

2024 Advanced Regenerative Medicine Forum

Session 2: The Status of RM and Data Management System by Country

NRMD & REAP

The Clinical Databases for Regenerative Medicine in Japan

Yoji Sato, Ph.D.

Head, Division of Drugs, National Institute of Health Sciences

Database Committee, Japanese Society for Regenerative Medicine

DISCLAIMER

NRMD & REAP: the Clinical Databases for Regenerative Medicine in Japan

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For the past year, the speaker has no COI to disclose for this presentation

The views and opinions expressed in this presentation are those of the presenter and do not necessarily represent official policy or position of the National Institute of Health Sciences, the Ministry of Health, Labour & Welfare, or the Japanese Society for Regenerative Medicine.

1. What are NRMD and REAP?

2. Overview of NRMD

3. Overview of REAP

4. Operation and utilization of NRMD/REAP

NRMD and REAP: Features of the two databases



Regenerative Medicine Patient Data Registration Systems Established and Operated by the Japanese Society for Regenerative Medicine



(National Regenerative Medicine Database)



Platform for registering
non-commercial clinical research on specified processed cells,
certified advanced medical care using specified processed cells, and
commercial clinical trials of regenerative medical products (CTPs/GTPs)



Platform for registering
post-marketing surveillance of regenerative medical products

REAP

(Regenerative Medicine Evidence Accumulation Platform)

Platform for registering
therapies based on physician's discretion using specified processed cells

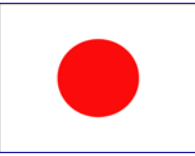
There is no particular difference in the electronic data capture (EDC) system used.

NRMD and REAP: Features of the two databases



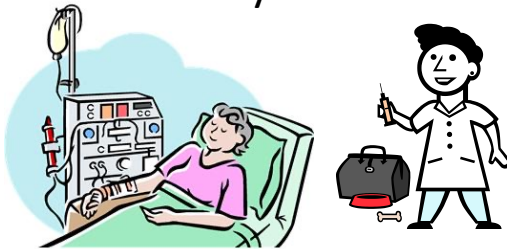
Patient Data Registration System for Regenerative Medicine (RM)			
Name	REAP (RM Evidence Accumulation Platform)	NRMD (National Regenerative Medicine Database)	
Main Purpose	Validation of RM	Development & Evaluation of RM	Commercial Development of Regenerative Medical Products
Relevant Law	Act on the Safety of RM (RM Safety Act)		Pharmaceuticals & Medical Devices Act (PMD Act)
Target	[RM Safety Act] Therapies based on physician's discretion using specified processed cells (= cell processed products not yet approved by the MHLW)	NRMD/CR [RM Safety Act] Non-commercial clinical research on specified processed cells or certified advanced medical care using them [PMD Act] Commercial clinical trials for regenerative medical products	NRMD/PMS [PMD Act] Post-marketing surveillance (PMS) for regenerative medical products (= cell processed products or gene therapeutics)
Determination of Input Items	Joint WG of Regenerative Medicine-Related Societies	WG of the Registry Committee of the Japanese Association of Medical Sciences	

Two Acts Regulating RM/CT

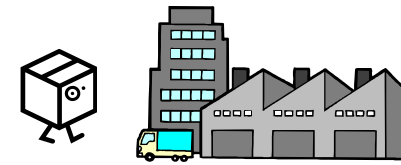


Regenerative Medicine (RM)
Cell Therapy (CT)

Medical practices using processed cells,
whose safety and efficacy have not yet
been confirmed by the Government



Manufacturing and marketing of
products for RM/CT by firms



**Act on the Safety of Regenerative Medicine
(RM Safety Act)**

Medical
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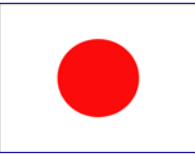
Clinical researches using
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(non-commercial)

**Pharmaceuticals & Medical Devices Act
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Clinical trials of RMPs
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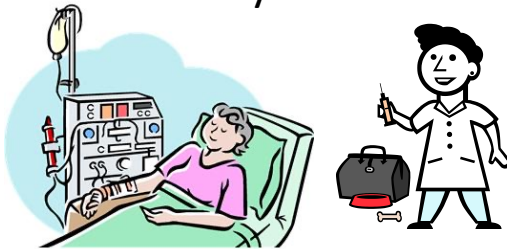
Regenerative
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(RMPs=CTPs/GTPs)

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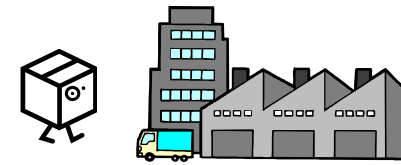


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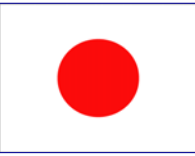
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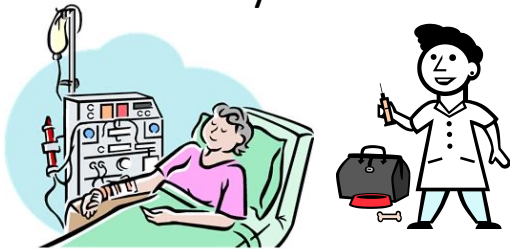
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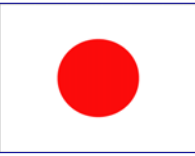
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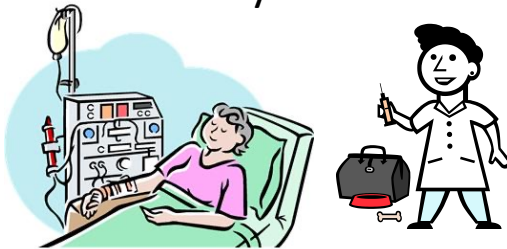
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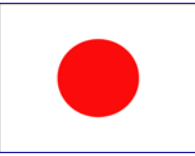
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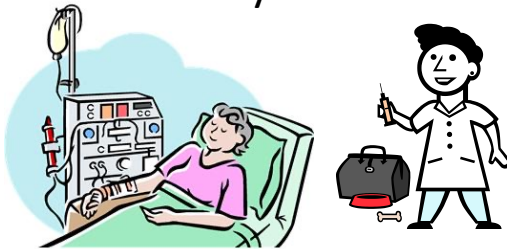
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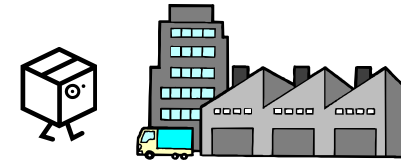


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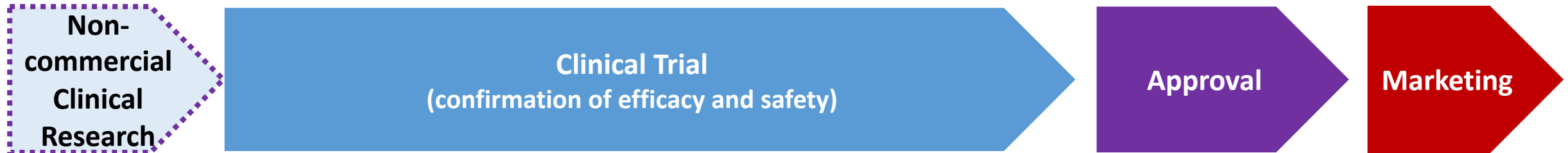
Clinical trials of RMPs
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Two Major Regulatory Challenges for the Development of Regenerative Medical Products



□ Conventional approval process



□ New approval process that accommodates early practical application of RM products



- If data from the clinical trial are likely predict efficacy and confirming safety, conditional/term-limited marketing authorization for RM products might be granted to timely provide the products to patients.
- The PMD Act requires further confirmation of safety and efficacy during the post-marketing phase.

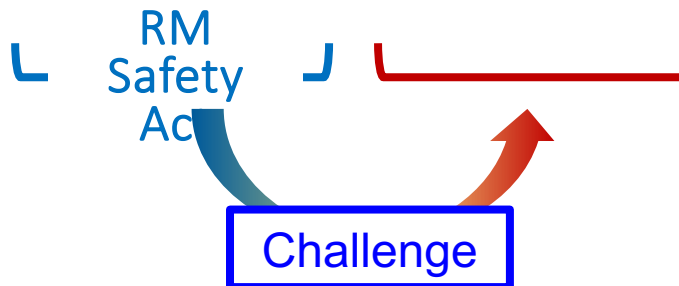
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Background of NRMD Construction



Report of the Study Group on the Ideal Patient Registration System for Regenerative Medical Products and the Study Group on the Ideal Patient Registration System for *In-Vitro* Implantable Medical Devices (MHLW, July 4, 2014)

“Considering that a wide variety of products are expected for regenerative medical products and implantable medical devices and that the number of patients using each product is not necessarily large, it is efficient for medical institutions, academic societies, manufacturing/marketing authorization holders, and the government to cooperate to establish and utilize a cross-sectional patient registration system, rather than for manufacturing/marketing authorization holders to establish a patient registration system for each product.”

History of NRMD



PMDA

Constructed a post-marketing surveillance EDC (with the reliability assured by CSV)

AMED

Outsourced the development of RMed-Japan (mainly for non-commercial clinical research) to JSRM as a contract R&D project

JSRM

Integrated PMDA-built EDC and RMed-Japan services, adopted Viedoc as platform, and renamed NRMD.



NRMD operation started **by JSRM**

The RM National Consortium

2015

2016

2016
2017

2017

EDC employed for NRMD/CR and NRMD/PMS



Clinic/PMS

Study Registration and Reference
Compliant with MHLW's GPSP Ordinance



Reports

Diverse reporting services



Me

ePRO/eCOA Services



viedocTM

TMF

Document management of related documents



Connect

Video Calling Service



Logistics

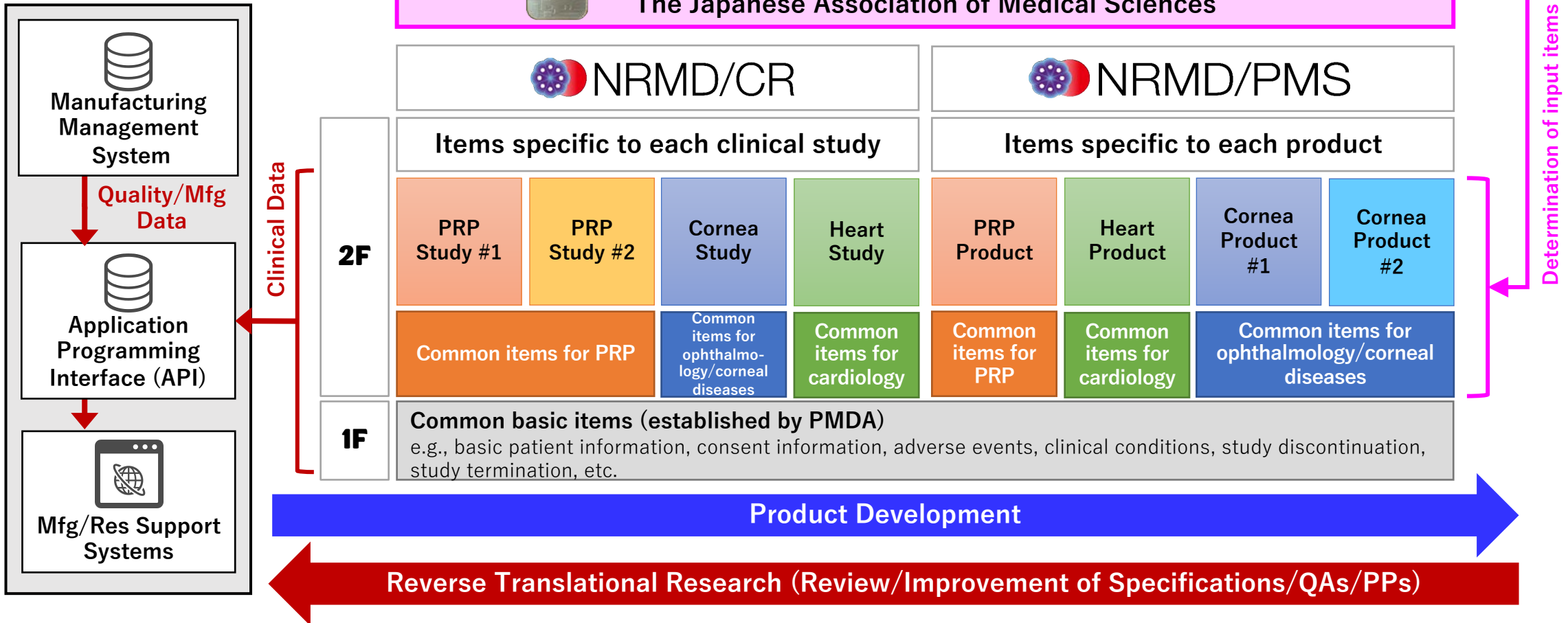
Common Management System for Regenerative Medicine Product



In addition to Viedoc EDC, there are several other services available.

Outline of NRMD

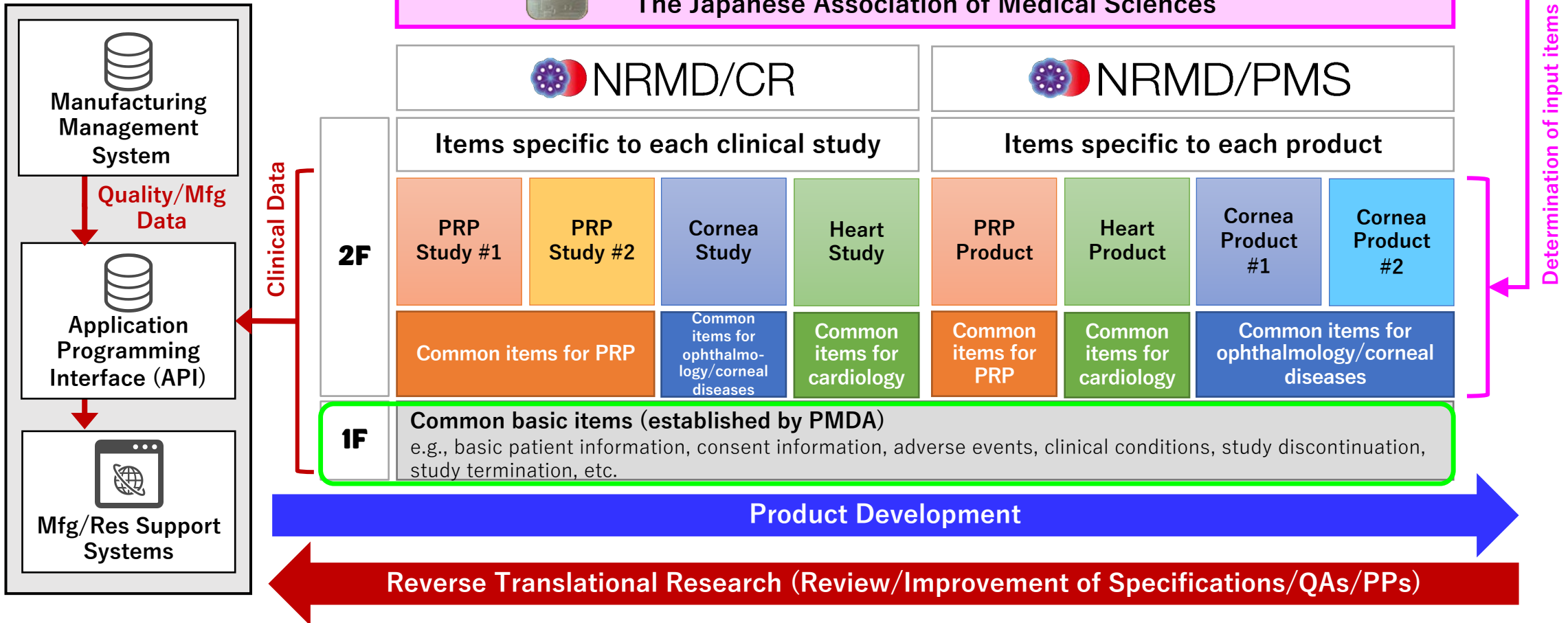
※To be discussed
in the future



CSV (Computerized System Validation) is applied to the clinical research database to ensure the data quality and to realize seamless utilization of real-world data for product development and reverse translational research. (CR has been operational since October 2017, and PMS since March 2018)

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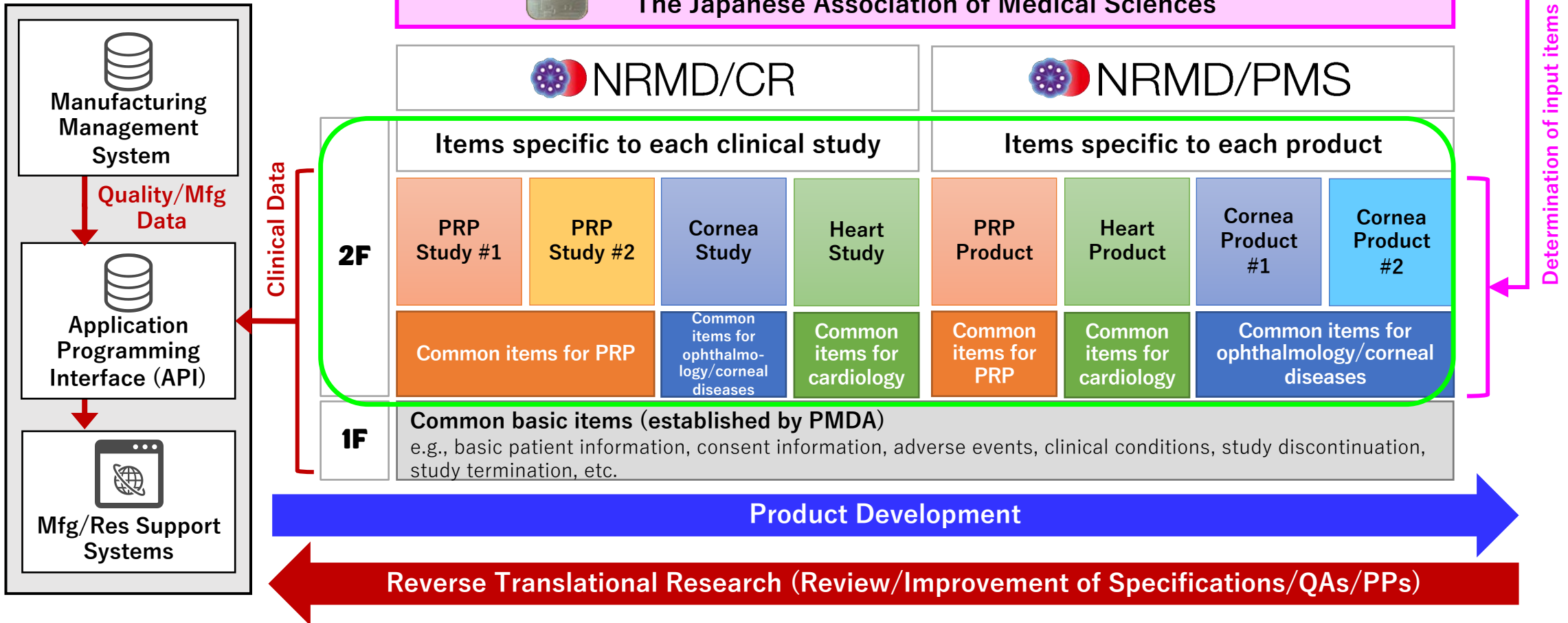
1F: Common basic items (general items determined in consultation with PMDA)

Category	Items
General Information	consent, date of consent, post-marketing survey flag, date of birth, and gender, date of use or start of use, time of use or start of use, height, weight, primary disease, disease history, complications, allergies, specific allergies
Periodic Survey	survey conducted or not, date of observation
Adverse Events /Defects Information	whether or not an adverse event occurred, type of the adverse event, date of onset, severity, treatment or other measures for the adverse event, specific details, date of outcome, outcome, detailed status, causal evaluation, opinion on the adverse event, whether or not a defect occurred, type of the defect, date of occurrence
Survey Completion	Date of survey completion, reason for survey completion, detailed status

<https://www.pmda.go.jp/safety/surveillance-analysis/0036.html>

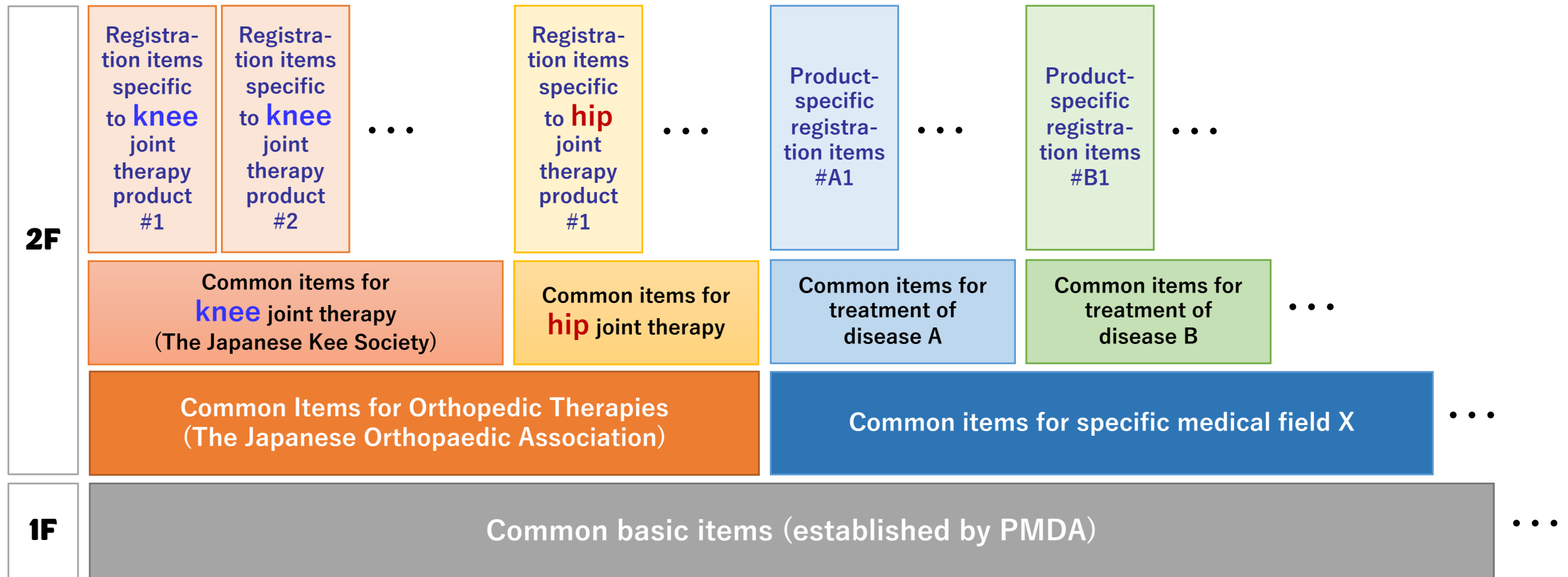
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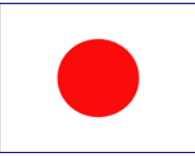
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2F: Hierarchy of product/disease-specific items (examples)



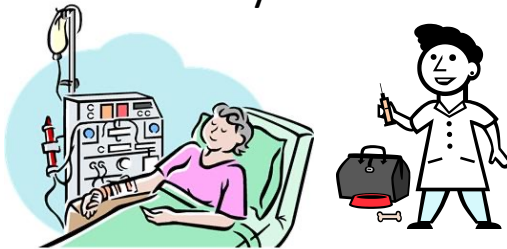
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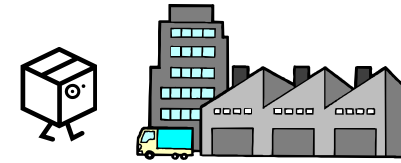


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Clinical trials of RMPs
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The Establishment of REAP



Background

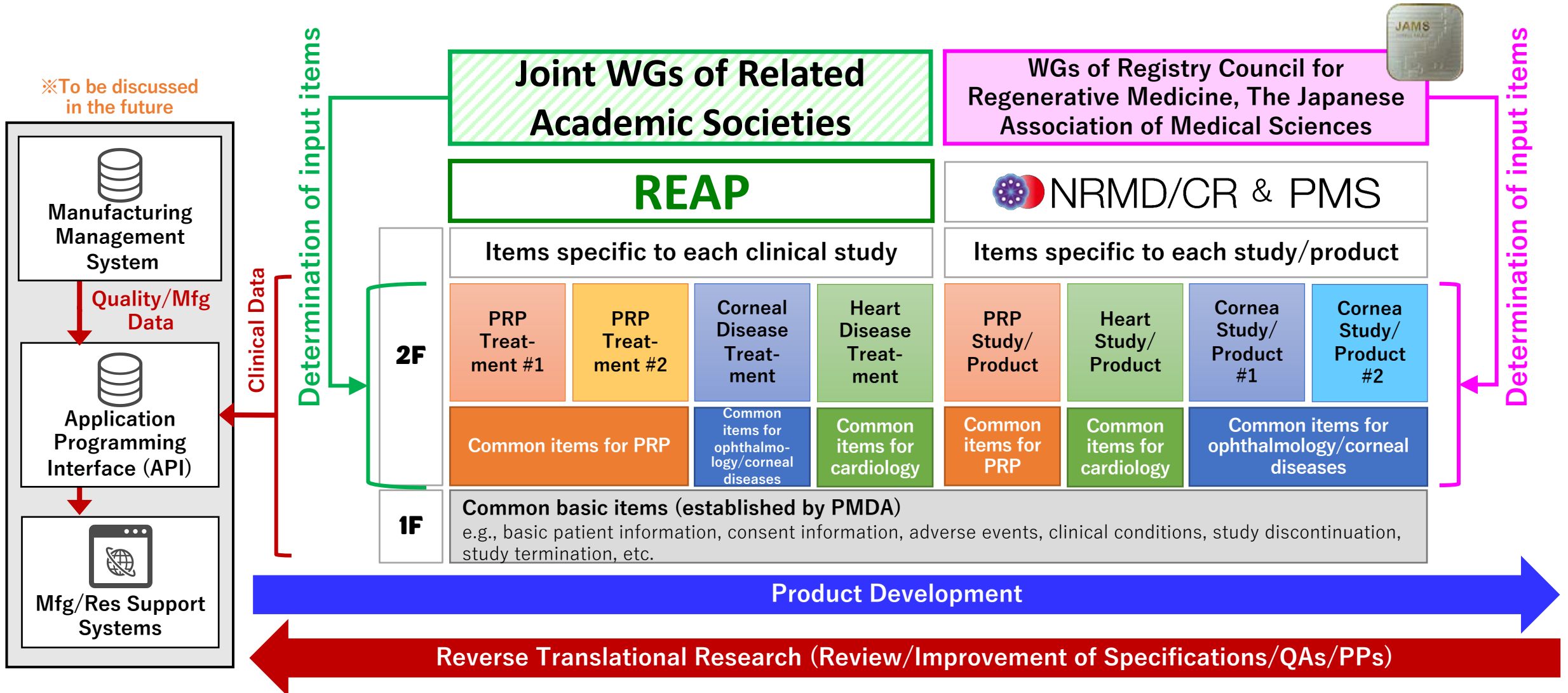
- From the viewpoints of public health and new product development, **a registry should be established for therapies using unapproved cell processed products**, which is legal in Japan **as medical practices at the discretion of physicians**, and **information on their safety and validity (efficacy) should be accumulated**.
- Asking for cooperation of the Japanese Association of Medical Sciences in the development of input items for their clinical outcomes may give rise to the misunderstanding that the JAMS is promoting unproven medical treatment.

Solution

- **REAP (Regenerative medicine Evidence Accumulation Platform)** was established in 2023 as a registry service for such treatments, independent of NRMD.
- Related academic societies other than the Japan Medical Association are in charge of input items.

Outlines of NRMD & REAP

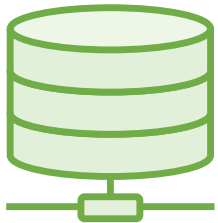
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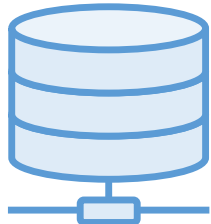
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Utilization of registration data

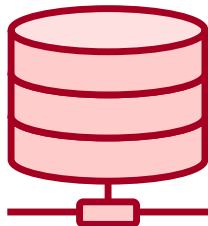
REAP



NRMD/CR

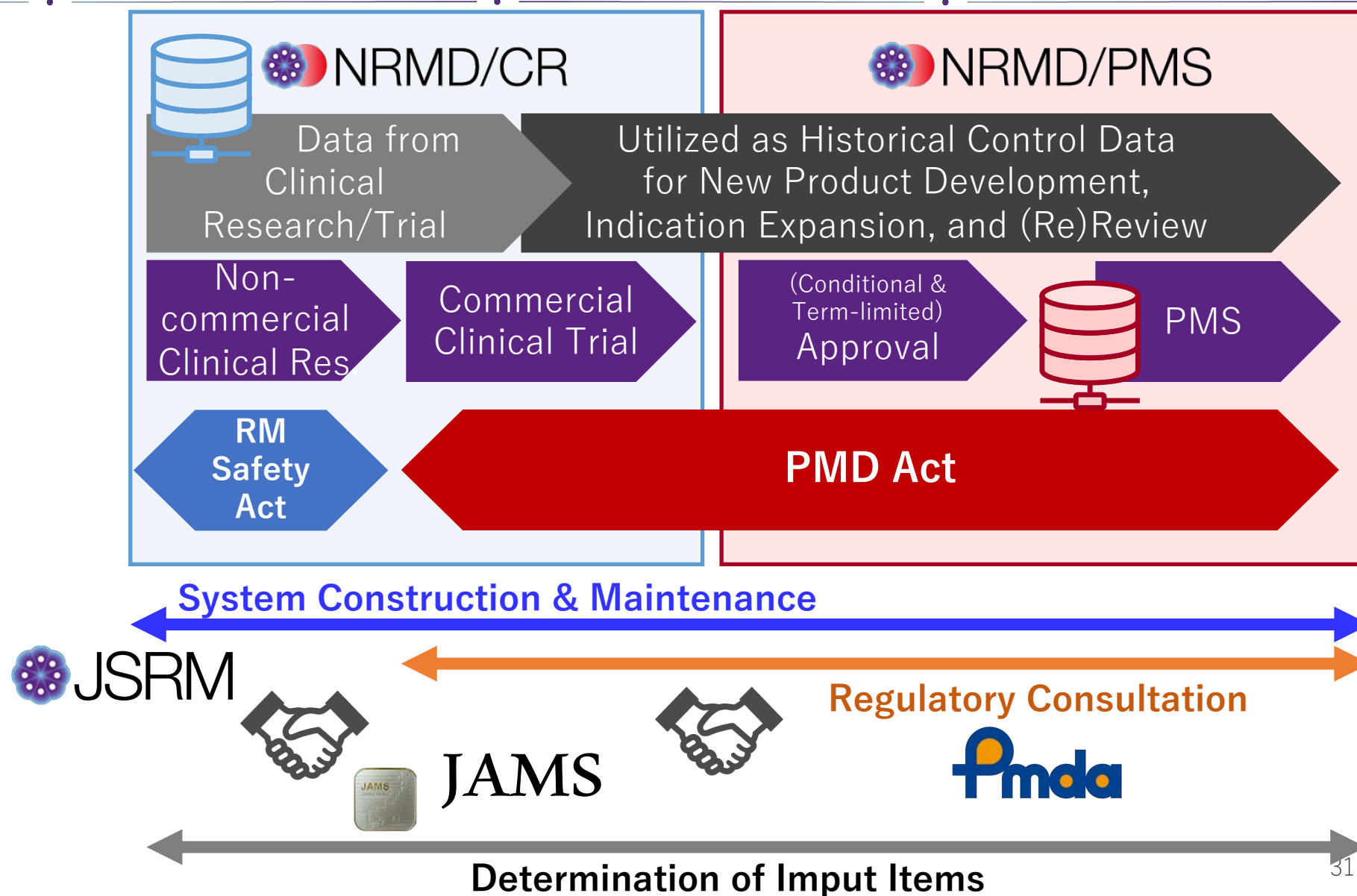


NRMD/PMS

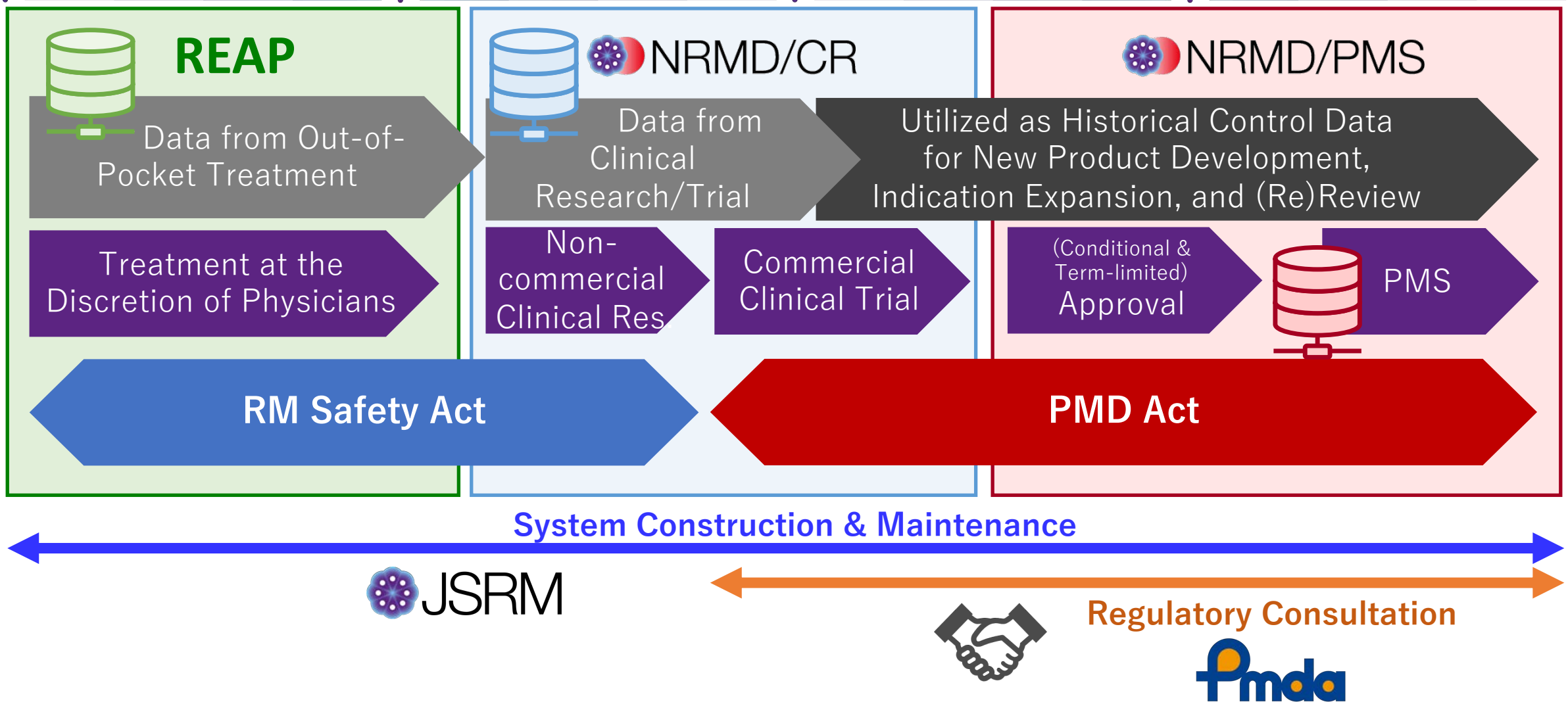


1. Data quality is assured for **REAP** and **NRMD/CR** by using CSV (Computerized System Validation), which conforms to **the Good Post-marketing Study Practice (GPSP) under the Pharmaceuticals and Medical Devices Act.**
(→ Certified Advanced Medical Care, Tech Transfer to Industry, *etc.*)
1. For **non-commercial clinical research** that allows for a control group, **data from the control group can be registered with the same quality.**
2. **Data from previous control groups may be used as historical controls** in subsequent non-commercial clinical research or post-marketing studies (PMS).
3. For products for which it is difficult to establish a control group, **a PMS-focused R&D design** could support smooth commercialization without reliance on randomized controlled trials (RCTs).

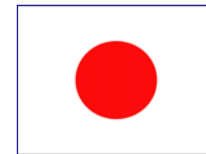
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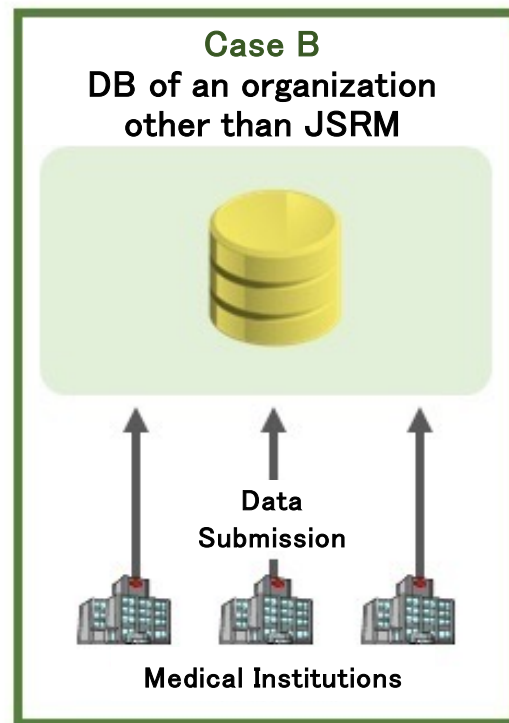
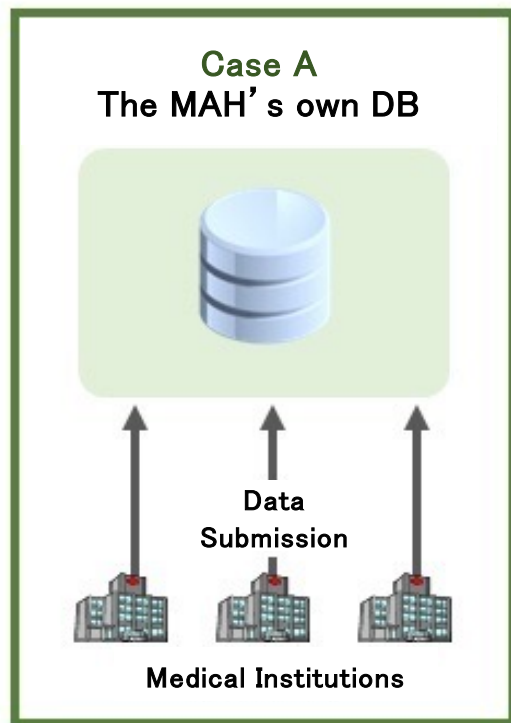
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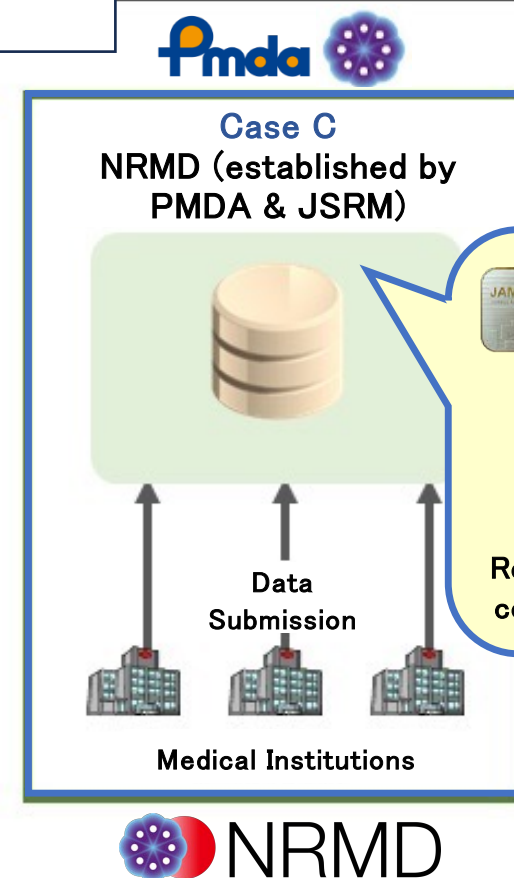
Three Types of Patient Registration Systems for Regenerative Medical Products (CTPs/GTPs)



RM Product Patient Registration Systems



Example: **FormsNet3SM**



The Japanese Association of Medical Sciences Regenerative Medicine Registry Council

Review of input items and confirmation of operation

The Japanese regulatory authorities (MHLW/PMDA) recommend the use of NRMD/PMS for MAHs of CTPs/GTPs, but it is not mandatory. In contrast, the Japanese funding agency (AMED) requires the use of NRMD/CR for non-commercial clinical research using specified processed cells.

For more information about **NRMD**



About

Information

CONTACT

JP



Visit

<https://www.nrmd.jp/en/>

Orchestrating Wisdom To Innovate,
Universalize For The Happiness
And Future Of All Human Beings

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For more information about REAP



REAP

REAPについて

ご利用までの手順

利活用について

調査項目策定について

お知らせ

お問い合わせ



Visit

<https://www.reap.jp>

Regenerative medicine Evidence Accumulation Platform

REAPは、治療として実施される再生医療等（自由診療など）のあらゆるデータを登録し
再生医療等の科学的妥当性を客観的に検証するためのプラットフォームです



再生医療の研究開発を支援するNRMDについてはこちらのサイトからご確認ください。

For more information about REAP



REAP

REAP 정보

이용까지의 순서

이익 활용에 대해

조사 항목 책정에 대해서

공지

문의

Visit

<https://www.reap.jp>

... & use Google Chrome's
translate function

Regenerative medicine Evidence Accumulation Platform

REAP는 치료로서 실시되는 재생 의료 등(자유 진료 등)의 모든 데이터를 등록하고
재생 의료 등의 과학적 타당성을 객관적으로 검증하기 위한 플랫폼입니다



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Thank you for your attention!

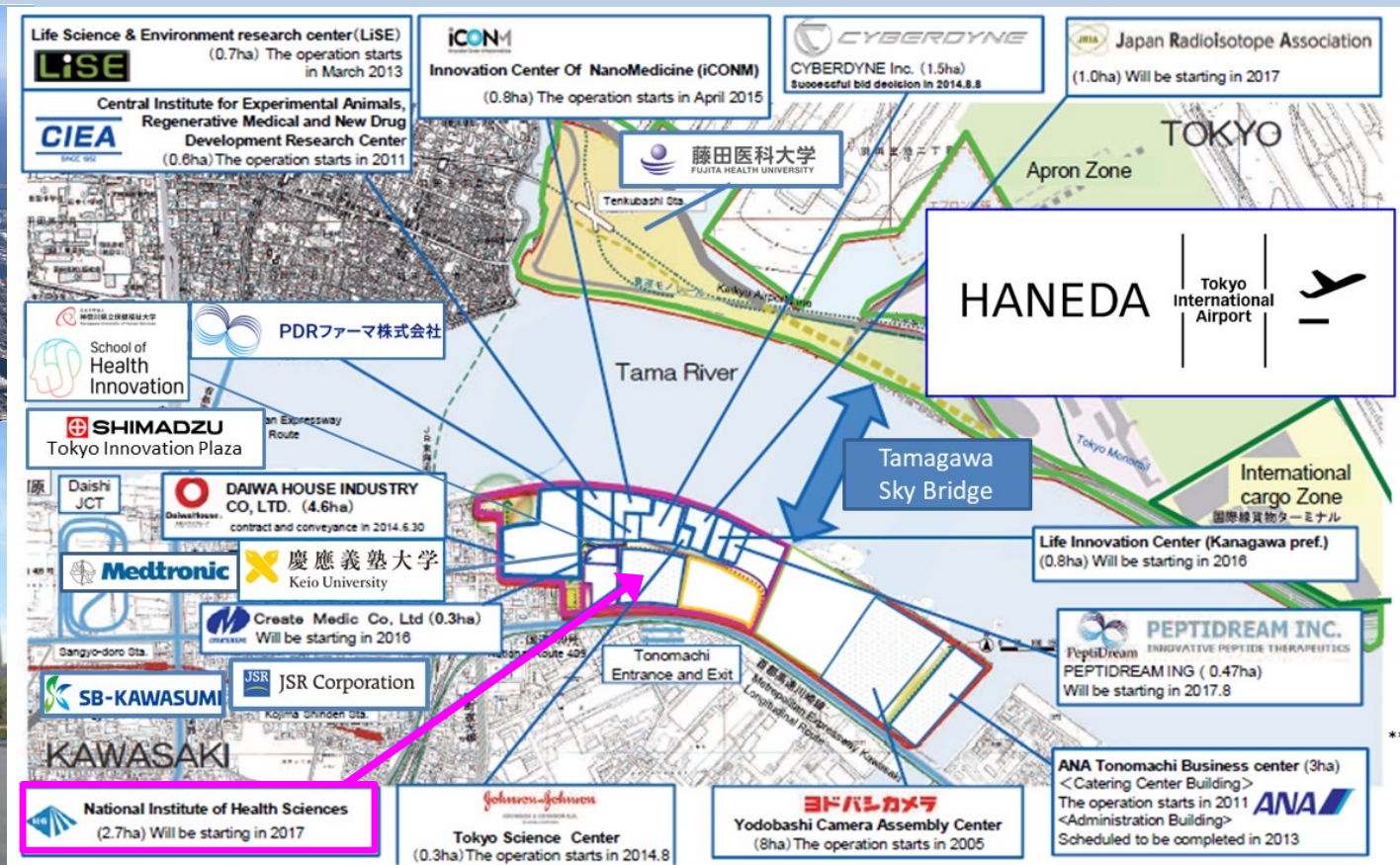
Yoji SATO, Ph.D.

Head, Division of Drugs

National Institute of Health Sciences

3-25-26 Tonomachi, Kawasaki Ward, Kawasaki City 210-9501, Japan

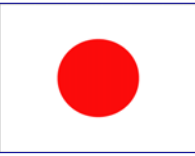
E-mail: yoji@nihs.go.jp



Supplements



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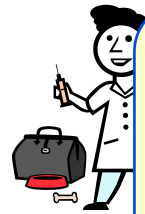


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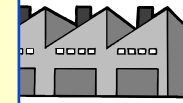
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A more correct
indication of
REAP's coverage



Clinical studies on regenerative/cellular
therapies, which are funded by AMED (a
national funding agency) are required to
register clinical data in the NRMD/CR



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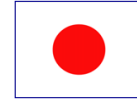
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Regulation of cell-based therapeutic products in the United States, the European Union (and the United Kingdom), and Japan

	US	EU (and UK)	Japan
Classification of PSC-derived CTPs	351 HCT/P	Advanced Therapy Medicinal Product (ATMP)	Cell-Processed Product
Product type	Biologics or Medical Devices	Medicinal Products	Regenerative Medical Products
Regulatory authority	FDA	EMA (MHRA in UK)	MHLW and PMDA
Compliance with GCP in clinical trials	essential	essential	essential in commercial clinical trials
Good Practice(s) for Quality and Manufacturing Controls	cGMP (for biologics) or QSR (for medical devices)	GMP for ATMPs	GCTP
Conditional Marketing Authorization with Putative Efficacy	RMAT/HDE	Hospital Exemption (Article 28 of Regulation 1394/2007/EC)	Conditional and Term-limited Approval
Use of unlicensed products	Federal regulations prohibit manufacturers from introducing unapproved 351 HCT/Ps into interstate commerce.	Specials (Article 5 (1) of Directive 2001/83/EC)	Specified Processed Cells under the RM Safety Act

Q: Is there any risk of medical treatment being carried out at the discretion of medical practitioners only with the consent of the patient and hospital and without prior review ?

Protection of the Public Health through the RM Safety Act (since 2014)



6 arrested over unauthorized stem cell therapy using cord blood

 **KYODO NEWS** August 27, 2017



Medical practitioners who conduct **cell therapy without notifying the authorities** can **be arrested** by the Government **in order to prevent future adverse events.**

<https://english.kyodonews.net/news/2017/08/5d0a5ee3cba3-update1-6-arrested-over-unauthorized-stem-cell-therapy-using-cord-blood.html>

MATSUYAMA, Japan – Police on Sunday arrested a doctor and five others suspected of involvement in unauthorized stem cell therapies using blood from umbilical cords and placenta after childbirth.

The doctor who heads a clinic in Tokyo and people involved in cord blood sales are suspected to have administered cord blood to seven patients to treat cancer and as a beauty treatment. Each treatment is said to have cost 3 million to 4 million yen (\$27,400-\$36,600).

While hopes are high over the use of cord blood in the field of regenerative medicine to treat a number of diseases as it contains stem cells, the health ministry is concerned over the spread of costly medical services provided without clear scientific evidence and without ensuring sufficient safety.

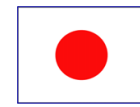
The arrests were the first of anyone suspected of violating a law on regenerative medicine that came into force in 2014. The transplantation of cells could involve the risk of graft rejection and infection.

Medical institutions using stem cells are required to submit treatment plans beforehand for review by the health ministry, except for treating designated diseases such as leukemia.

The six suspects allegedly conducted the treatments without notifying the authorities.

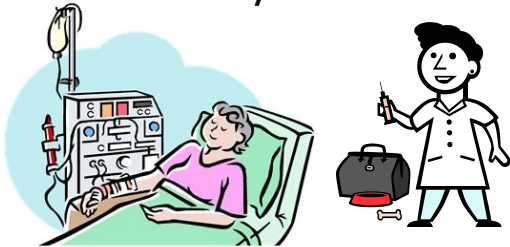
Q: How much do patients pay for regenerative medicine as a medical treatment, clinical research, or advanced medical treatment? (Percentage of insurance coverage, percentage of patient contribution, *etc.*)

Two Acts Regulating RM/CT

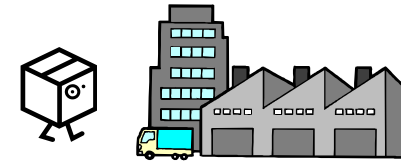


Regenerative Medicine (RM)
Cell Therapy (CT)

Medical practices using processed cells,
whose safety and efficacy have not yet
been confirmed by the Government



Manufacturing and marketing of
products for RM/CT by firms



**Act on the Safety of Regenerative Medicine
(RM Safety Act)**

Medical
treatments using
processed cells

Clinical researches using
processed cells
(non-commercial)

**Public insurance
NOT applied**

**Funded by
research grant**

**Pharmaceuticals & Medical Devices Act
(PMD Act)**

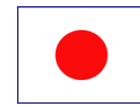
Clinical trials of RMPs
(commercial)

Regenerative
medical products
(RMPs=CTP/GTPs)

**Self- (or research
grant-) funded**

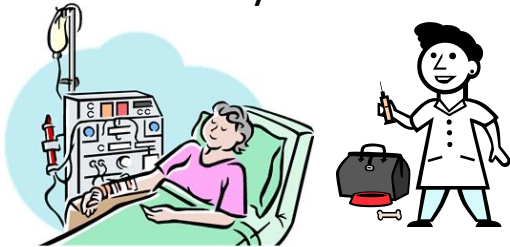
**Public insurance
fully applied**

Two Acts Regulating RM/CT

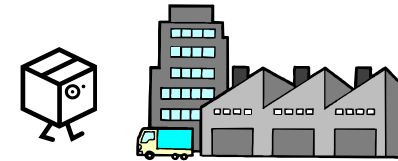


Regenerative Medicine (RM)
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**Act on the Safety of Regenerative Medicine
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Medical
treatments using
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Clinical researches using
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Public insurance
NOT applied

→ Exception

Funded by
research grant

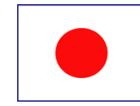
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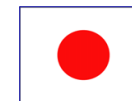
Self- (or research
grant-) funded

Public insurance
fully applied



“Advanced Medical Treatment”

- In Japan, medical treatment that is not covered by public medical insurance is not allowed to be combined with medical treatment covered by public medical insurance, and the patient must pay the full amount for both treatments when conducted at the same time.
- However, for new treatments and surgeries for intractable diseases, etc., which are studied and developed at specific university hospitals, etc., once information on efficacy and safety is accumulated, certain institutional criteria are set for each medical treatment.
- Medical treatment at an insured medical institution that meets the criteria is designated as “Advanced Medical Treatment” by the Ministry of Health, Labor and Welfare, and is allowed to be combined with medical treatment covered by public medical insurance.
- Advanced medical treatment is considered to be a treatment or surgery that is still in the process of being evaluated to be covered by public medical insurance.



“Advanced Medical Treatment”

Example:

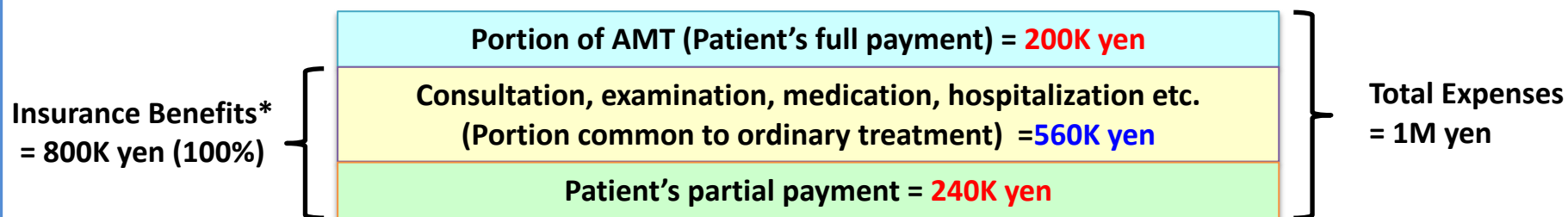
Total medical expenses are 1 million yen, of which 200,000 yen is for advanced medical treatment.

1. The patient is responsible for the entire **200,000 yen for the advanced medical treatment**.
2. The portion common to **ordinary treatment** (consultation, examination, medication, hospitalization fee*) is the portion that **is covered by public medical insurance**.

Insurance benefits* = 800,000 yen (100%)

70% (560,000 yen) is paid by public medical insurance.

30% (240,000 yen) is the patient's partial payment.



* **The high-cost medical care system** can be applied to the patient's partial payment, which is the difference between the insurance benefits and the actual payment by public medical insurance.

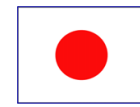
Q. In the case of medical practices that are not covered by insurance (treatment at the discretion of the physician, treatment not covered by insurance), the fairness of the patient's approach to medical care for high-cost regenerative medicine procedures may be an issue. Is there any support for these through, for example, public interest funds, private funding, or any other means?

“Advanced Medical Treatment Rider”

provided by private insurance companies

1. There is **NO** private insurance **for medical care not covered by public insurance**, because no authority guarantees its safety and efficacy.
2. There is **NO** private insurance **that ONLY covers advanced medical treatment**.
3. **Advanced medical treatment rider** can be added **to private medical insurance and cancer insurance**.
4. Advanced medical care rider cannot be added to the other kinds of life insurance such as death benefits and individual annuities.

“High-Cost Medical Care System”

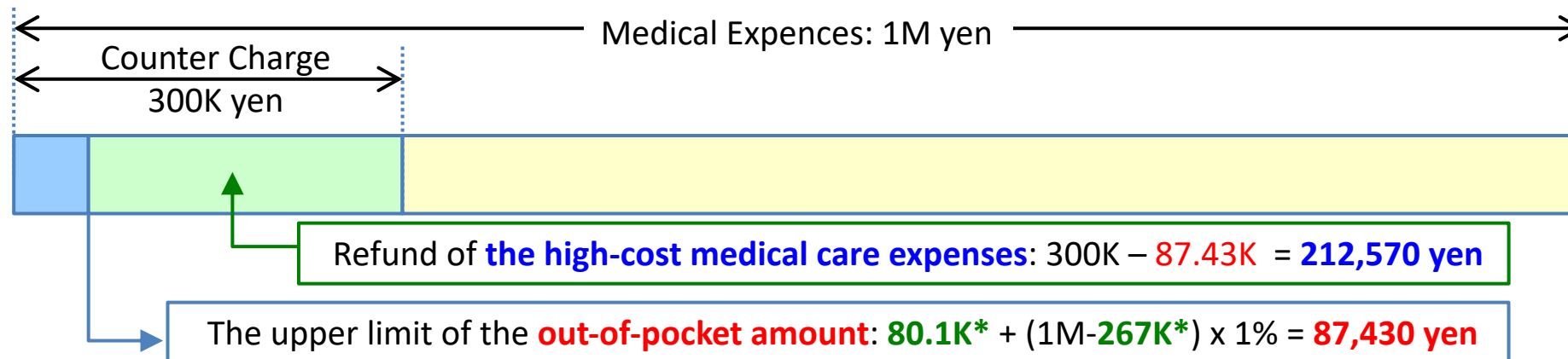


for medical care covered by public insurance

The high-cost medical care system is a system for paying the amount of money paid at the counter of a medical institution or pharmacy that exceeds the maximum amount for a month (from the beginning to the end of the month). This does not include the cost of food and other expenses incurred during hospitalization.

Example: 70 years old or older, annual income of approximately 3.7M-7.7M yen (→ 30% payment*)

In the case of a medical expense of 1M yen, the counter charge (30%) would be 300K yen.



➡ **212,570 yen** will be paid as high-cost medical care expenses, and **the out-of-pocket amount will be 87,430 yen.** * The amount (10-30%) depends on age and income.