

OLYMPUS Investor Day 2018 Business Reforms and Innovation Technologies

Haruo Ogawa
Chief Technology Officer and
Head of R&D Group
Olympus Corporation
September 5, 2018

Disclaimers

- The financial forecasts and other material in this document are based on judgements and assumptions derived from currently available information. Actual results may differ significantly from targets, being subject to change due to factors such as the uncertainties implicit in these judgements and assumptions and due to future changes in business operations and circumstances inside and outside the company.
- Furthermore, this information is subject to change without notice. Accordingly, use of this information and this document should be at the discretion of the user and done with reference to information obtained by other means.
- This document contains information about products that have not yet been approved in some countries including Japan (including products under development). This information is not intended for promotional or medical advice use. Rather, it is provided to give examples of technology development by Olympus and no guarantees are made about the future sale of such products.
- Olympus accepts no responsibility for any losses that arise from use of the information in this document.

Agenda

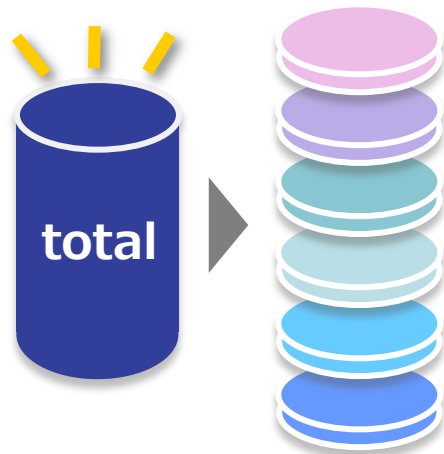
- **Progress of Business Process Reengineering (BPR)**
- **Innovation activities to react our risks**
- **OLYMPUS X (Cross) Innovation**

1. Progress of BPR : R&D Productivity Improvement

Choosing development themes based on ROI etc. / Proper resource allocation

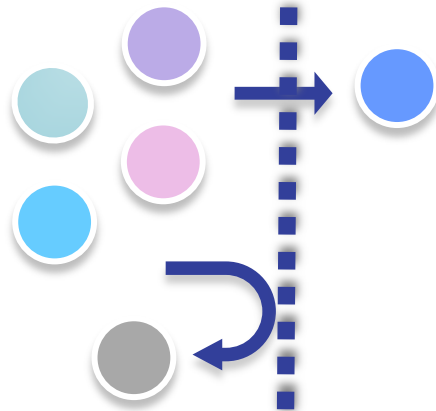
1

Determine R&D budgets in top-down manner



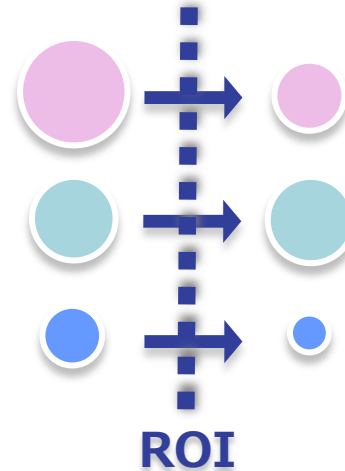
2

Stringently manage conditions for selecting R&D themes based on stage-gate process



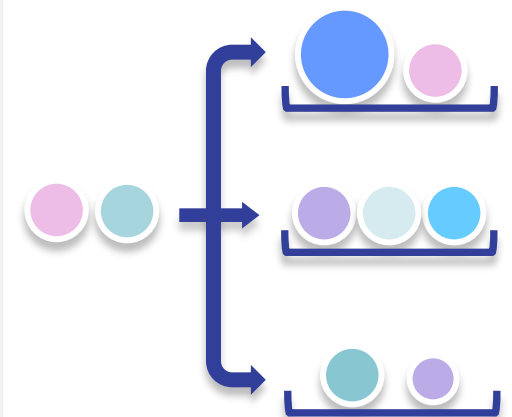
3

Optimize R&D expenditures for each theme



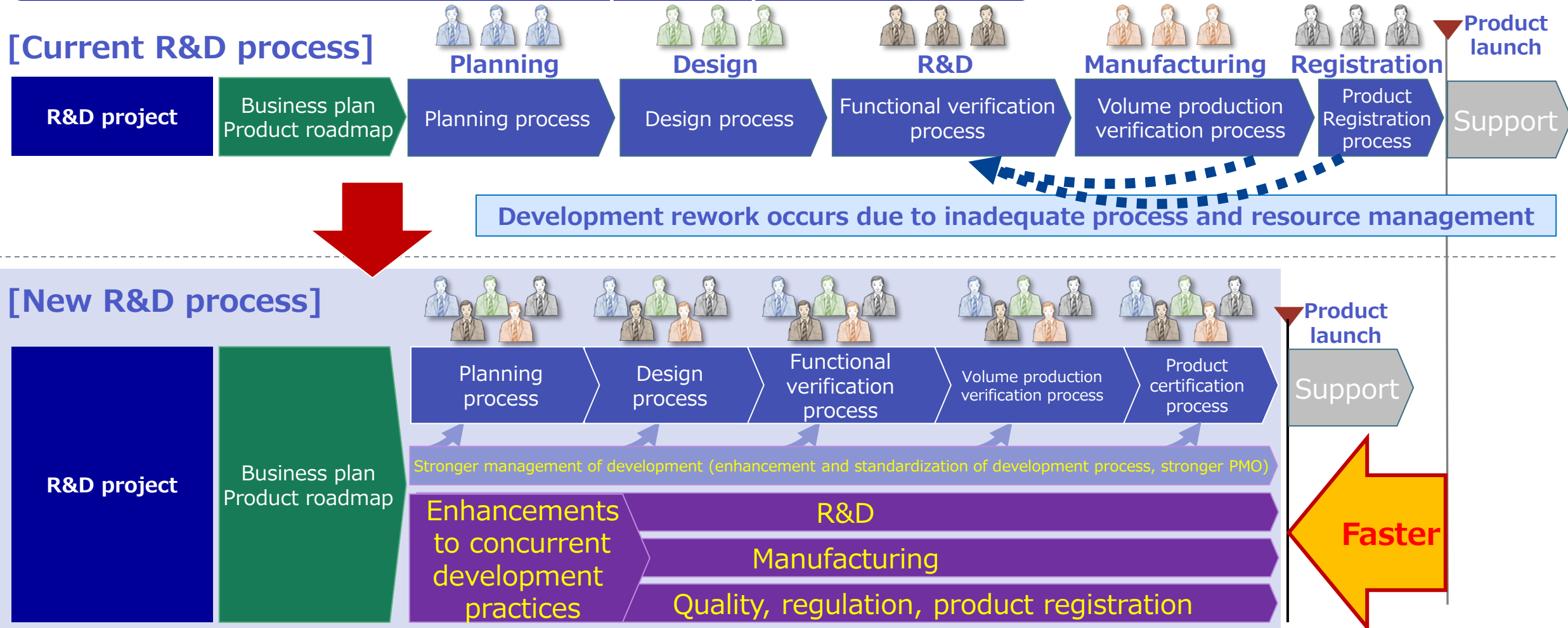
4

Evaluate priority of each theme



1. Progress of BPR : R&D Productivity Improvement

Faster development through revision and enhancement of development process



1. Progress of BPR: Surgical Energy Devices Examples of New Product Development

Two practices from the imaging business to be used in the development of disposable therapy devices

	Reusable products	Disposable products
Q: Quality	Emphasis on quality to withstand repeated use Emphasis on durability and suitability for reprocessing	Ensure quality appropriate to single-use product Ensure safe disposal as medical waste
C: Cost, manufacturing practice	Emphasis on added value and skills (craftsmanship)	Emphasis on cost, use of automatic assembly for volume production
D: Delivery	Emphasis on quality, establishment of product platforms for medium and long term	Short delivery times, time-critical product development

1. Progress of BPR: Surgical Energy Devices

– Examples of New Product Development

Two practices from the imaging business to be used in the development of disposable therapy devices

This is how we do it here
(Imaging business developer)



I'll look into it straight away
(Therapy device developer)

Target 1: Reduce time and cost to produce final prototype

(1) Initiatives for improving design efficiency

- [1] Improve design infrastructure
- [2] Adopt design quality delivery (DQD)
- [3] Improve how drawings are annotated
- [4] Greater transparency in drawing schedule management

● **30% shorter lead time**

Target 2: Eliminate rework by reviewing product standards of final prototype

(2) Initiatives for eliminating rework in review

- [5] Adopt interim characteristics charts
- [6] Start using problem reports

● **40% reduction in prototype cost**

2. Innovation activities to react our risks

Establishing a Technology Innovation Office
under the direct jurisdiction of the CTO
(The organization consists mainly of several “Fellows”
under the new HR system.)

Extraction of
innovation technologies

Extraction of
challenges and solutions

Promotion of
open innovations and
academic-industrial alliance

Risk analysis

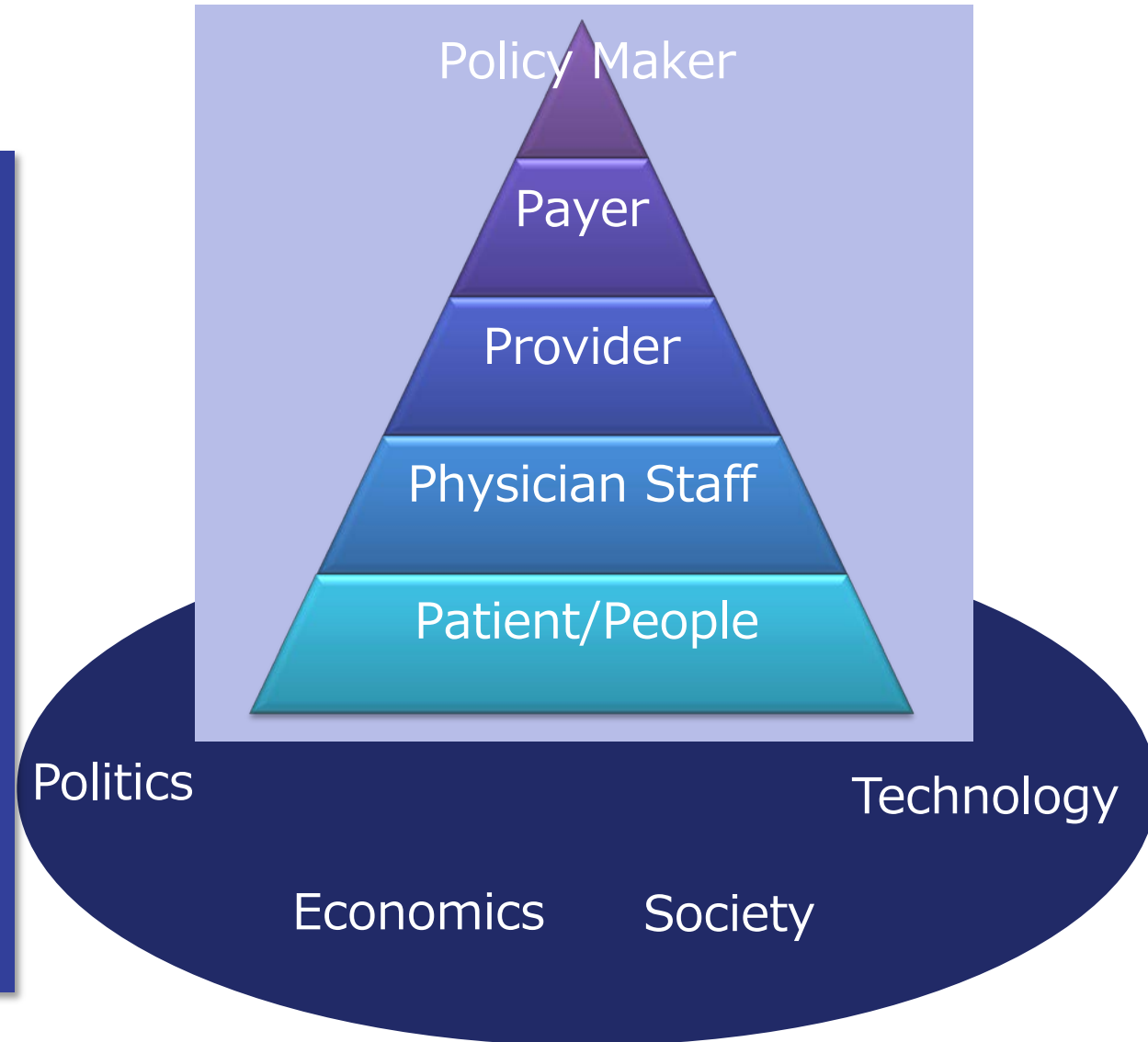
Provision of opinions
to the top management



2. Innovation activities to react our risks

Concrete Efforts

- 1) environmental analyses :
PEST / 5P analyze
- 2) Extract innovation tech.
- 3) Risk analysis
- 4) Extract our Challenges /prioritize
- 5) Establish Strategic Option
- 6) Establish Action Items
- 7) CXO level decision
- 8) Call for alliance or open innovation





OLYMPUS X^{CROSS} INNOVATION

ANSERS BEYOND SIGHT

SUSTAINABLE DEVELOPMENT GOALS

17 GOALS TO TRANSFORM OUR WORLD



Pick up the “GOOD HEALTH AND WELL-BEING” and “SUSTAINABLE CITIES AND COMMUNITIES”

Three Frameworks

**[1] Future of medical testing to
protect way of life**

- Intelligent Sensing

[2] Future of surgery

- Information Rich

[3] Future of endoscopic examination

- Workflow



Targeted innovation

Future of Surgery

**Kazuhiro Gono, Chief Fellow
Technology Innovation Office
Olympus Corporation**

Medical
services
Quantity



Medical
services
Value

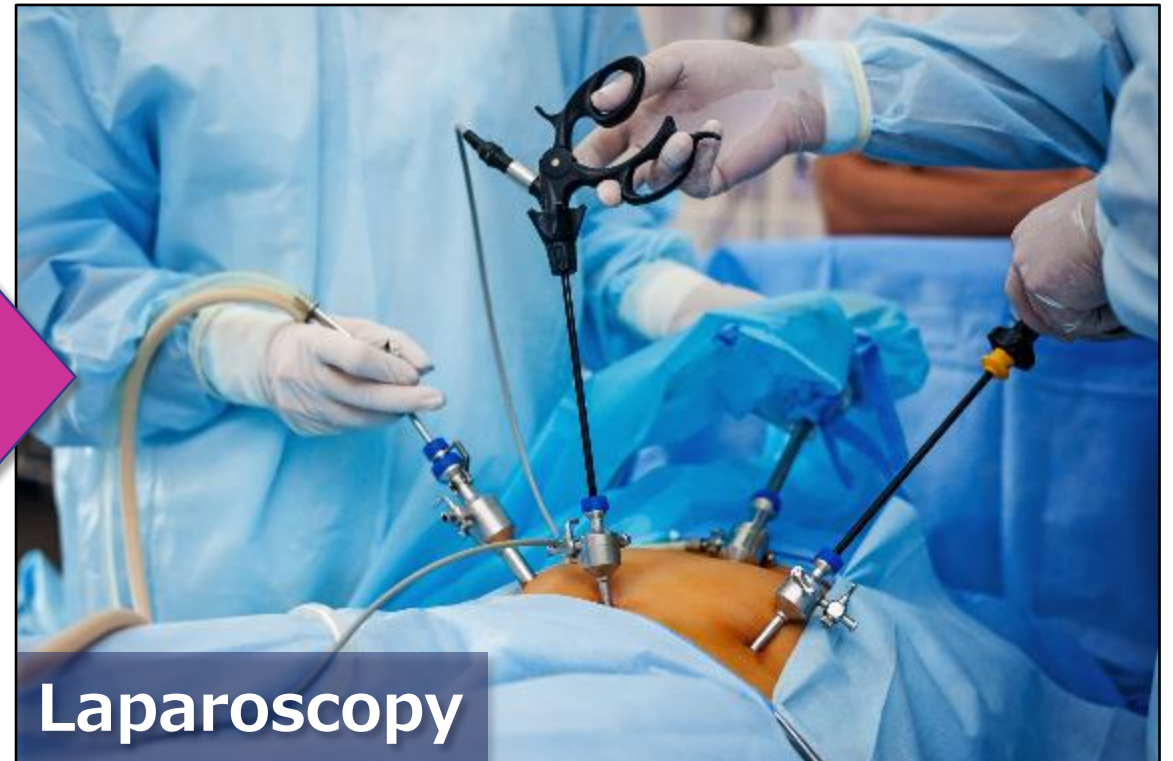


Surgery Innovation 1

Making laparoscopy less invasive than Open surgery



Open surgery



Laparoscopy

Surgery Innovation 2

Advances in devices

Imaging
Surgical imaging



Surgery
Surgical energy devices



Surgery Innovation 3

Integration and robotics

Productivity



Precision



Surgery Innovation 4

Connectivity and information support

Information Rich

A large dark blue circle with a pink border containing the white text "AI". The background features a network of white icons connected by lines, including a heart with a pulse line, a first aid kit, test tubes, a clipboard, a pill, a hospital building, a nurse's cap, a computer monitor with a pulse line, a syringe, a pill, and a person with a stethoscope. The background is a blurred image of a surgeon in a blue scrub cap.

AI

A large dark blue circle with a pink border containing the white text "IoT". The background features a network of white icons connected by lines, including a heart with a pulse line, a first aid kit, test tubes, a clipboard, a pill, a hospital building, a nurse's cap, a computer monitor with a pulse line, a syringe, a pill, and a person with a stethoscope. The background is a blurred image of a surgeon in a blue scrub cap.

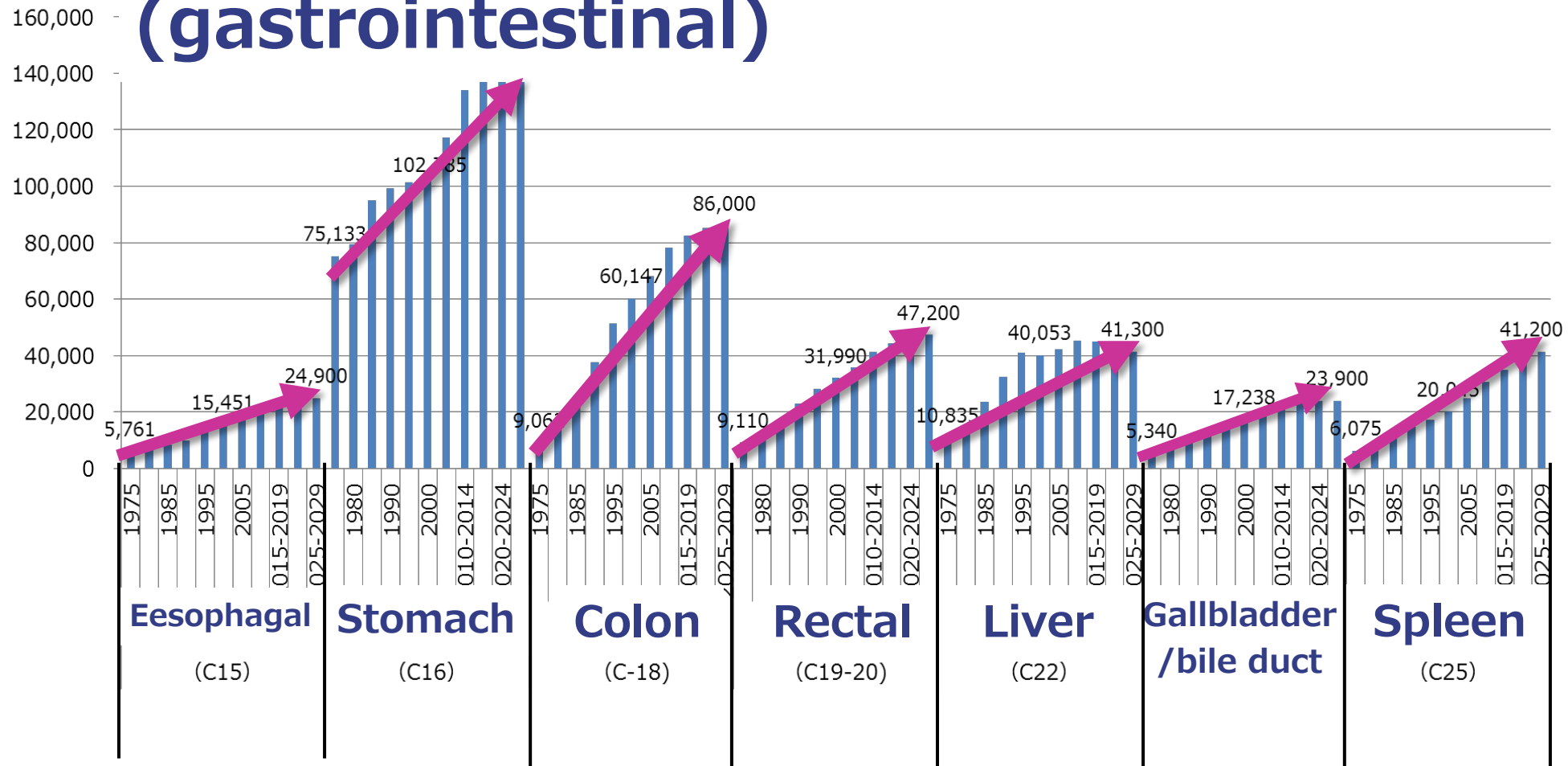
IoT

Targeted innovation

Future of Endoscopic Examination

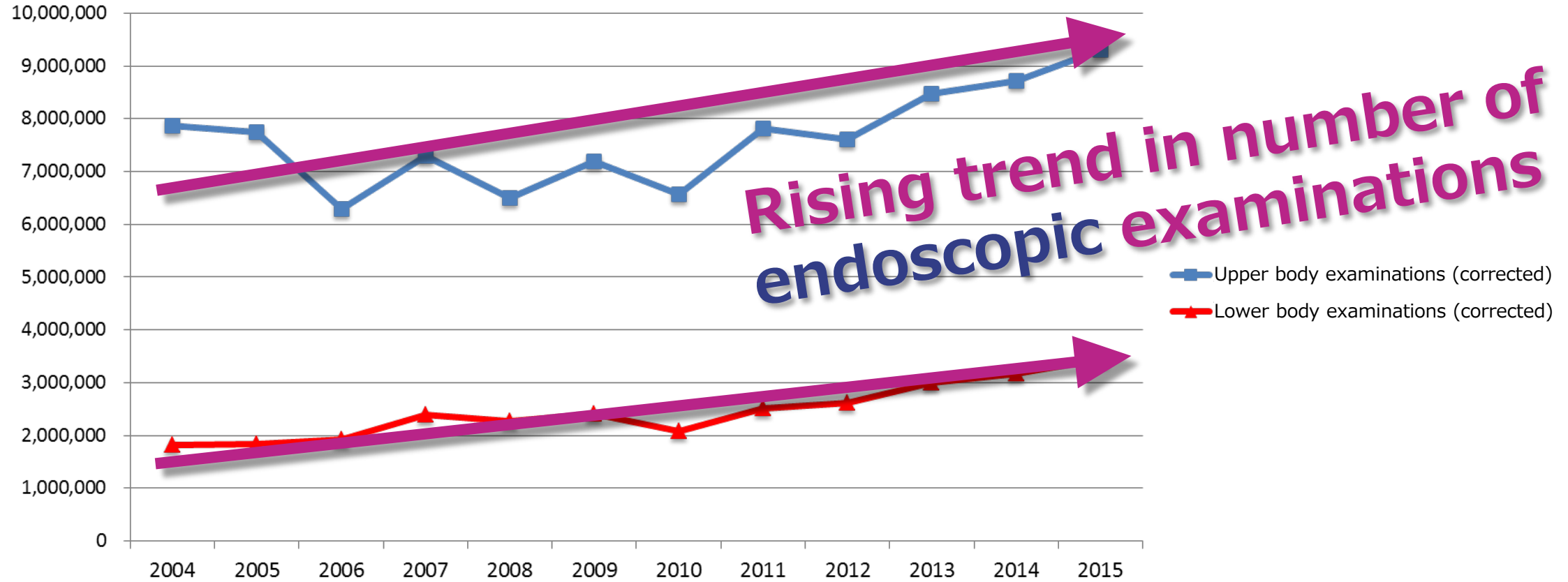
**Tetsuo Nonami, Chief Fellow
Technology Innovation Office
Olympus Corporation**

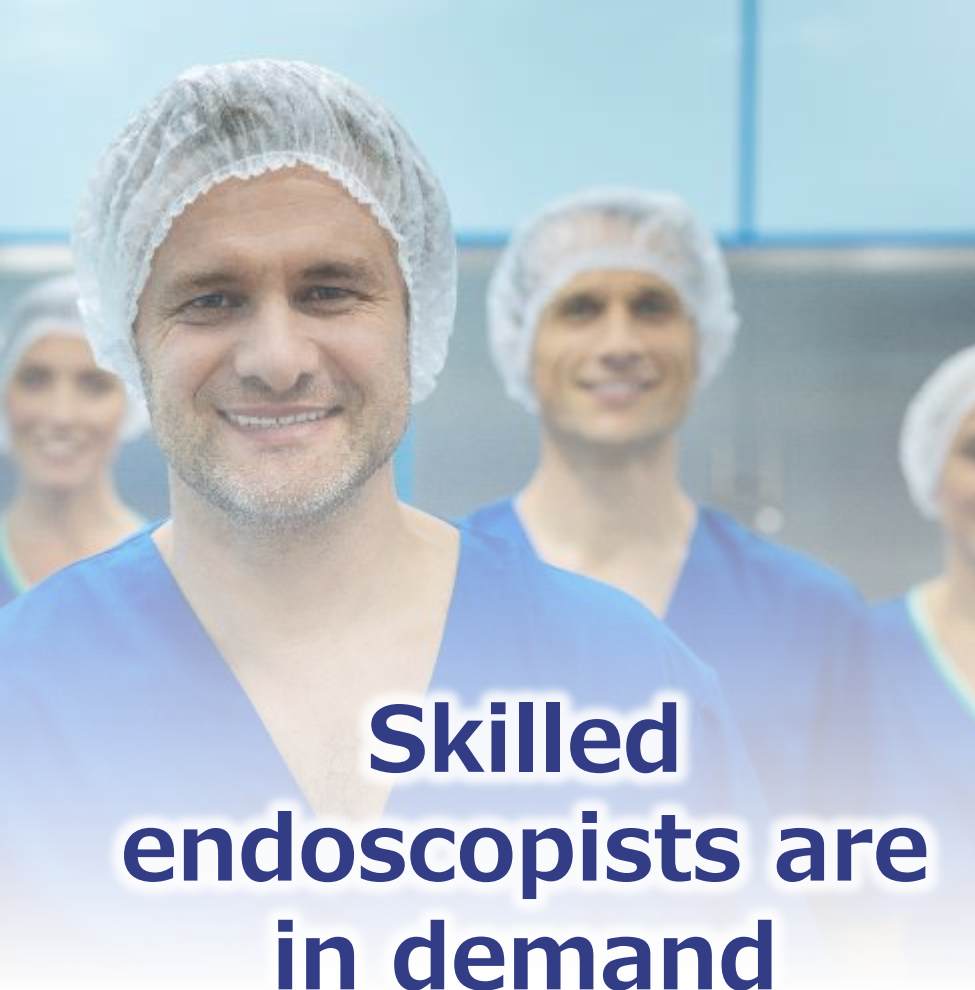
Projected cancer cases up to 2029 (gastrointestinal)



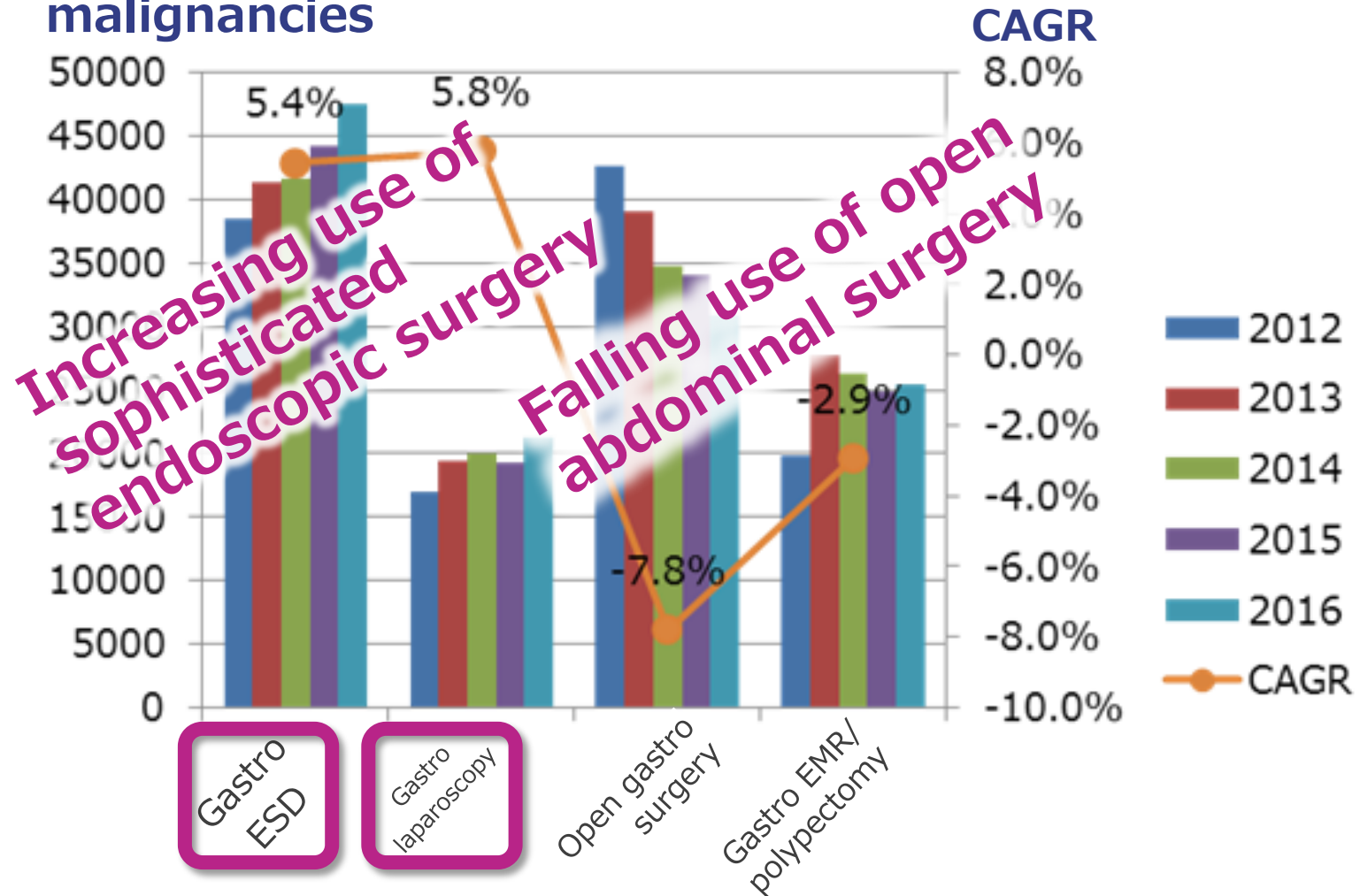
Source: Cancer information service, reported cases and statistics (1975–2010)
cancer_incidence (1975-2012), 2010–2029 cancer_prediction (2010-2029)

Number of gastrointestinal endoscopic examinations in Japan (conducted under health insurance)



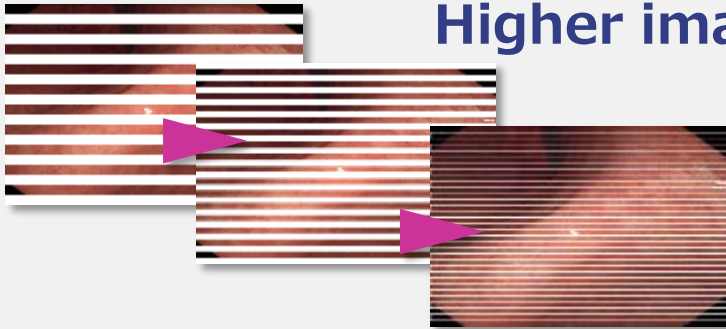


No. of surgical treatments for gastrointestinal malignancies

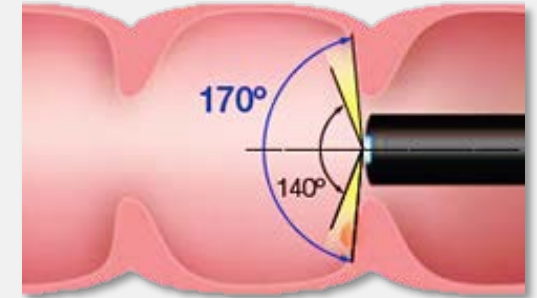


Advances in endoscopy

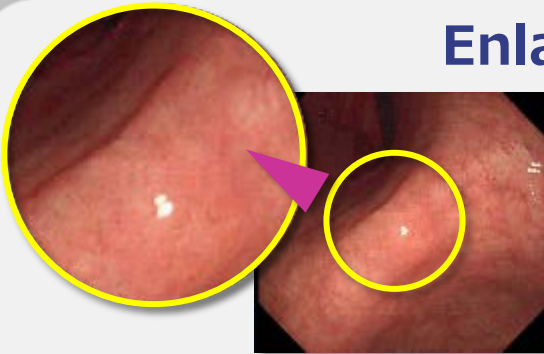
Higher image definition



Wide angle



Enlargement



Passive bending

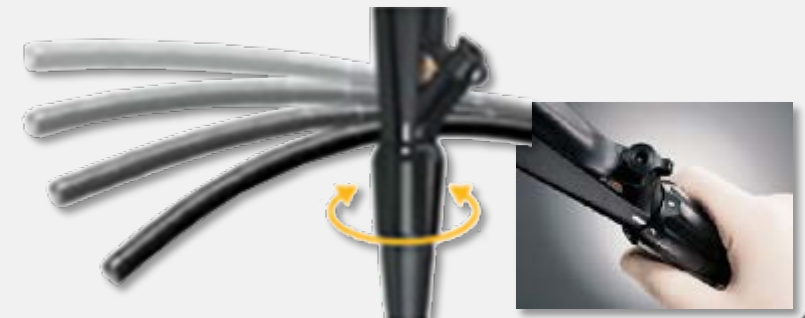


NBI



Images provided by Dr. Yasushi Sano of Sano Hospital

Variable stiffness



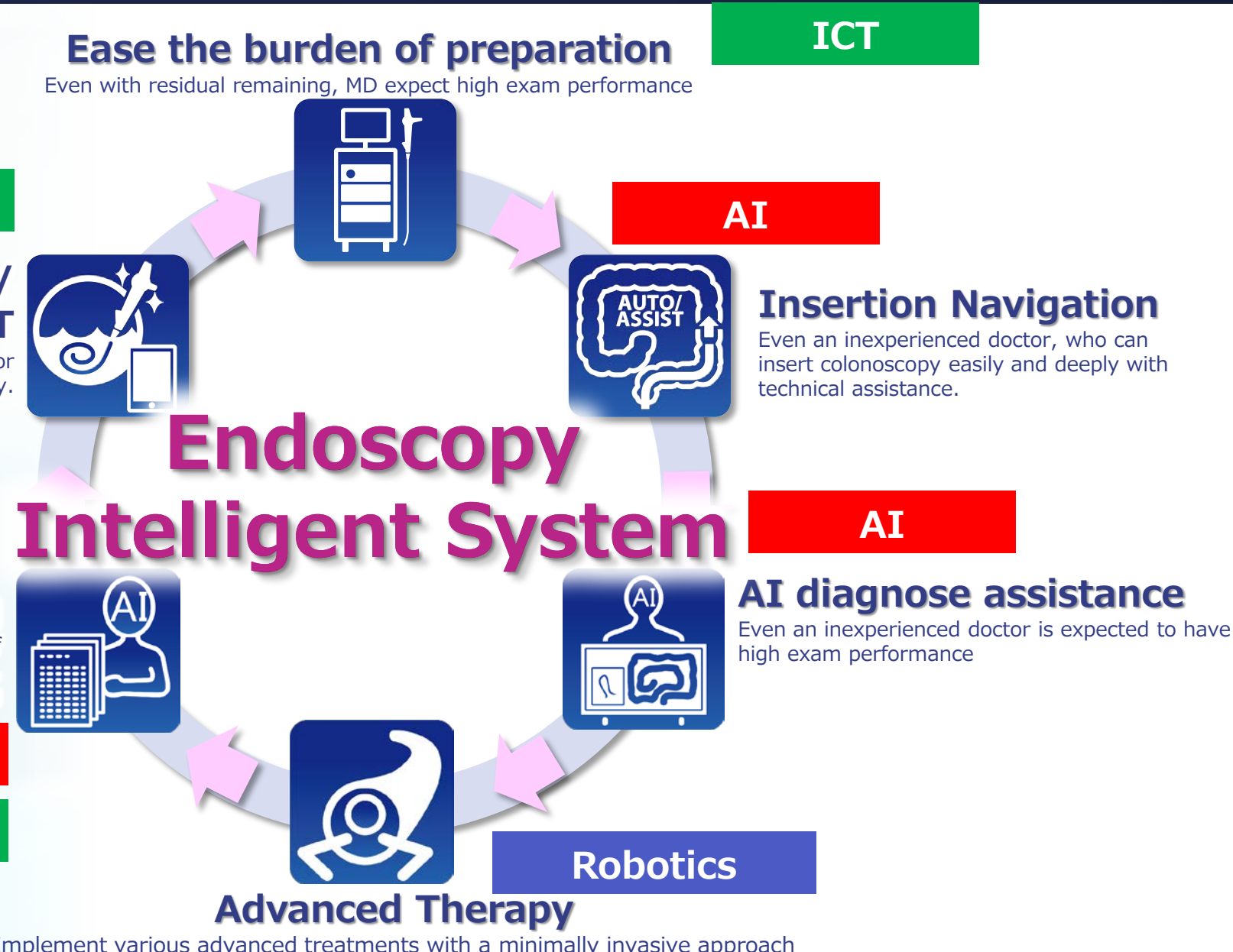


The FDA has issued safety communications about the risk of multidrug-resistant bacteria transmission via endoscopes.

In Japan, the Ministry of Health, Labor and Welfare has issued a notice based on the cases in the USA.

- As the population ages, the number of **endoscopic examination/ treatment is growing.**
- Global cost pressure: **Efficient endoscopic exam is required.**
- Demand of **skilled endoscope physician is growing.**
- **High demand of reaction for infection risk via the endoscope.**





OLYMPUS
