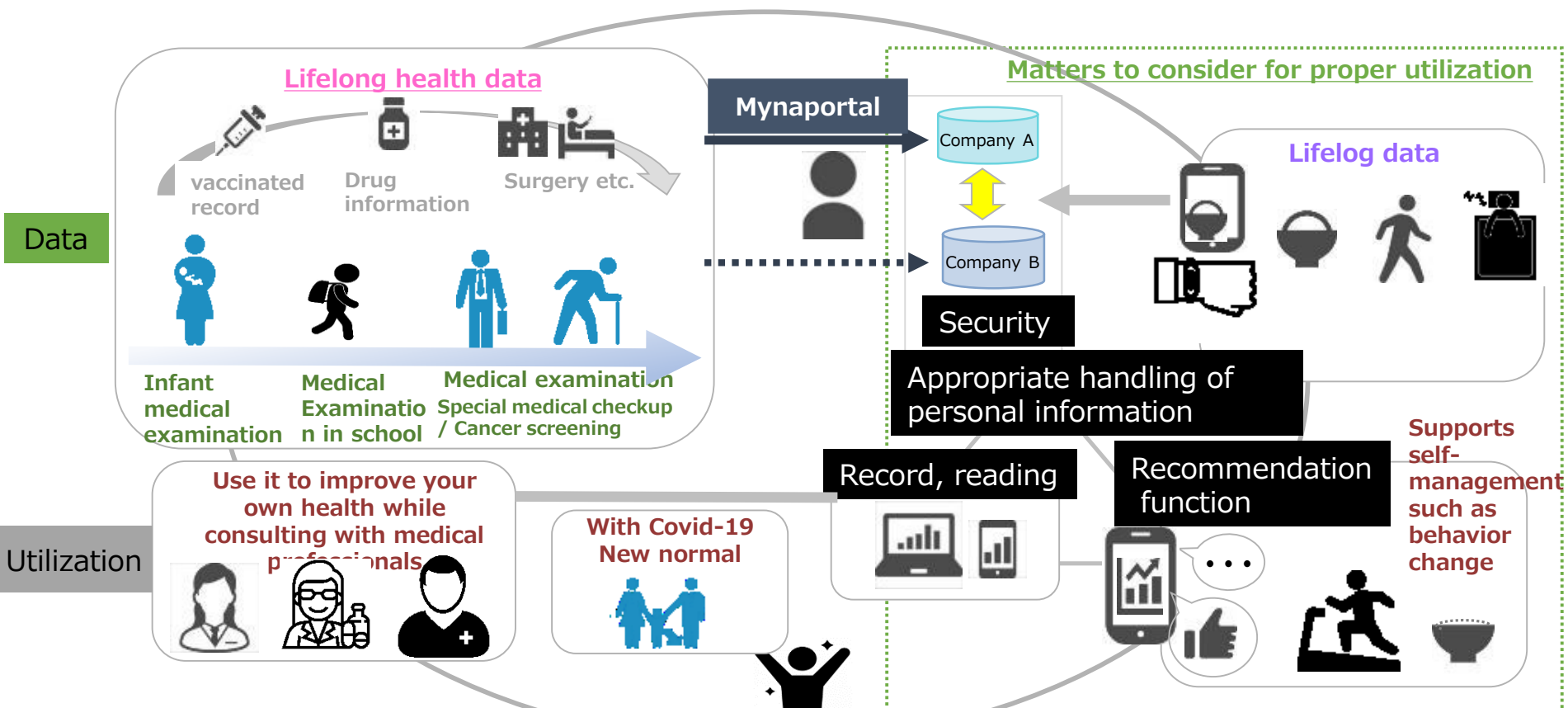– Public health
– Research   **Corporaions, government, academia**

The Japanese Government's Commitment to PHRs

- Through Mynaportal, Japanese government-run online services, personal health data from birth to school, workplace... will be utilized by individual for prevention, health promotion, etc.

- Japanese government is considering environmental improvements, including rules making which are necessary for private businesses to promote proper and effective utilization of PHRs.

Lifelong health data

vaccinated record

Drug information

Surgery etc.

Mynaportal

Company A

Company B

Matters to consider for proper utilization

Lifelog data

Data

Infant medical examination

Medical Examination in school

Medical examination
Special medical checkup / Cancer screening

Security

Appropriate handling of personal information

Supports self-management such as behavior change

Utilization

Use it to improve your own health while consulting with medical professionals

With Covid-19 New normal

Record, reading

Recommendation function

Utilize health data for health・prevention・prevention of aggravation

Department of Health Policy and Management

Person-centered Care from physicians' perspective

Based on RCT-proven evidence, real-world observational data are utilized with each patient's characteristics (contraindication, comorbidity, race difference) as well as regional environment (human and physical resources) . These results establish scientific FEEDBACK system that recommends healthcare process in a individual given situation.

Hospital A
Breast Surgery

2. Confirming recommended treatment
Sending alert on non-applicable treatment
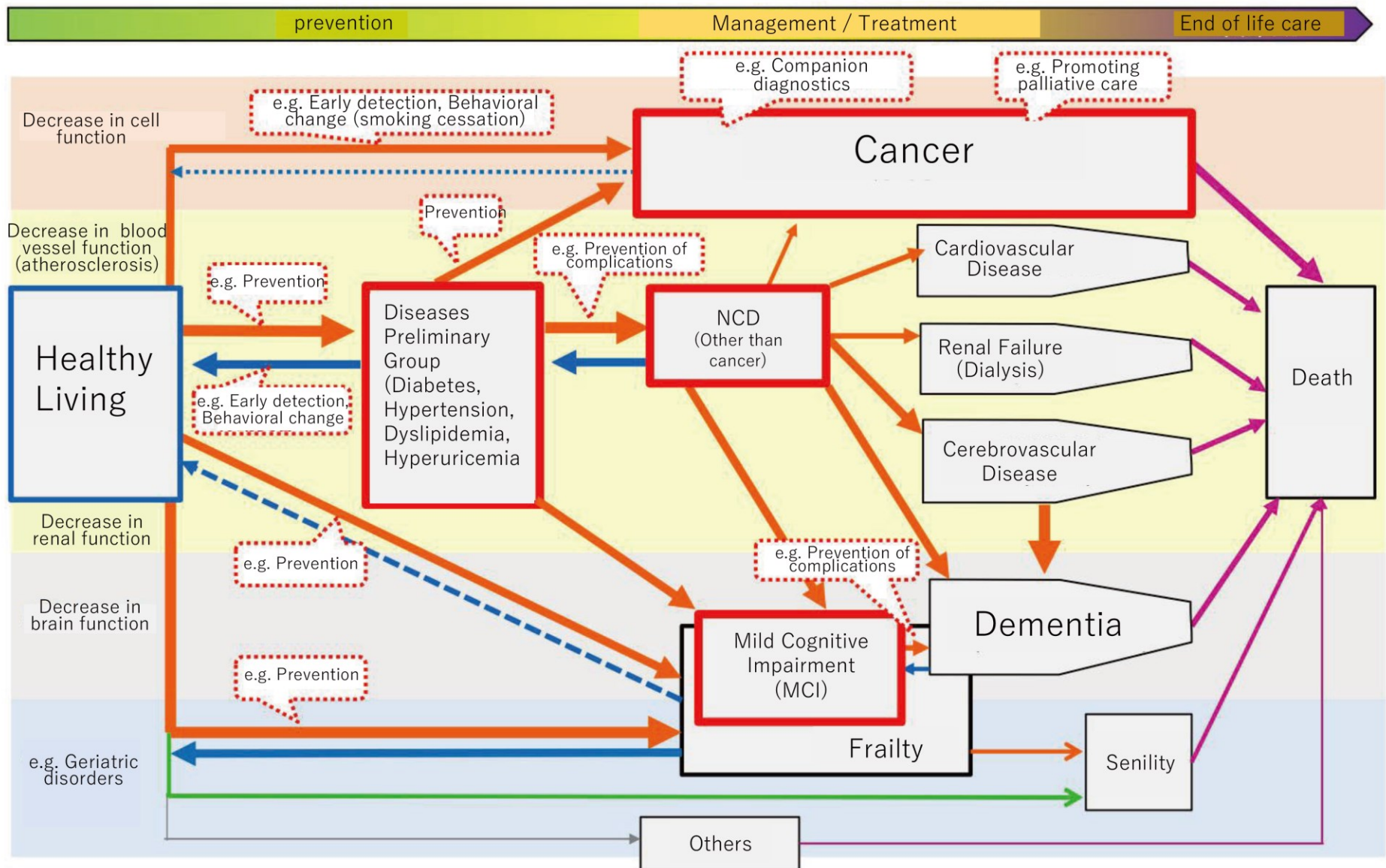Giving advice on effective post-op. treatment

With genotype and phenotype data added on, the BEST treatment option is achieved for and only for *the* patient in front of you
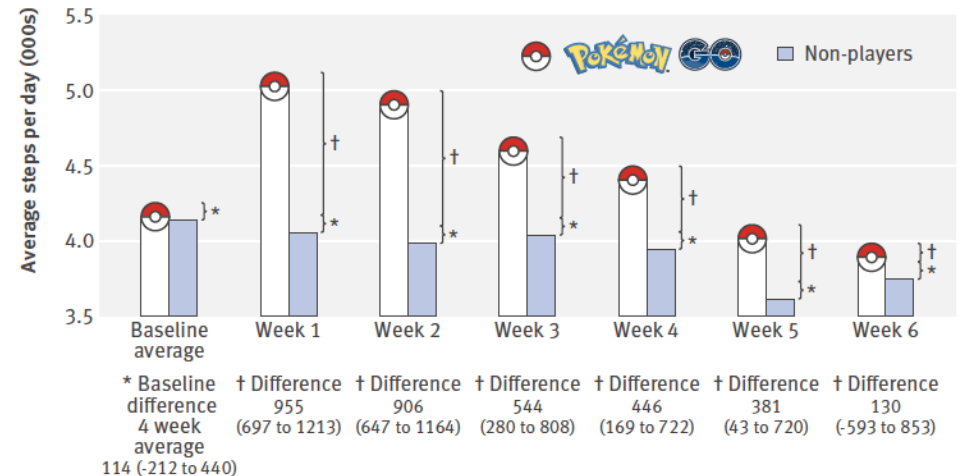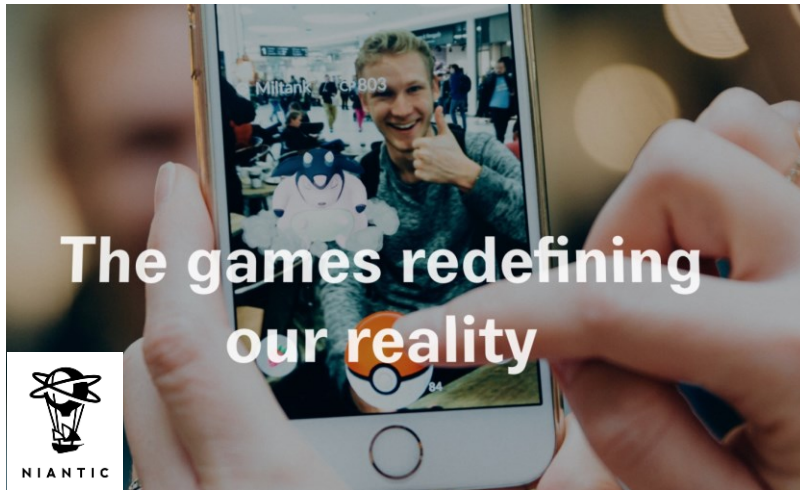
1. Data entry
at Treatment

Central System

share
the
future

Course of Disease

prevention | Management / Treatment | End of life care

Decrease in cell function
Decrease in blood vessel function (atherosclerosis)
Decrease in renal function
Decrease in brain function
e.g. Geriatric disorders

e.g. Companion diagnostics
e.g. Promoting palliative care
e.g. Early detection, Behavioral change (smoking cessation)

Cancer

Healthy Living

e.g. Prevention
Prevention
e.g. Prevention of complications

Diseases Preliminary Group (Diabetes, Hypertension, Dyslipidemia, Hyperuricemia)

NCD (Other than cancer)

Cardiovascular Disease
Renal Failure (Dialysis)
Cerebrovascular Disease

Death

e.g. Early detection, Behavioral change

e.g. Prevention
e.g. Prevention of complications

Mild Cognitive Impairment (MCI)

Dementia

e.g. Prevention

Frailty

Senility

Others

NCD=Non-Communicable Diseases

Life as value with Pokémon and Niantic

Miltank

The games redefining our reality

NIANTIC

Average steps per day (000s)

Pokémon GO   ☐ Non-players

Baseline average   Week 1   Week 2   Week 3   Week 4   Week 5   Week 6

* Baseline difference 4 week average 114 (-212 to 440)

† Difference 955 (697 to 1213)

† Difference 906 (647 to 1164)

† Difference 544 (280 to 808)

† Difference 446 (169 to 722)

† Difference 381 (43 to 720)

† Difference 130 (-593 to 853)

1 billion users in world!

多様な健康に応える

多くの人々にとって「健康」は、人生
を幸せに生きるための手段。生きる
意味が多様化・多元化している現
代において、その人にとって必要な
「健康」もそれぞれ異なる。

だからこそ、その人の生き方、健康、
疾病の状況に合わせた最適な保険
医療を受ける仕組みが必要。

POKÉMON
Sleep
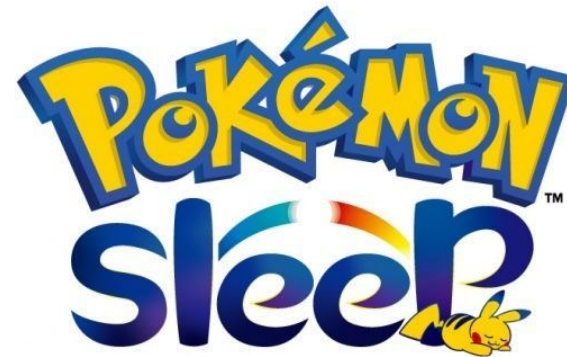
Sleeping got to be a fun!

Re-invent our Lives
Not only disease management, but also wellbeing empowerment

Wellbeing Platform
人々のwellbeingを支えるあらゆる取り組みを対象に

| Healthy living | Prevention | Diagnosis | Treatment | Home care |

| Past	Present	Next generation
Hospital-enclosed	Community-based	**Person-centered (Anytime, anywhere through global alliance)**
Communicable disease	Non communicable disease	**Re-invent our lives (Including pre-diagnosis phase and healthy life**
)Younger population	Older population	**Leaving no one behind (Vulnerable and marginalized populations)**

The Commons Project

Independent Nonprofit Public Trust
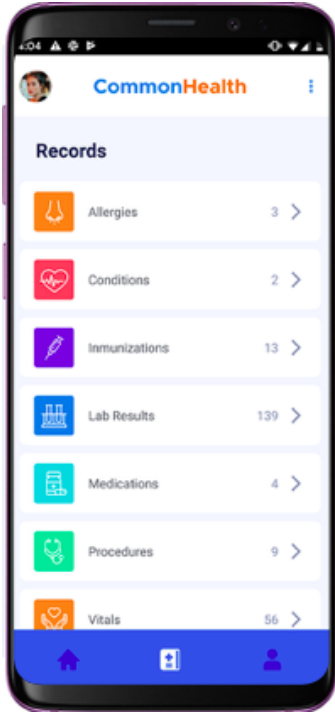
- **CommonHealth** is the Android platform that lets people collect and store their personal health data and share it securely with the health partners they **trust**

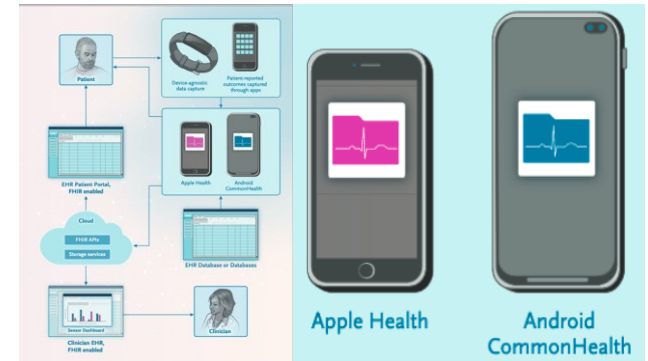- Data is only shared with clear, informed **consent**

THE NEW ENGLAND JOURNAL of MEDICINE

REVIEW ARTICLE

FRONTIERS IN MEDICINE

Mobile Devices and Health

Ida Sim, M.D., Ph.D.

The CommonHealth model was recently featured in the New England Journal of Medicine.

The Commons Project