



Global GS1 Healthcare Beijing Conference 2016

**Implementation of Standardized
Traceability System
-Expectation of Healthcare Service
Providers and Its Users-**

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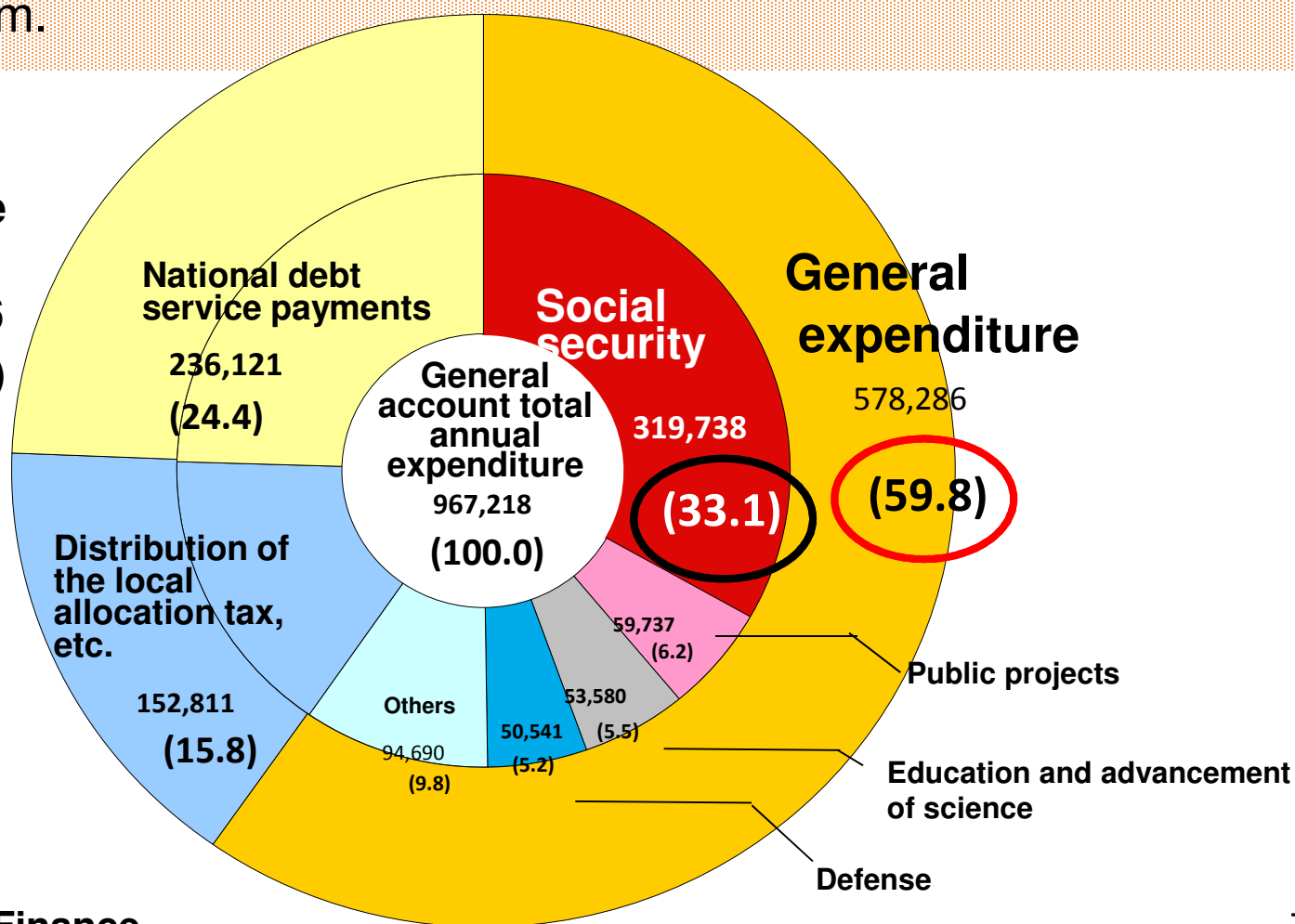
Former Chief Executive, NTT Medical Center Tokyo

The current status of the public finance in Japan

The social security-related costs account for more than half of the national general expenditure and for about 1/3 of the general account. Financial sustainability is difficult to exist without reforming the social security system.

Breakdown of the general account budget in FY2016

(Unit: 100 million yen, %)

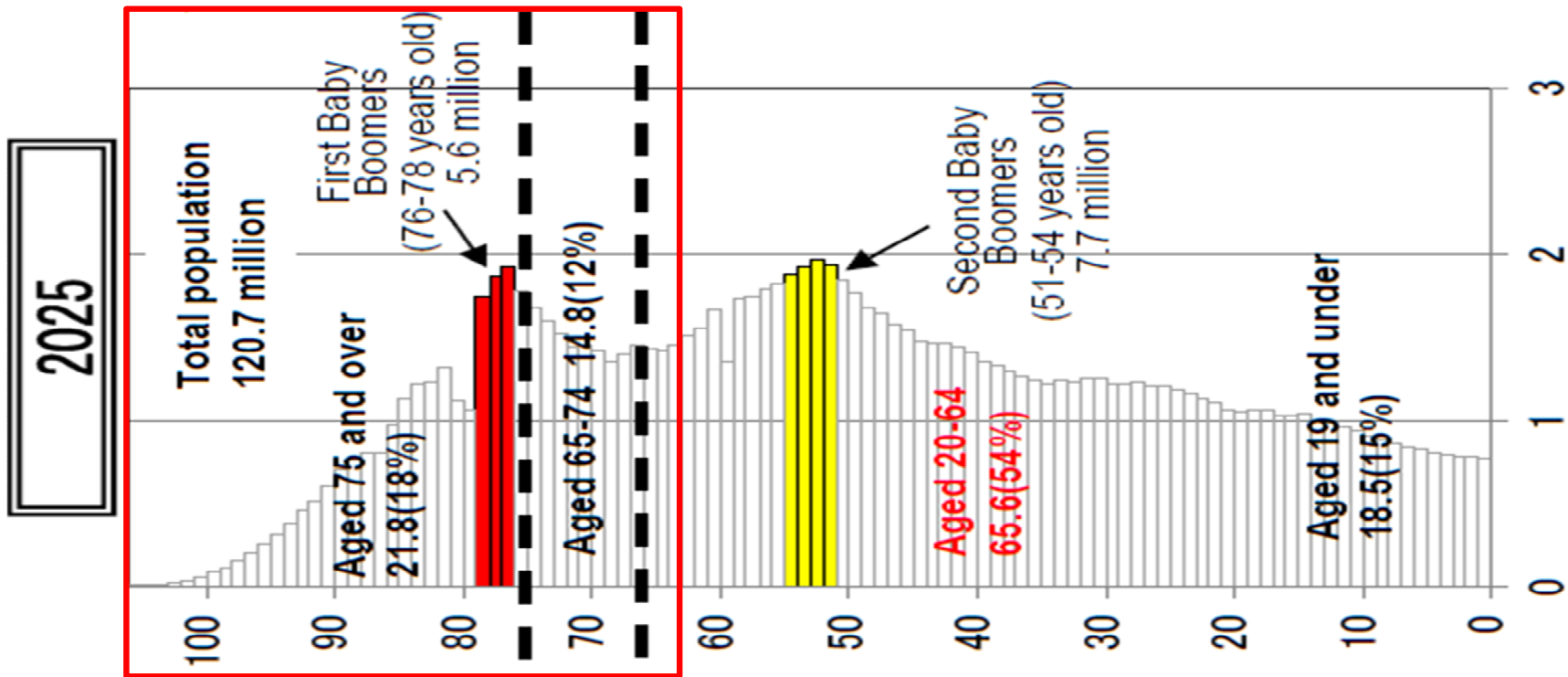


Japan is facing to “The Year 2025 Issues”



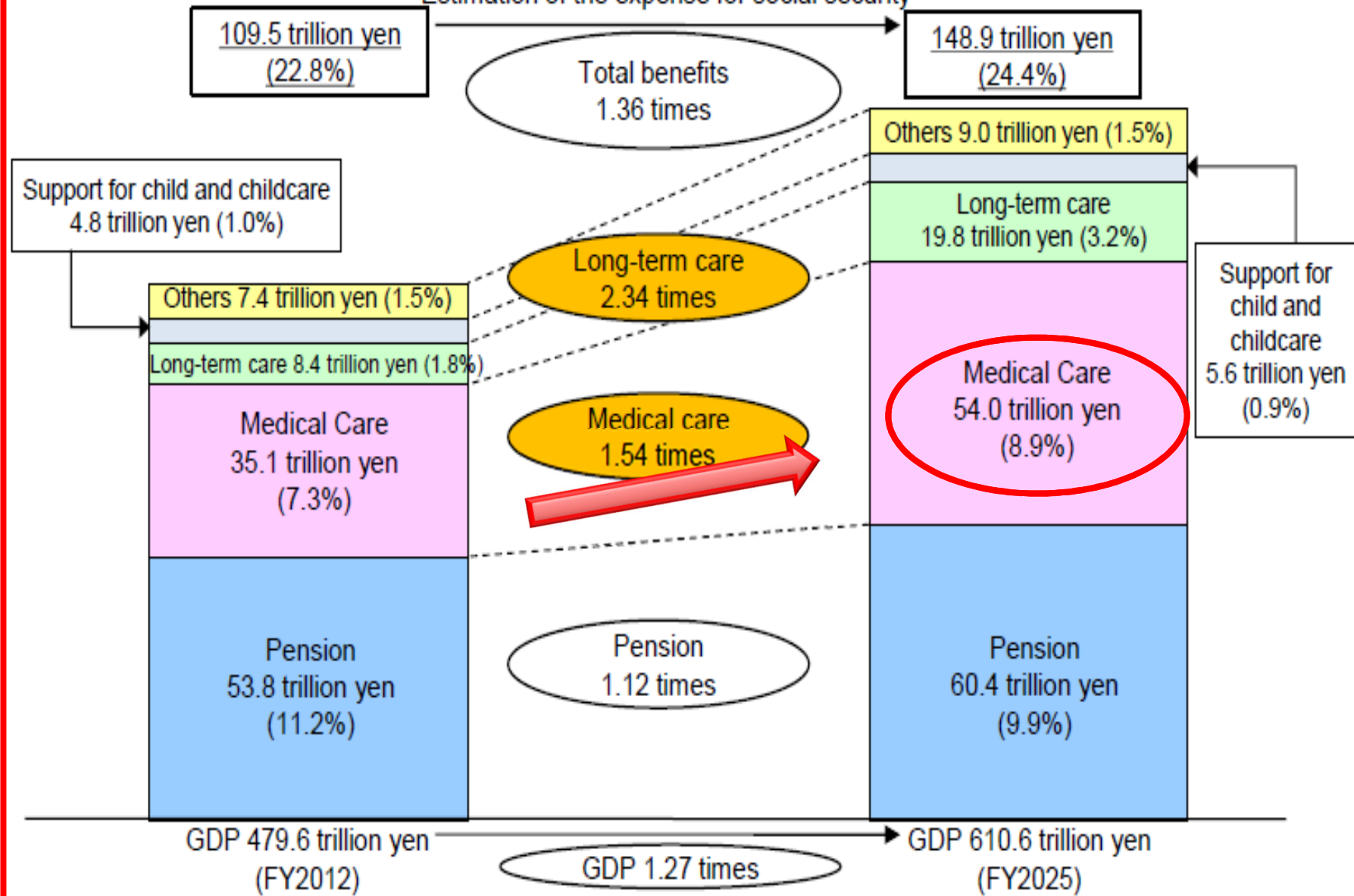
In 2025, the first Baby boomers reach 75-yrs-old. One fifth of Japanese population will consist of people over 75-yrs-old, and one third of it over 65-yrs-old.

Although the working population decreases, the population of those who needs medical care increases.



(Note) The first baby boomers are those who were born in 1947-49. The second baby boomers are those who were born in 1971-74.
(Source) National Institute of Population and Social Security Research “Japanese Future Demographic Projection (Jan. 2012)”

Estimation of the expense for social security



(Source) Ministry of Health, Labour and Welfare
 (Note) Figures in parentheses are percentages of GDP.

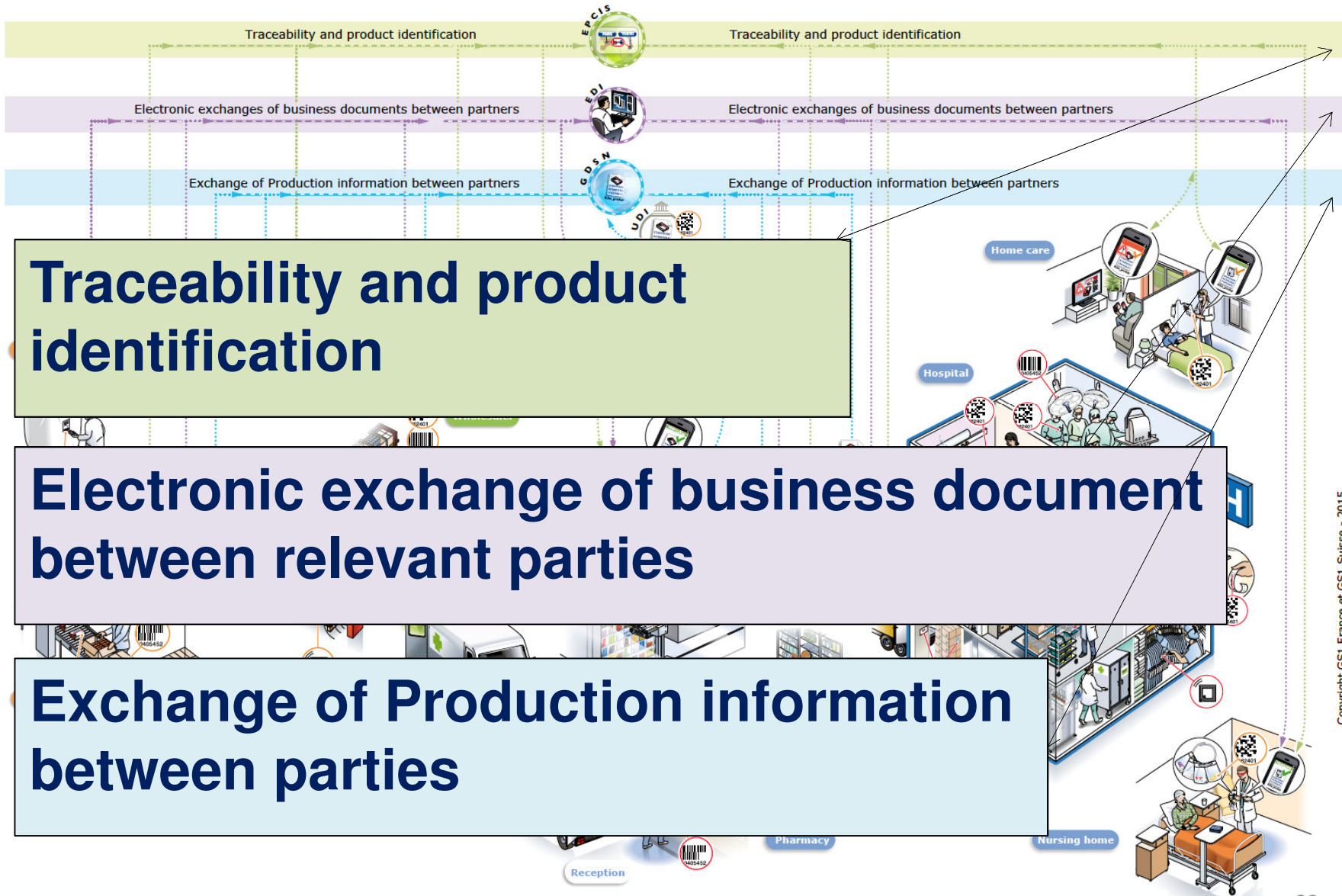
Reasons why we need standardized traceability system in the field of healthcare

In the field of Japanese healthcare, in addition to the patient safety and the improvement of quality, “**cost efficiency**” has become an essential issue as shown in the previous three slides.

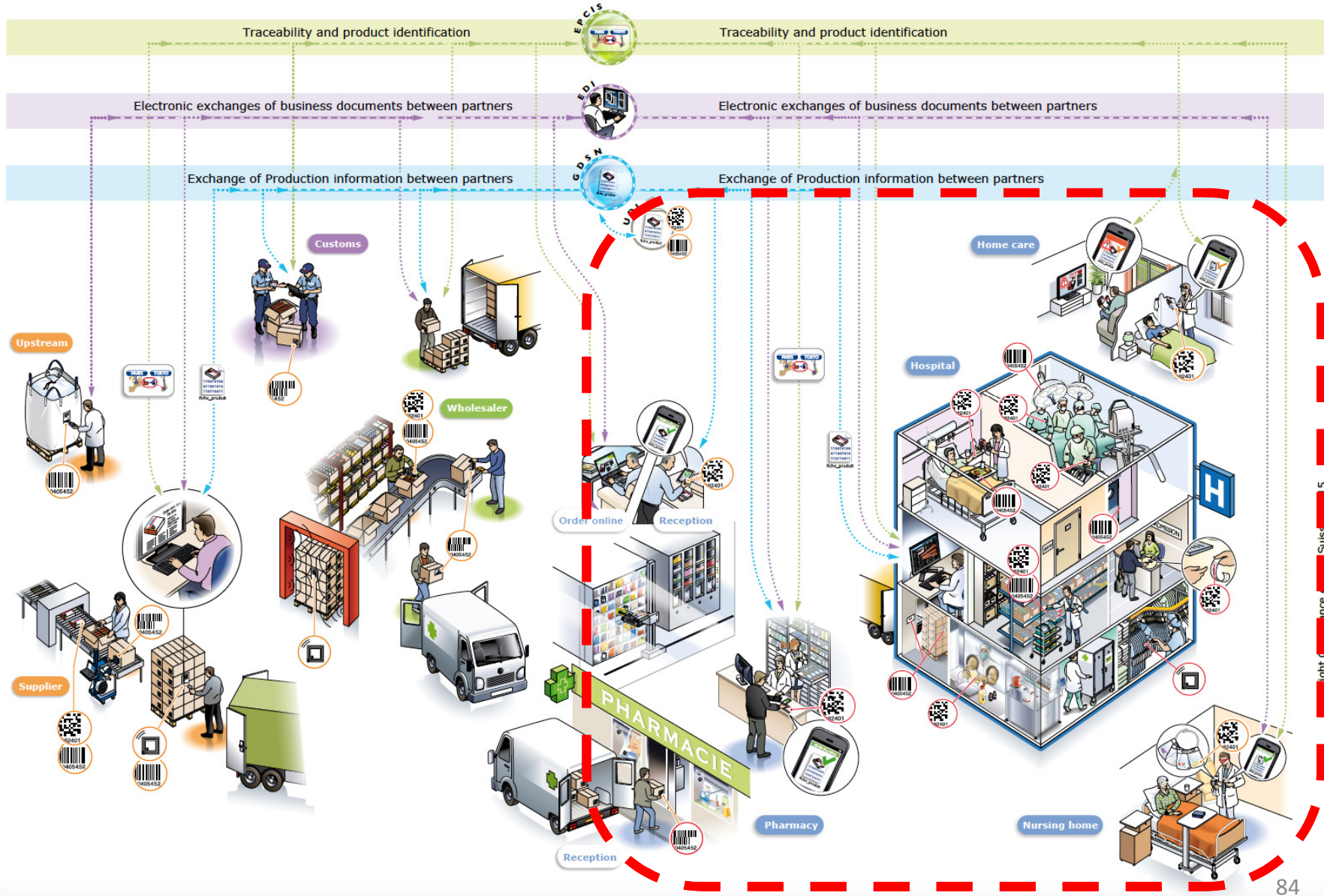
If the cost is the same, we should choose the most effective way and if the outcome is the same, we should select the most affordable way.

For solving this issue, we believe that it is vital to establish the globally standardized system making it possible to secure **the traceability in the field of healthcare.**

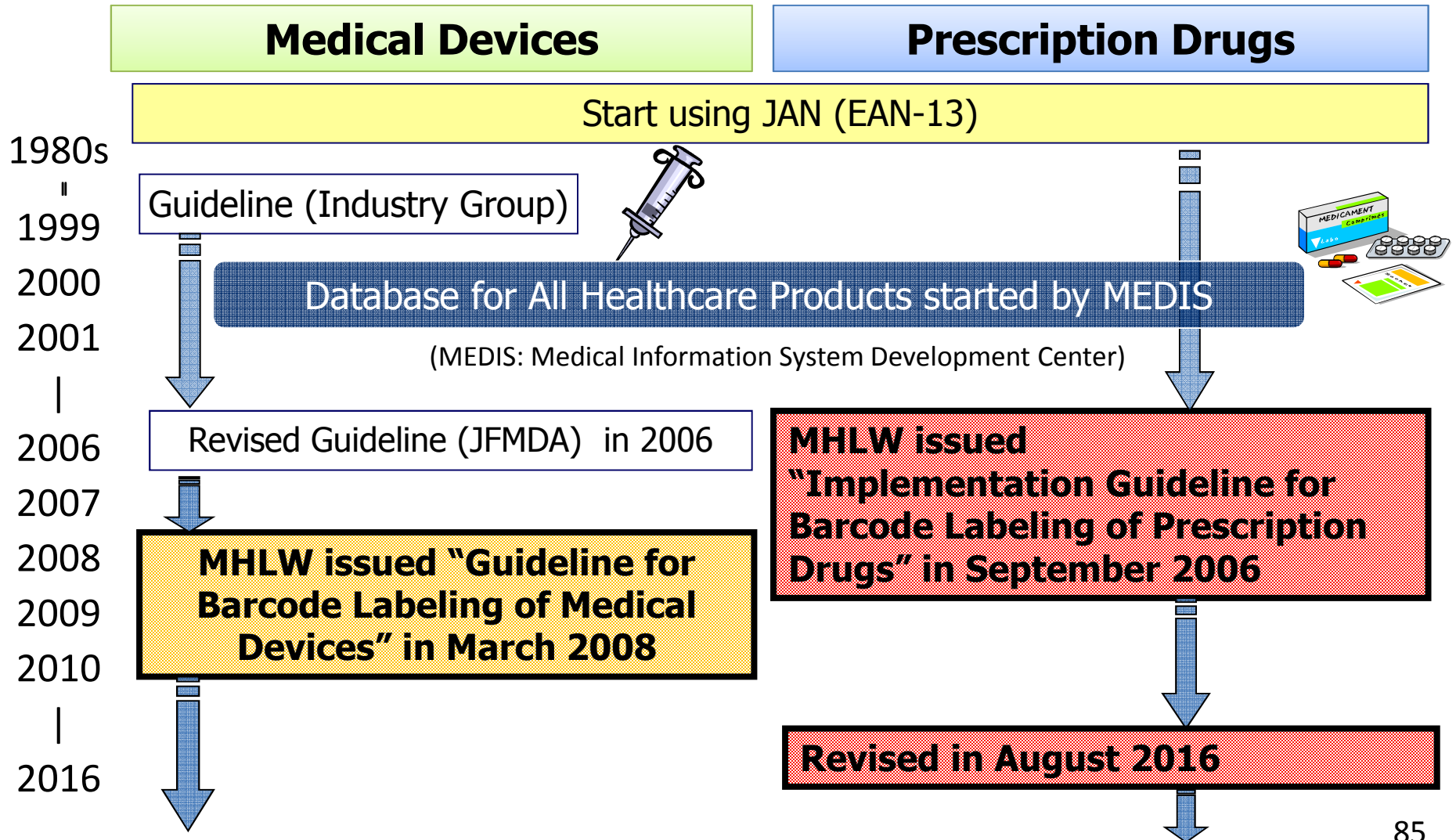
We need standardized traceability system!



We need standardized traceability system!

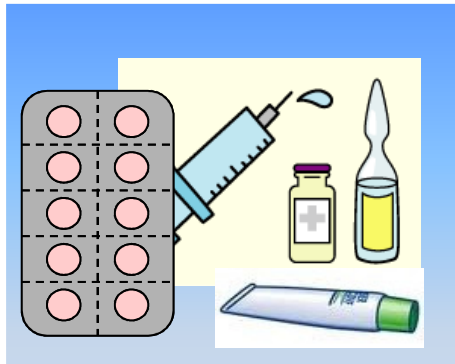


Brief Summary of Barcode Implementation in Healthcare Industry in Japan



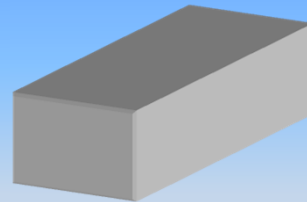
Rough sketch of Barcode labeling for prescription drugs

< Dispensing Unit >



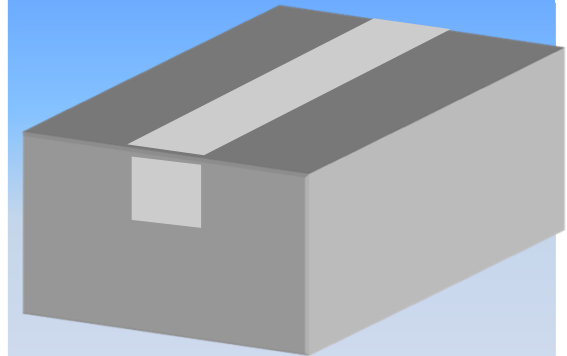
< Sales Package >

(Secondary Package)



< Original Package >

(Tertiary Package)



By 2015 July

Mandatory indication

AI (01) GTIN


By 2021 April

Mandatory indication

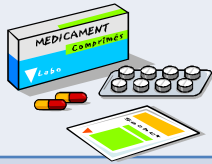
AI (01) GTIN

AI (17) Expiration Date and AI (10) Lot No.

Barcode Labeling of Medical Devices in 2015

	Medical Devices
Primary Package	86.4%
Sales Package (Inner and outer)	94.5%

Barcode Labeling of Prescription Drugs" in 2015

	Specific biological products	Injections	Oral medicine
Dispensing Unit	100 %	100 %	97.5 %
Sales Package	100%	99.9 %	99.8%

Sept. 2016 by MHLW

Loxoprofen 60mg [EMEC]
PVC-金属

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ロキソプロフェン 60mg [EMEC] **60** ロキソプロフェン 60mg [EMEC]
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123500029 (01)04987123500029

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PP 金属 PP 金属

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おしだす  おしだす 

Summary of the Survey to Wholesales (distribution of pharmaceuticals)

Utilization rate of barcodes in distribution center

- | | |
|------------------|---------|
| 1) Sales Package | 100% |
| 2) Outer Package | 79.4% * |

* All companies replied “not yet” are in preparation

Utilization rate of barcodes in their branch office

- | | |
|------------------|---------|
| 1) Sales Package | 81.3% * |
| 2) Outer Package | 56.3% * |

* 80% companies replied “not yet” are in preparation

Sept. 2016 by MHLW

Current Situation in Japan (hospitals, medical careers, patients)

Many kinds of identification code including hospital's private one have already been implemented in most Japanese hospitals.

However, introduction of GS1 identification codes and AIDC technology is still not prevalent.

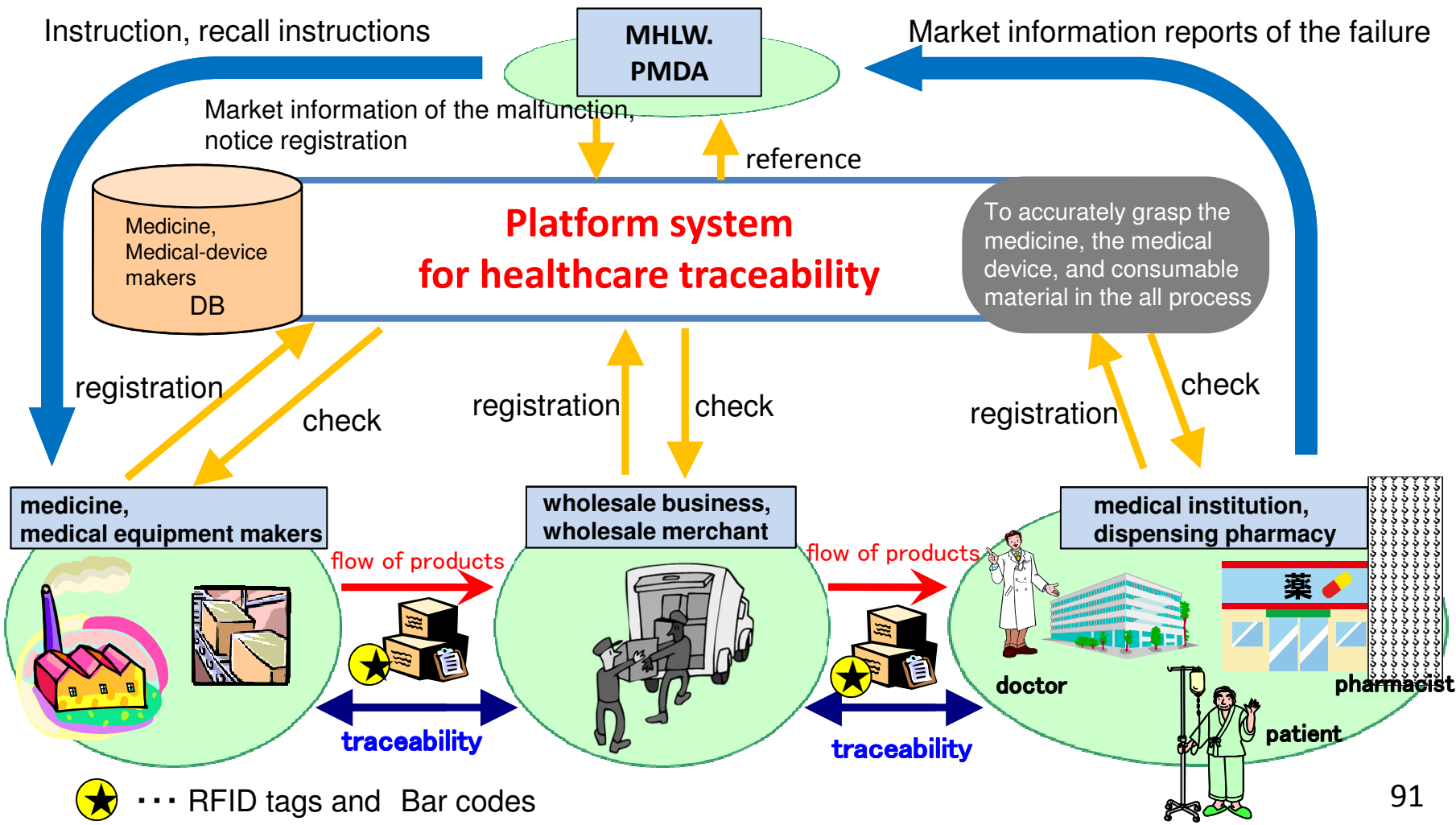
Almost all medical careers in Japan don't know "what is GS1?"

For securing traceability in the field of healthcare, standardization of coding from manufactures to healthcare provider is mandatory.

Now, promoting the benefit of GS1 product identification & barcodes and encouraging healthcare providers and hospitals to use them are key issues.

Platform system being proposed by JUMP

- The Japan Usability Medical Information Promotion Conference (JUMP) was born in 2013 for promoting social security numbers in healthcare systems. One of the proposals of the JUMP is to establish the concept and practical use of traceability.





Introduction effect of traceability system

Case study from
NTT Medical Center Tokyo

NTT Medical Center Tokyo



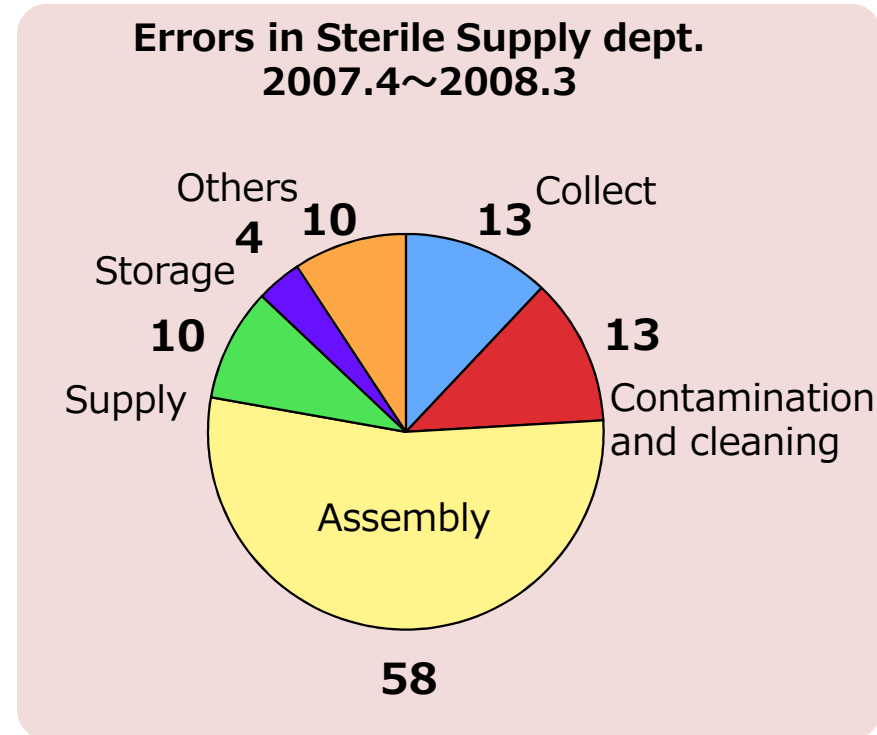
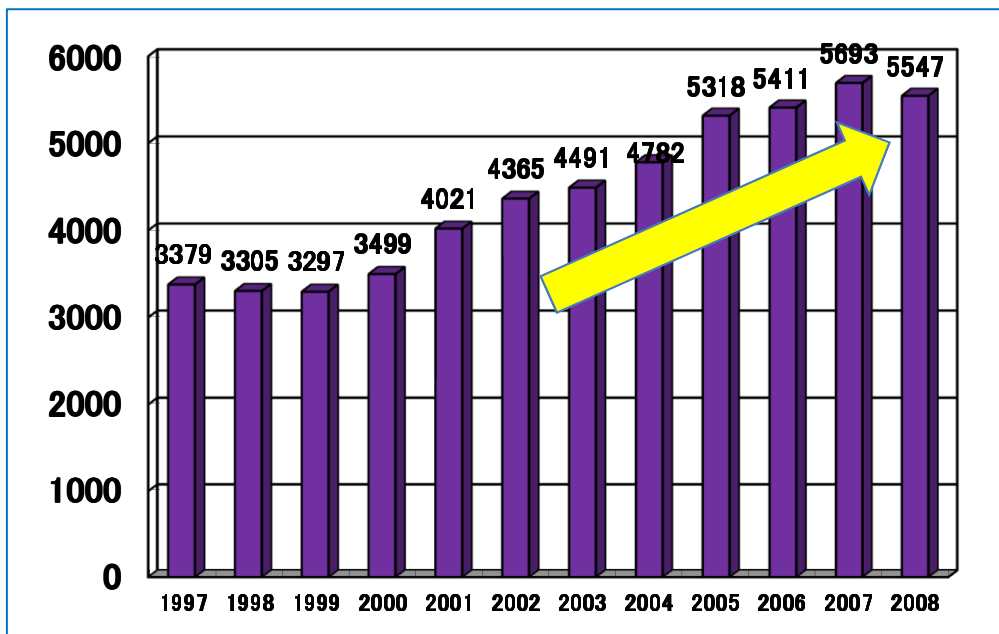
Beds	606
Outpatients per day	Approx. 2,117
Operating rooms	10
Operations per year	Approx. 5,518
Nurses in Ope. Dept.	21
Staff in supply room	10
Washers	3
Sterilizers	6
Surgical containers	Approx. 189
Medical steel instruments (DPM)	Approx. 20,000



Before introducing the traceability system

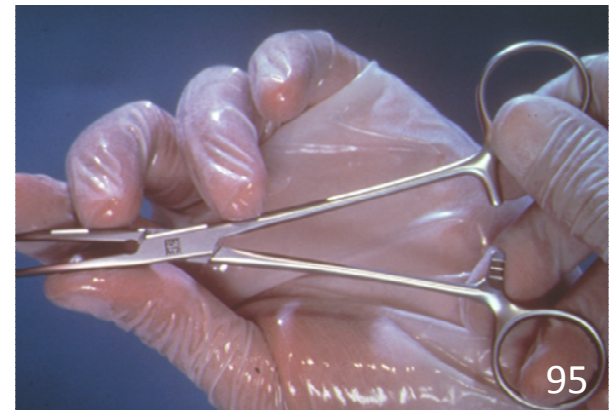
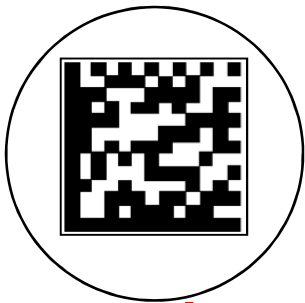
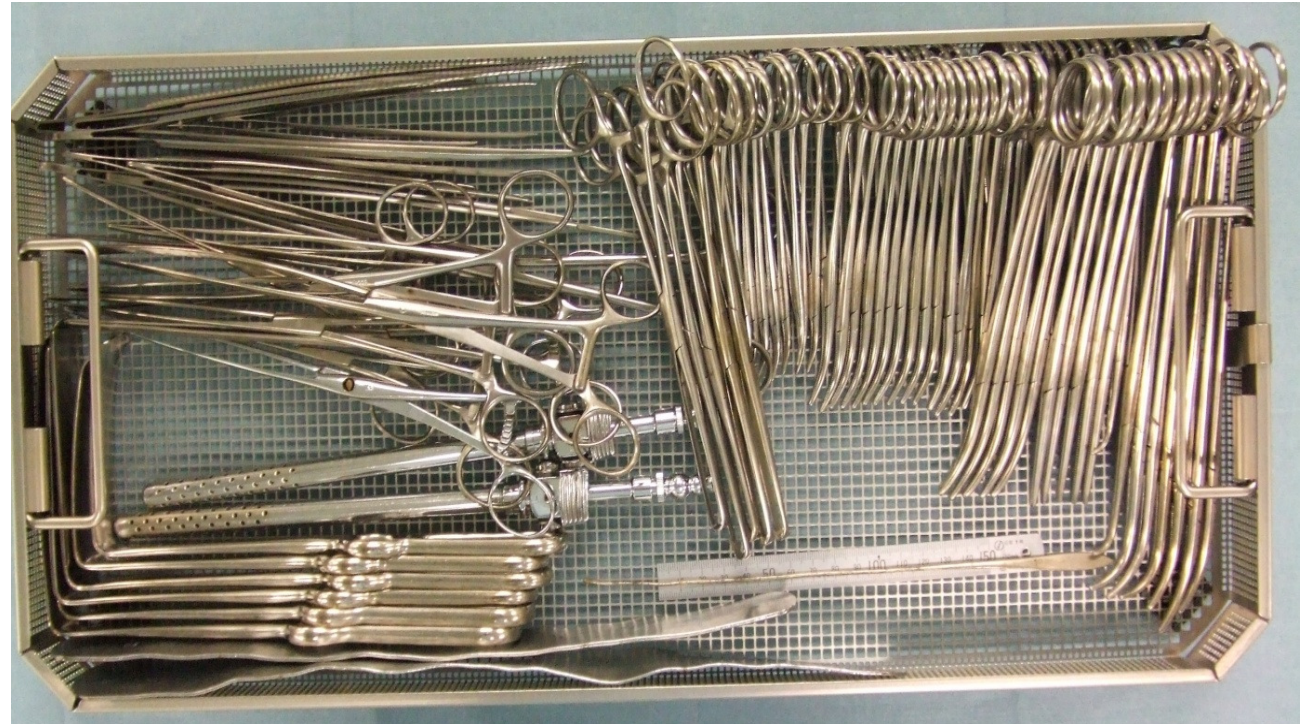


- The number of surgical operations continuously increased.

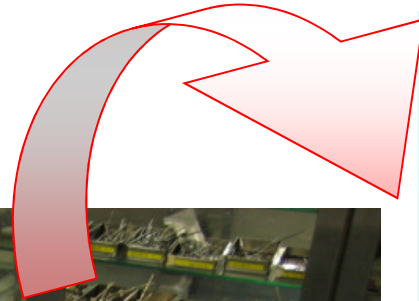


Management error relating to the SSU occurred in 108 out of 5,712 surgical cases (**1.89%**) from April 2007 to March 2008. 58 errors were in assembly (53.7%),

UDI for metal instruments



For preventing assembly error



<input type="button" value="←"/> <input type="button" value="→"/>		1/1	
Set Name		Surgery Big C	
Image			
		Surg. Inst.	Affix
Composition		115	25
No. of Regist.		115	0
No. of Scanned		4	-
Status		Assembling	



RFID tag on the container

Decrease of Errors Relating to SSU

	07.4~08.3	08.4~08.7	08.8~09.1
Errors	108	31	3
Surgeries	5,712	1,913	2,729
Error ratio	1.89%	1.62%	0.11%

07.4~08.3

before introduction of UDI

08.4~08.7

just after introduction

08.8~09.1

after staff accustomed to the system

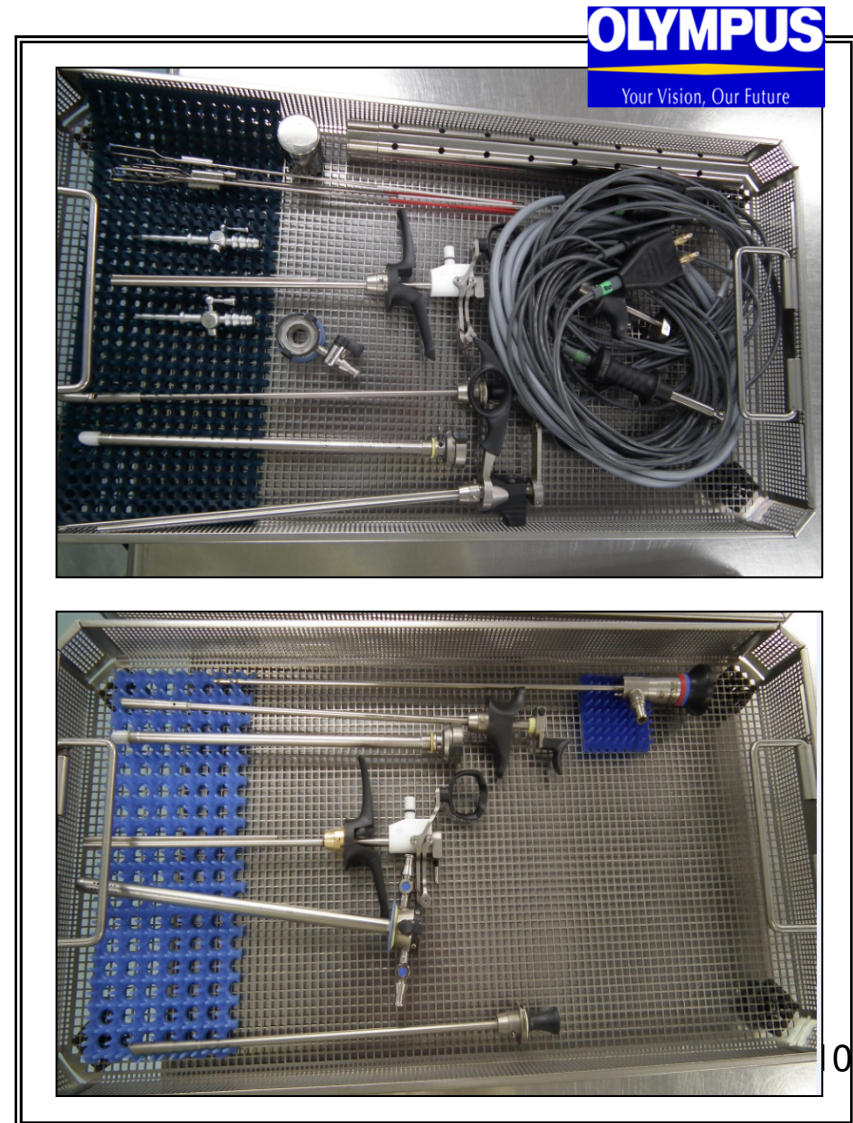


GS1 Healthcare Reference Book 2009/2010.

How to manage the use of surgical endoscopes. How to adopt bar code technologies on them.

	Component name	
Scope	30°	A22002A
Irrigation sheath	26Fr Rotary type	A22026A
Continuous sheath	24Fr	A22040A
With a rotary cock attached		A22051A
Mandolin	24Fr	A22085A
TURis handle (passive)		WA22367A
Optical mandolin	24Fr	A22071A
E scalpel cord		A0393
Bipolar cord		WA00013A
Light guide (with a connector)		WA03200A
Irrigation adaptor		05XW
Irrigation adaptor		063W
Silicone tube		
Silicone tube		
Intermittent sheath		A22041A
Mandolin	24Fr	A22085A
Handle (passive)		WA22067A
Bridge (for 70°)		A22093A
Biopsy forceps		A20713A
Loop electrode	24Fr (30°, S)	WA22305D
Loop electrode	24Fr (30°, S)	WA22305D
Loop electrode	24Fr (30°, M)	WA22306E
Roller electrode		WA22351C
Needle electrode		WA22355C

A set of endoscope is usually composed of more than 20 elements including very fine devices.



New Technology

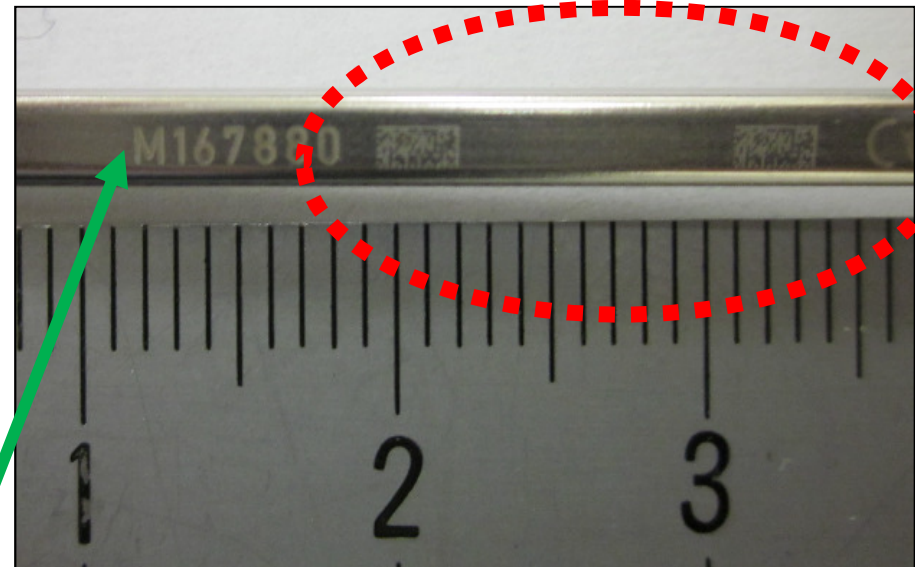
2007

3.0 mm x 3.0 mm



2011

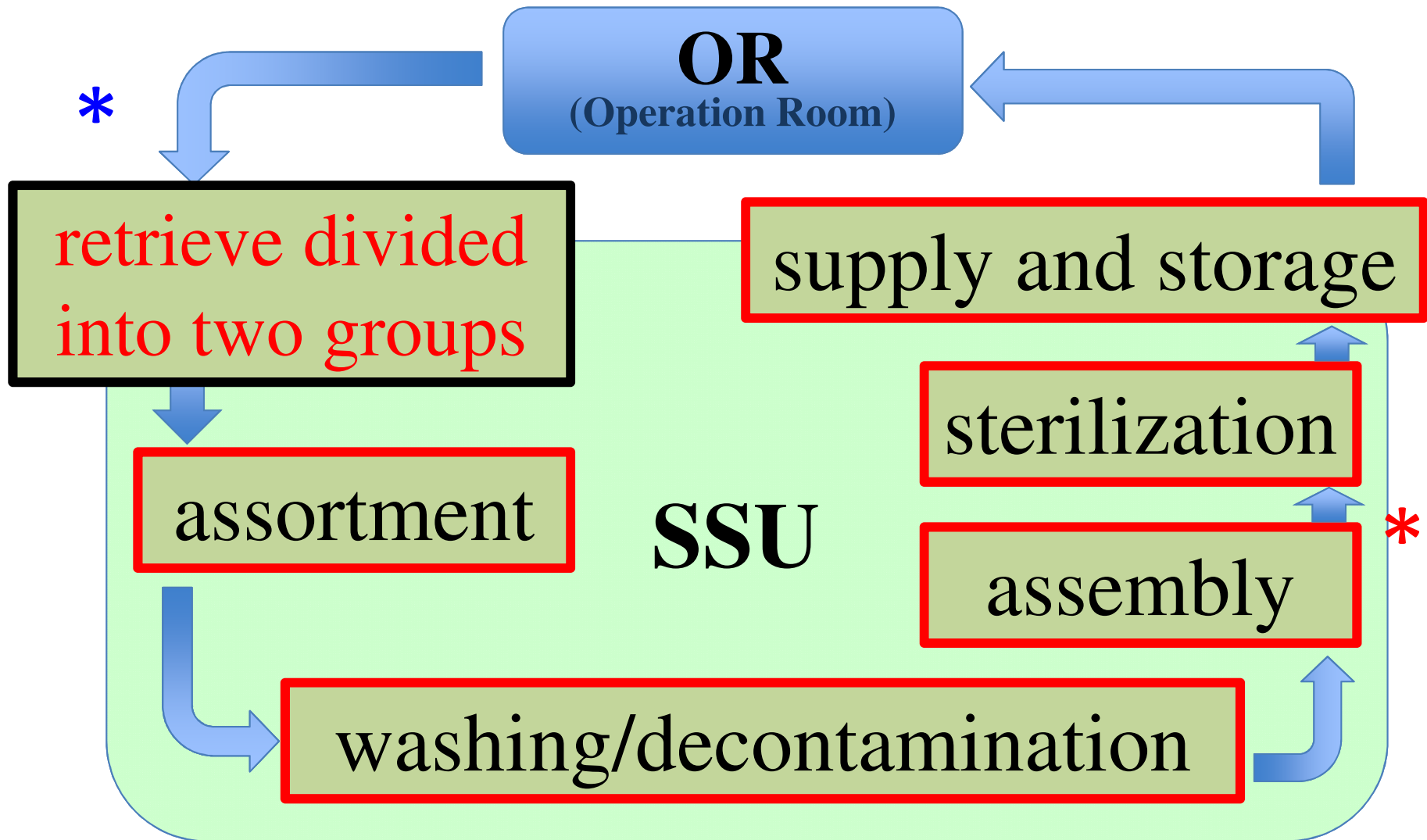
0.95 mm x 2.80 mm



Electrode of endoscope

Work flow of SSU

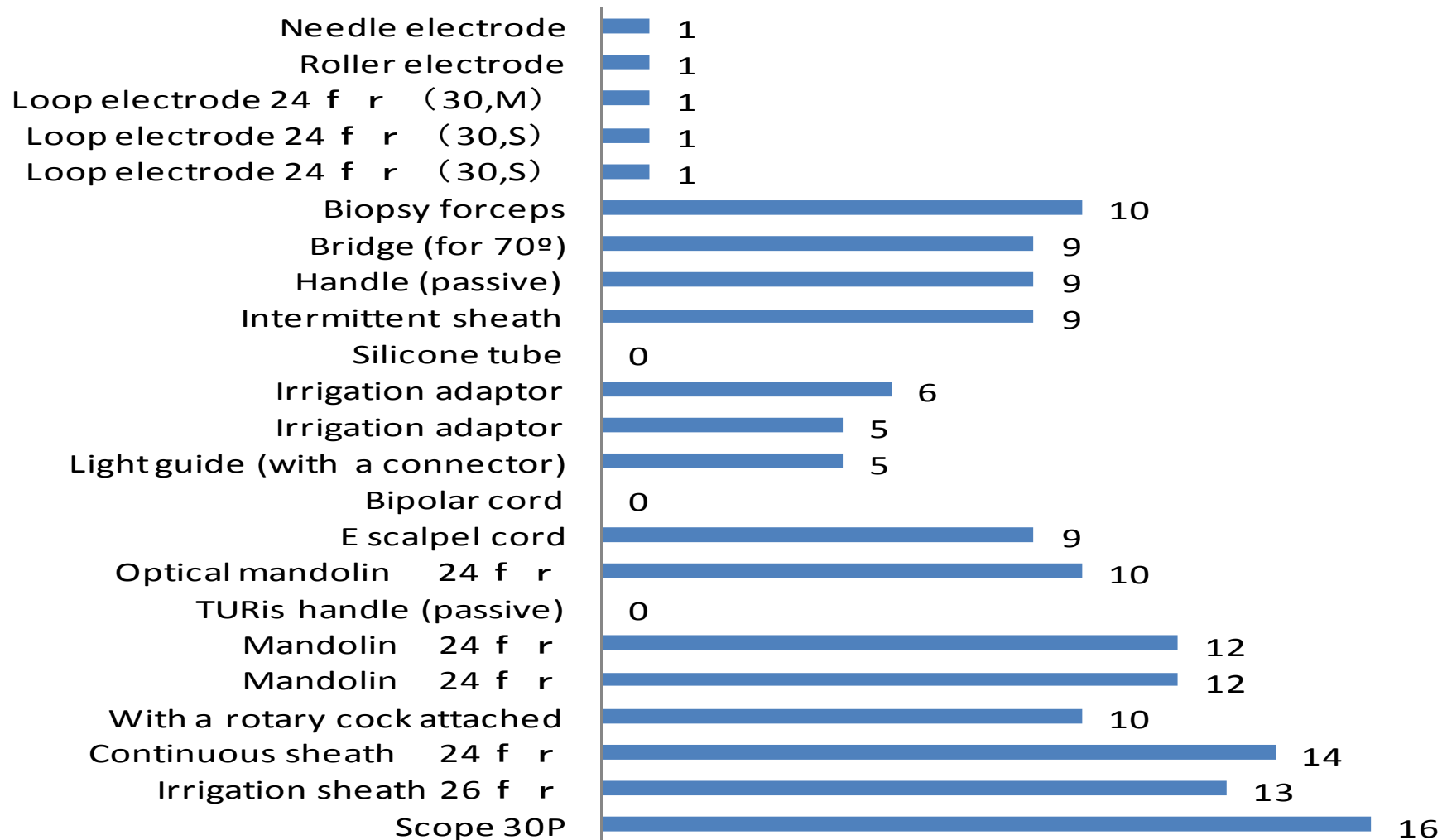
SSU: sterile supply unit



Frequency of the use of each element



■ Frequency of the use of each element



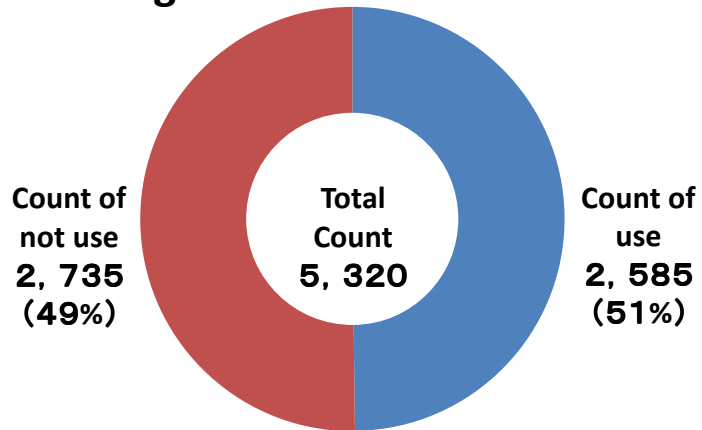
Brief history of our trials

- **First trial (2008~)**
 - Introduction of bar code technologies in SSU at the process of assembly for metal instruments
- **Second trial (2011~)**
 - Development of very small-sized direct part marking applicable to the element of surgical endoscopy
 - Introduction of bar code reading at the process of retrieve in addition to assembly
- **Third trial (2013~)**
 - Implementation of of bar code reading at the process of assembly and retrieve for all metal instruments



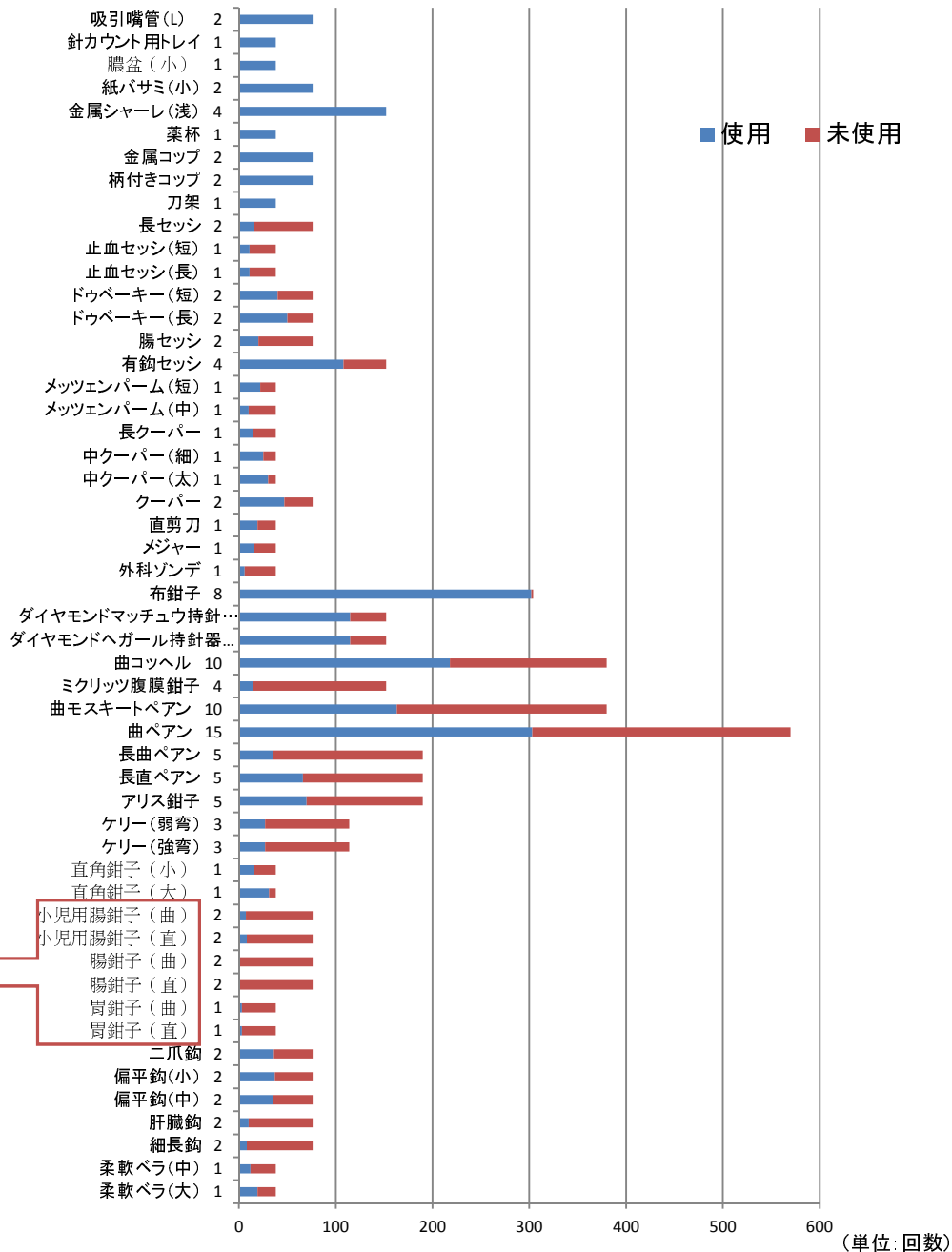
- Laparotomy Set (large) of General Surgery E
- July 2014~Oct. 2014
- Frequency of Use : 30 times
- Composition: 140 metal instruments
- Instruments used : 51 %
- Instruments not used : 49 %

Average of "use" and "not use"



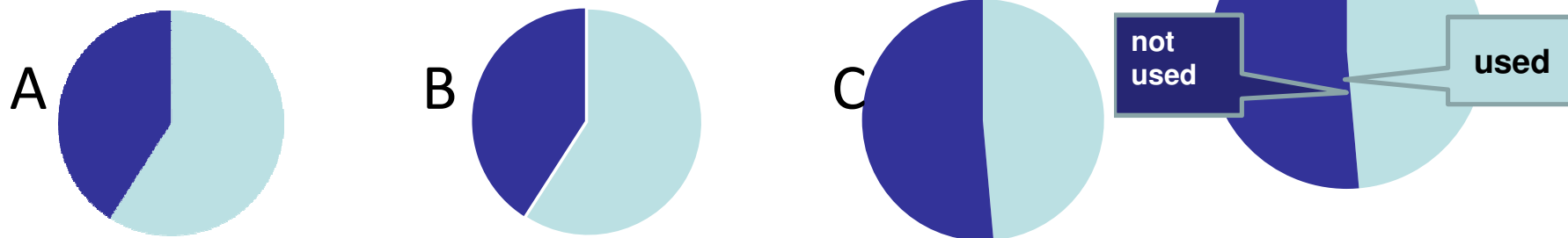
Withdrawn from Set since Nov. 2014

- ① 小児用腸鉗子(直) 2
 - ② 小児用腸鉗子(曲) 2
 - ③ 腸鉗子(直) 2
 - ④ 腸鉗子(曲) 2
 - ⑤ 胃鉗子(直) 1
 - ⑥ 胃鉗子(曲) 1
- total 10本



Status of Usage of Metal Instruments by Container

Laparotomy Set of Gynecology



Laparotomy Set (middle) of General Surgery

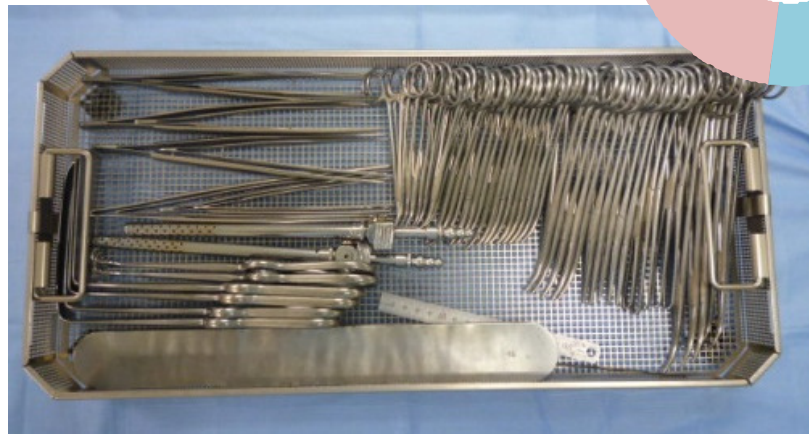
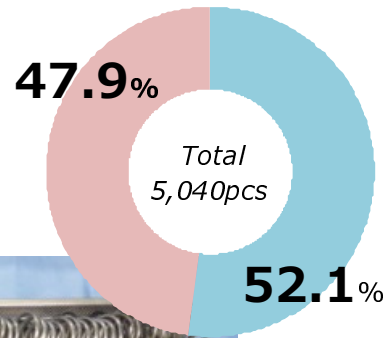


Laparotomy Set (large) of General Surgery



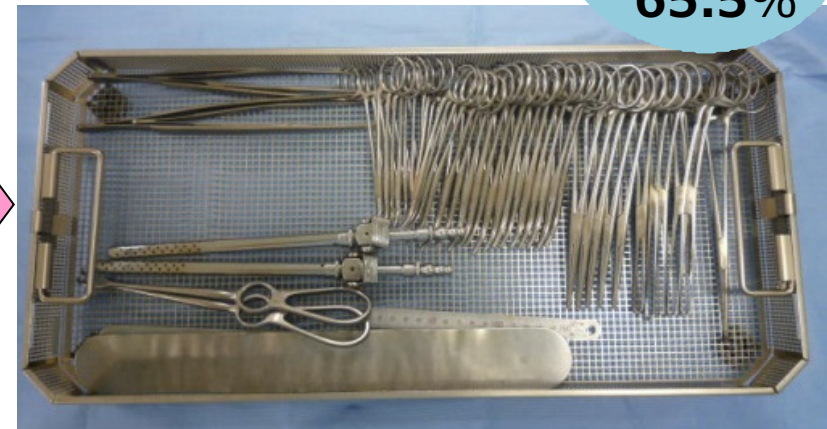
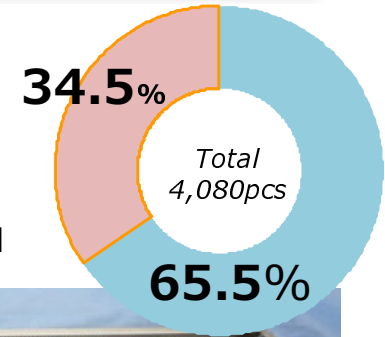
Strive to downsize the set of instruments

Surgical laparotomy
(large)



Number of components
126pcs

Average usage level



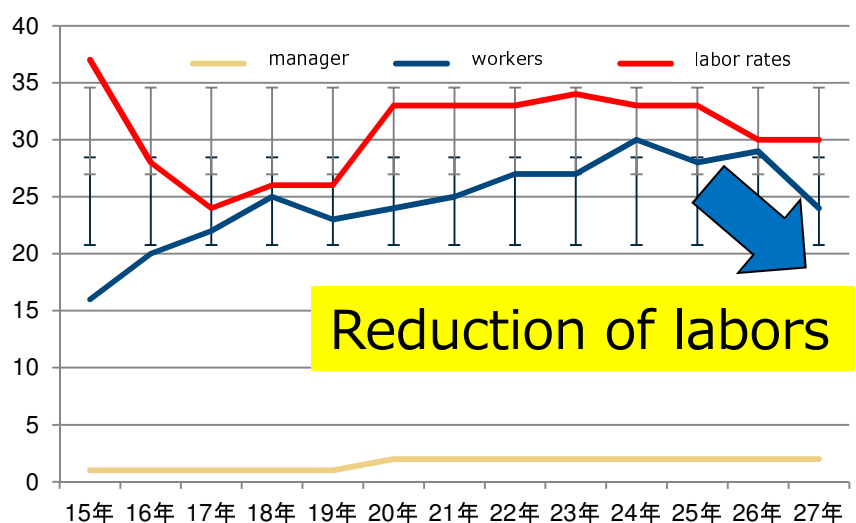
Number of components
98pcs

It realized to reduce the number of devices 30% or more.

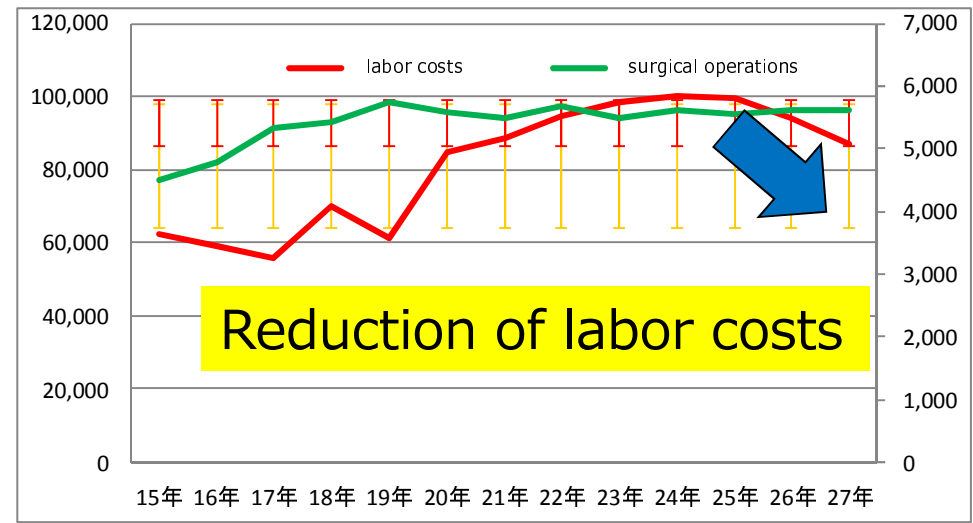
Introduction effect of traceability system

- Cost optimization based on work data
 - Reduction of working hours for washing and assembly

>> Reduction of labor costs



Trend in labor rates and number of workers



Trend in labor costs and number of surgical operations

Enhancing the efficiency of hospital management.

Tracking of the event history

- When the surgery started and ended
- When and by whom instruments were retrieved and washed.
- **Which instruments are in each container**
- **How often instruments are being used**
- **When and which instruments have been repaired**
- When, how and by whom the container were set, sterilized and stored
- In which patient the instruments were used (AIDS, Creutzfeld-Jakob disease, etc.)



Thank you for your kind attention.

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Former Chief Executive, NTT Medical Center Tokyo**