BRING THE STERILIZATION SCIENCE TO THE NEXT LEVEL
將滅菌科學提升到新水平
26TH WORLD STERILIZATION CONGRESS
3RD TO 6TH DECEMBER 2025 | HONG KONG ASIAWORLD-EXPO 亞洲國際博覽館

# The Importance of Quality Improvement Projects in CSSD

Prof. Seto Wing Hong

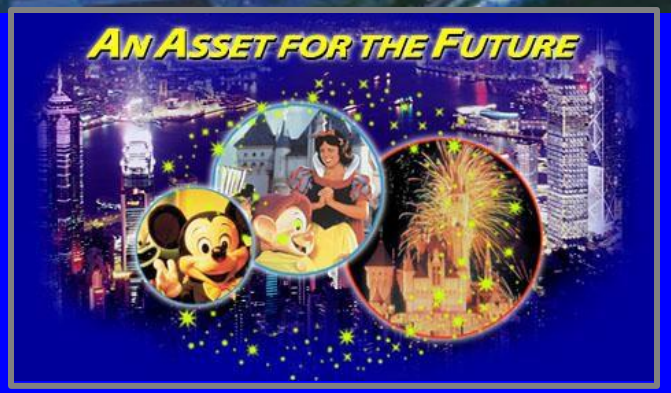
Director,

WHO Collaborating Center,

University of Hong Kong.

HKU Med LKS Faculty of Medicine
School of Public Health
香港大學公共衛生學院
WHO Collaborating Centre for Infectious Disease Epidemiology and Control

# 歡迎....

# First Avian Flu case in Hong Kong, 2005

# Do visit University of Hong Kong

香 港 大 學
THE UNIVERSITY OF HONG KONG

1937


**1998 – APSIC initiated in Hong Kong with representatives from 16 Asian Countries at Robert Black College, HKU**

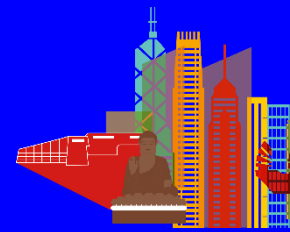

## Robert Black College

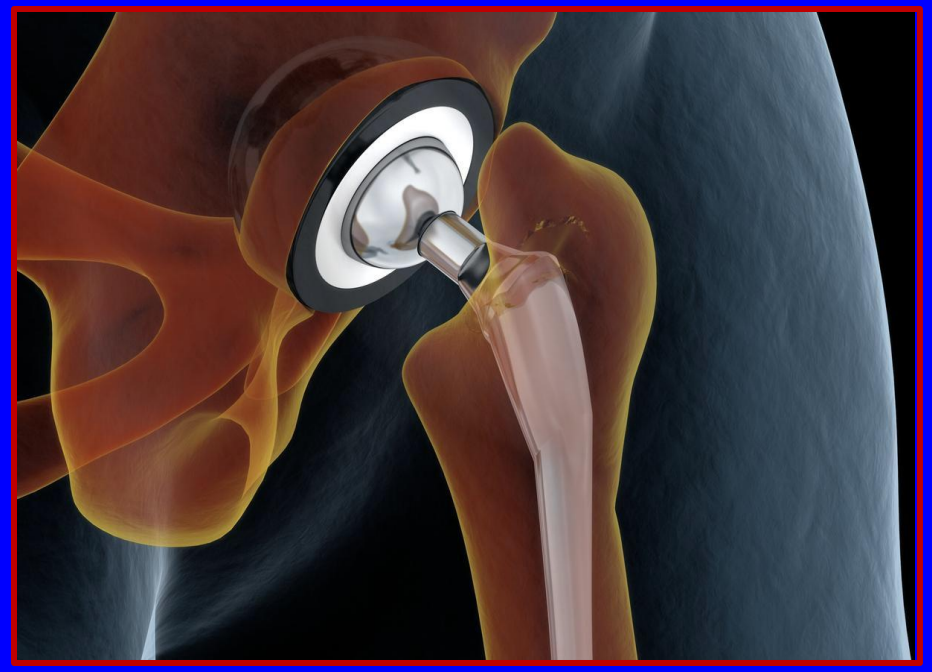


## The SWIRE Lounge

# The Interest and Initiation of QIP projects

# in Implants Surgery – the reasons behind….





Total joint replacement is an amazing advancement in modern medicine.

# Joint Replacement Infection

A small number of patients undergoing hip or knee replacement (about **1 in 100, or 1%) may develop an infection** after the operation.

- Infections occur in the wound or deep around the artificial implants.
- Develop during your hospital stay or after you go home.
- Joint replacement infections can even occur years after your surgery.

February 2023

Pirisi et al. BMC Infectious Diseases (2020) 20:337
https://doi.org/10.1186/s12879-020-05065-9

BMC Infectious Diseases

RESEARCH ARTICLE Open Access

# Prevalence and burden of orthopaedic implantable-device infections in Italy: a hospital-based national study

Luca Pirisi[1], Federico Pennestrì[2*], Marco Viganò[2] and Giuseppe Banfi[2,3]

**Table 1** Prevalence of infections per type of procedure (2014)

| Macro category | Total | With infection | Prevalence (%) |
|---|---|---|---|
| 1. Primary hip replacement | 89,242 | 37 | 0.04% |
| 2. Hip replacement revision | 7292 | 1203 | 16.50% |
| 3. Other hip procedures | 1000 | 0 | 0.00% |
| 4. Primary knee replacement | 61,923 | 42 | 0.07% |
| 5. Knee replacement revision | 3017 | 739 | 24.49% |
| 6. Other knee procedures | 115 | 0 | 0.00% |
| 7. Lower limb implantations (femur, tibia, feet) | 99,189 | 20 | 0.02% |
| 8. Lower limb revisions (femur, tibia, feet) | 27,492 | 448 | 1.63% |
| 9. Other lower limb procedures | 167 | 0 | 0.00% |
| 10. Higher limb implantations (shoulder, arm, hand) | 7900 | 18 | 0.23% |
| 11. Higher limb revisions (shoulder, arm, hand) | 12,540 | 138 | 1.10% |
| 12. Other higher limb procedures | 13,313 | 7 | 0.05% |
| 13. Generic musculoskeletal implantation | 156 | 99 | 63.46% |
| 14. Generic musculoskeletal removal | 163 | 65 | 39.88% |
| 15. Other orthopaedic procedures | 10,449 | 503 | 4.81% |
| 16. General procedures associated | 2635 | 1895 | 71.92% |
| Total | **336,593** | **5214** | **1.55%** |

# Surgical Treatment

AAOS
American Academy of Orthopaedic Surgeons

- Infections gaining **deep access** to the artificial joint almost **always require surgical treatment** (single procedure or staged).
- **Late infections** (those that occur months to years after the joint replacement surgery) **always require a two staged surgery**.
- Patients who undergo staged surgery typically **need a spacer** and at least **6 weeks of IV antibiotics**, before a new artificial joint can be implanted.
- Stage two is revision surgery **implanting new joint components**.

# Prevention

- Antibiotics prophylaxis before and after surgery.
- Short operating time and minimal operating room traffic.
- Use of strict sterile techniques and sterilization of instruments.
- Preoperative nasal screening for bacterial colonization.
- Preoperative chlorhexidine wash.
- Long-term antibiotics prophylaxis.

Care is taken to ensure the **operating site is sterile**, the **instruments have been appropriately sterilized** and **not exposed to any contamination**, and the **implants are packaged** to ensure their sterility

# Asia Implant Load Monitoring Survey and Results


## Prof.  Seto Wing Hong

Director, WHO Collaborating Center University of Hong Kong


June 22, 2023

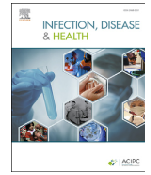
# *517* Respondents from *10 countries*

- ANZ
- India
- Indonesia
- Japan
- Korea
- Malaysia
- Philippines
- Singapore
- Thailand
- Vietnam

Available online at www.sciencedirect.com

ScienceDirect

journal homepage: http://www.journals.elsevier.com/infection-disease-and-health/




Research paper

## Surgical implant sterilization in the Asia–Pacific region: A survey of current practices

**Wing Hong Seto***, **Patricia Tai Yin Ching**

*School of Public Health, University of Hong Kong, Hong Kong, China*

Received 12 September 2024; received in revised form 25 February 2025; accepted 25 February 2025

**KEYWORDS**
Equipment sterilization;
Surgical implants;
Process challenge devices;
Biological and chemical indicators;
Immediate use steam sterilization

**Abstract** *Background:* Healthcare-acquired infections are frequently linked to contaminated medical devices such as inadequately sterilized surgical devices, especially surgical implants. To prevent inadequate medical equipment sterilization, various health organizations (eg, World Health Organization) have provided guidance on best practices related to the sterilization monitoring practices of implant-containing loads.
*Methods:* A survey of sterilization practices, including practices related to monitoring implant-containing loads, at facilities from seven countries in the Western Pacific Region (WPR) and three countries in the Southeast Asia Region (SEAR) was conducted to assess alignment with health organization guidelines and to elucidate factors impacting sterilization practices.
*Results:* Workload distribution was selected by 47 % of respondents when asked what had changed over the past year. Overall, 21 % of respondents were not monitoring each implant-containing load with a PCD (Process Challenge Device) containing a BI (Biological Indicator) with a Type-5 Chemical Indicator (CI), and 27 % of respondents had seen an implant load released prior to receiving BI results. Twenty-nine percent (29 %) of respondents had no placement guide for CIs when used in multi-level trays. Lastly, 43 % of respondents routinely performed immediate use system sterilization (IUSS), which commonly involved loaner instruments.
*Conclusions:* The results of this survey study indicate that inappropriate PCD usage in implant loads and frequent IUSS are challenges for some facilities in SEAR and WPR countries. Regional collaboration to produce consensus documents and educational programs may help develop strategies to standardize practice of implant load monitoring and loaner instruments. Thus, a consortium to initiate education programs for SEAR and WPR countries would be worthwhile.


**Highlights**

- Workload distribution and processing/handoff time were biggest changes from April 2022 to April 2023.

* Corresponding author.
*E-mail addresses:* whseto@hku.hk (W.H. Seto), chingpty@yahoo.com.hk (P.T.Y. Ching).

https://doi.org/10.1016/j.idh.2025.02.006
2468-0451/

Please cite this article as: W.H. Seto and P.T.Y. Ching, Surgical implant sterilization in the Asia–Pacific region: A survey of current practices, Infection, Disease & Health, https://doi.org/10.1016/j.idh.2025.02.006

PCD + BI

Written policy for recall

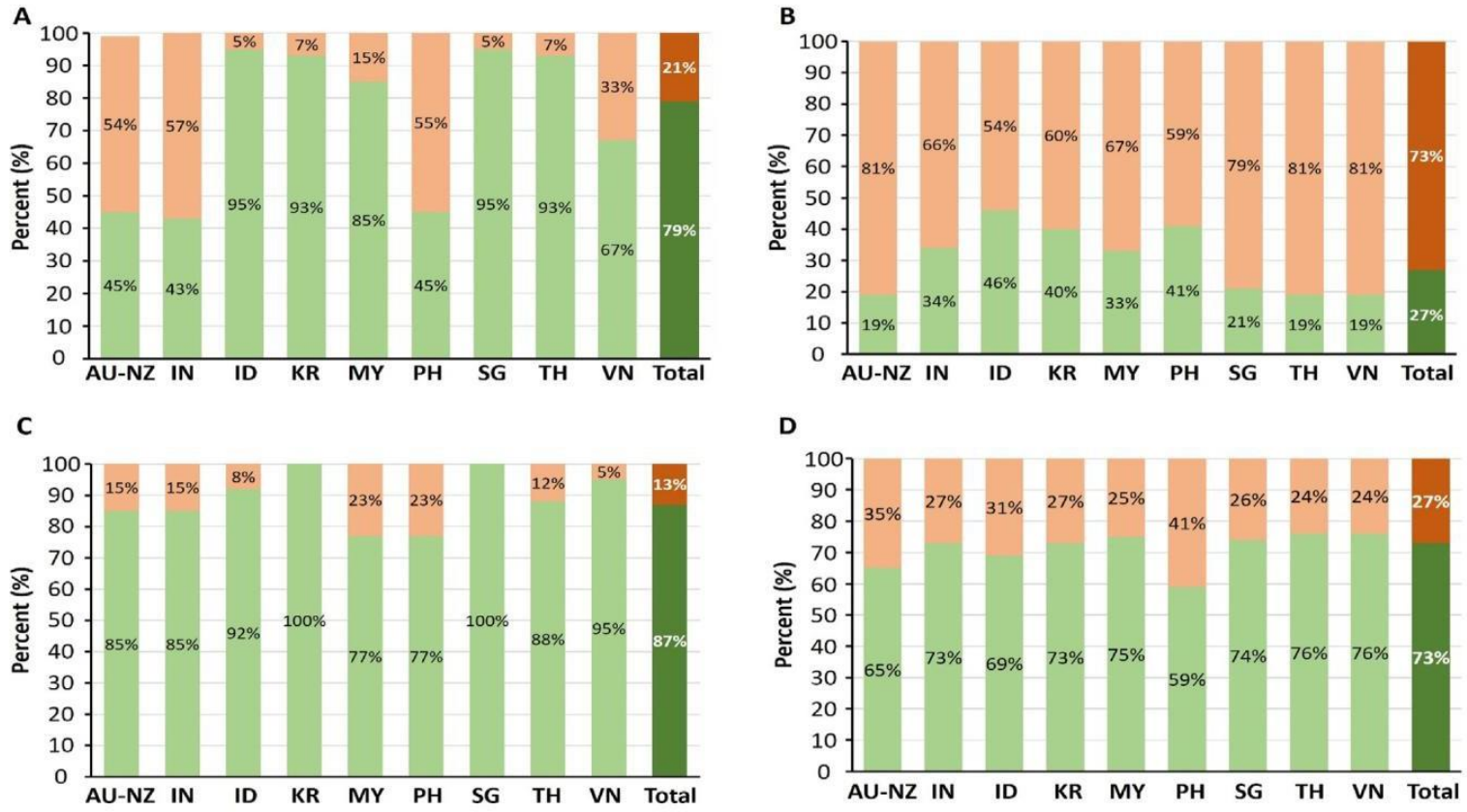



**Fig. 2 Responses Related to Implant-Containing Loads.** Bar graphs depicting **(A)** the percentage of respondents that indicated whether each implant-containing load was monitored with a Process Challenge Device containing a Biological Indicator (BI) with a Type-5 Chemical Indicator (CI); **(B)** the percentage of respondents that had seen an emergency implant load release based on a Type-5 CI result prior to getting a BI result; **(C)** the percentage of respondents that had a written policy and procedure to recall instruments in the event of a positive BI from Centralized Sterile Processing Department testing; and **(D)** the percentage of respondents that indicated documentation was maintained to track the incidence of emergency implant load release. Green bar segments = "yes" response; Red bar segments = "no" response.

Emergency release prior to BI result

Documentation of emergency load release

**CI type used in every package**

**Numbers of CI used in multi-level trays**

**Location of CI in every levels**

**multi-level trays**



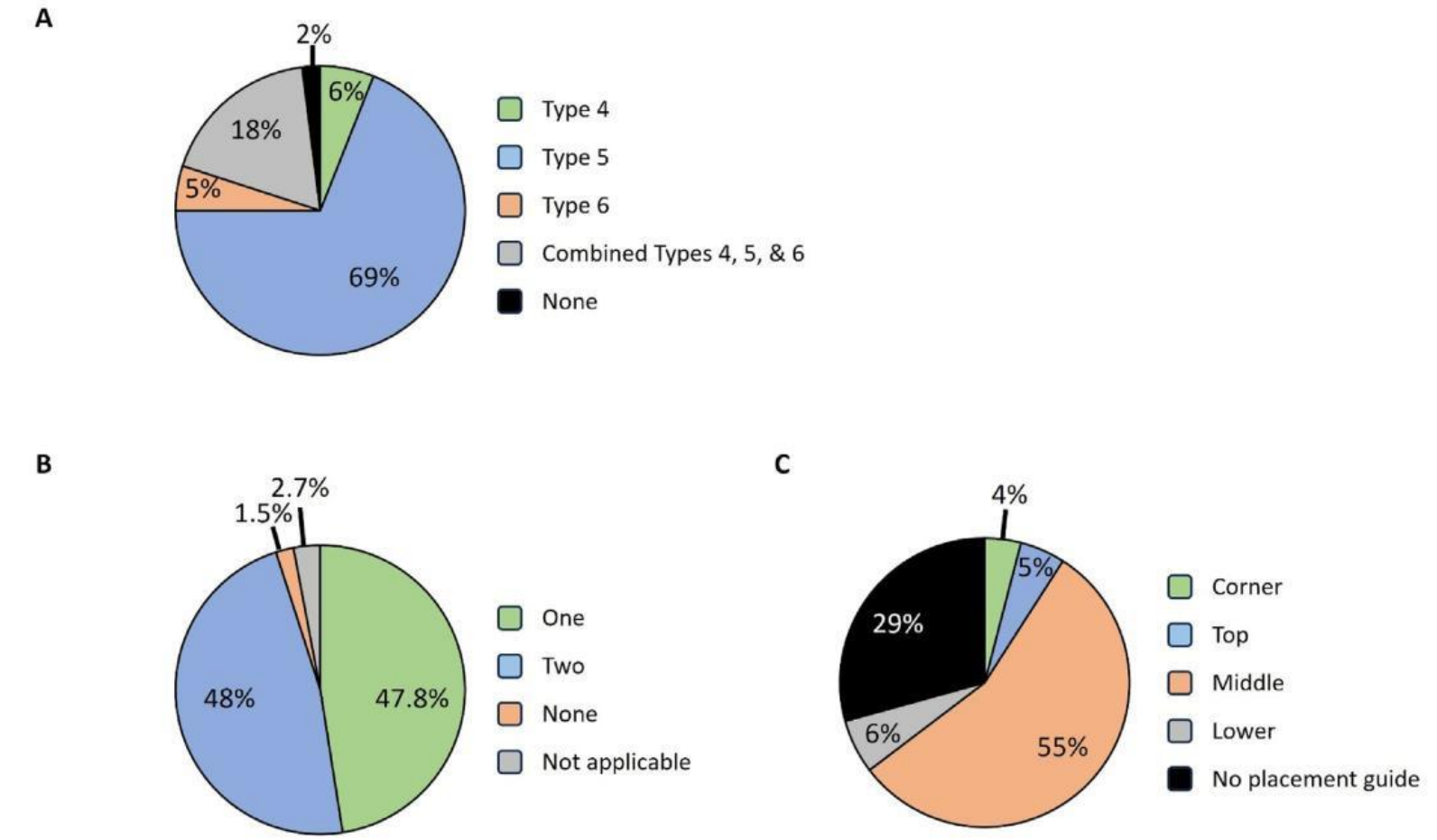
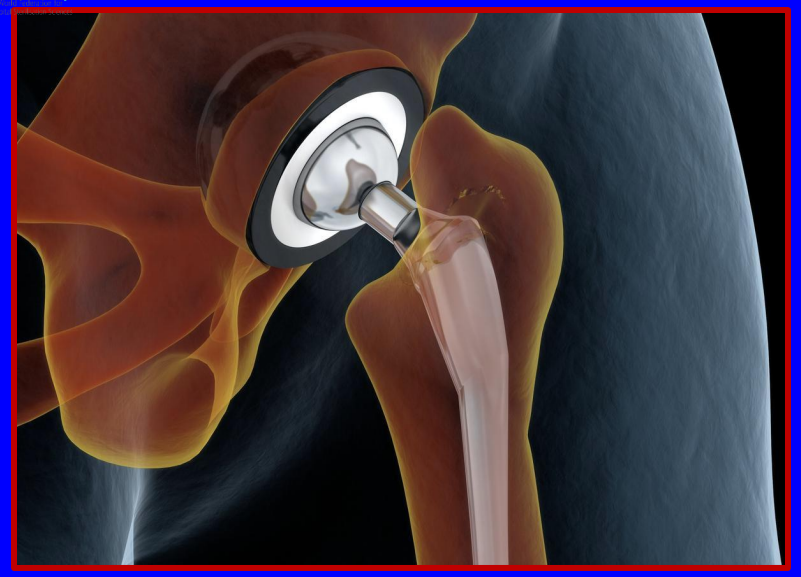



**Fig. 3 Chemical Indicator Use and Placement in Centralized Sterile Processing Departments.** Pie charts depicting **(A)** the overall percentage of respondents that use the indicated Chemical Indicator (CI) type(s) inside every package when performing sterilization; **(B)** the overall percentage of respondents that use the indicated number of CIs inside multi-level trays; and **(C)** the percentage of respondents that placed the CI in the indicated location in multi-level trays during sterilization.

In Fig. 4: IUSS - 43% of respondents report that this is still in use.

# Asia Safe Surgical Implant Consortium – first meeting 2023

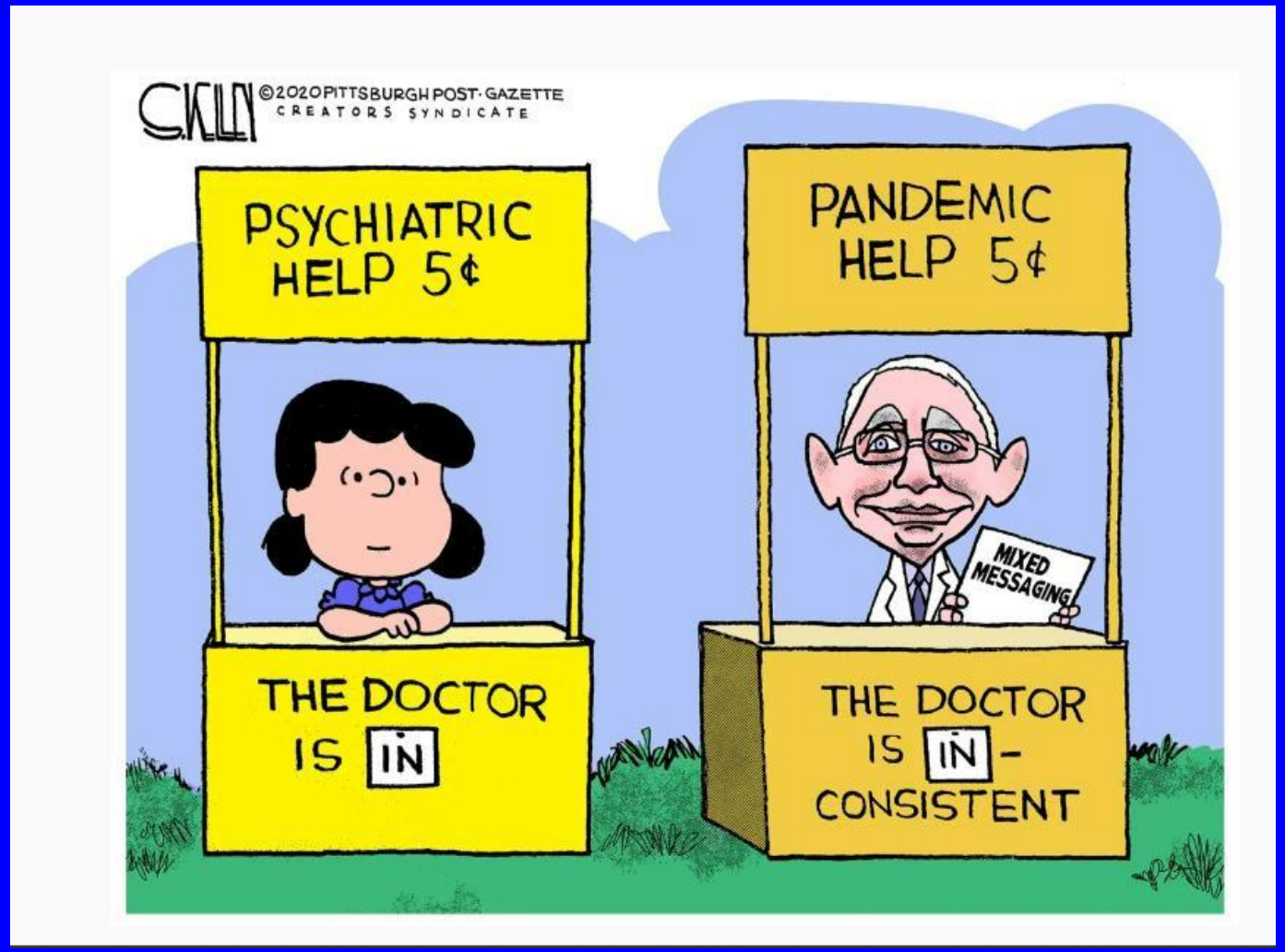


System must be in place to ensure proper management of loan instruments and thus the formation of the ….

## Asia Safe Surgical Implant Consortium

2-fold strategies:

- Consensus Documents
- Initiation of QIP projects




**That is why we need guidelines**

# So many guidelines .....

CDC

GB 国家标准

World Health Organization

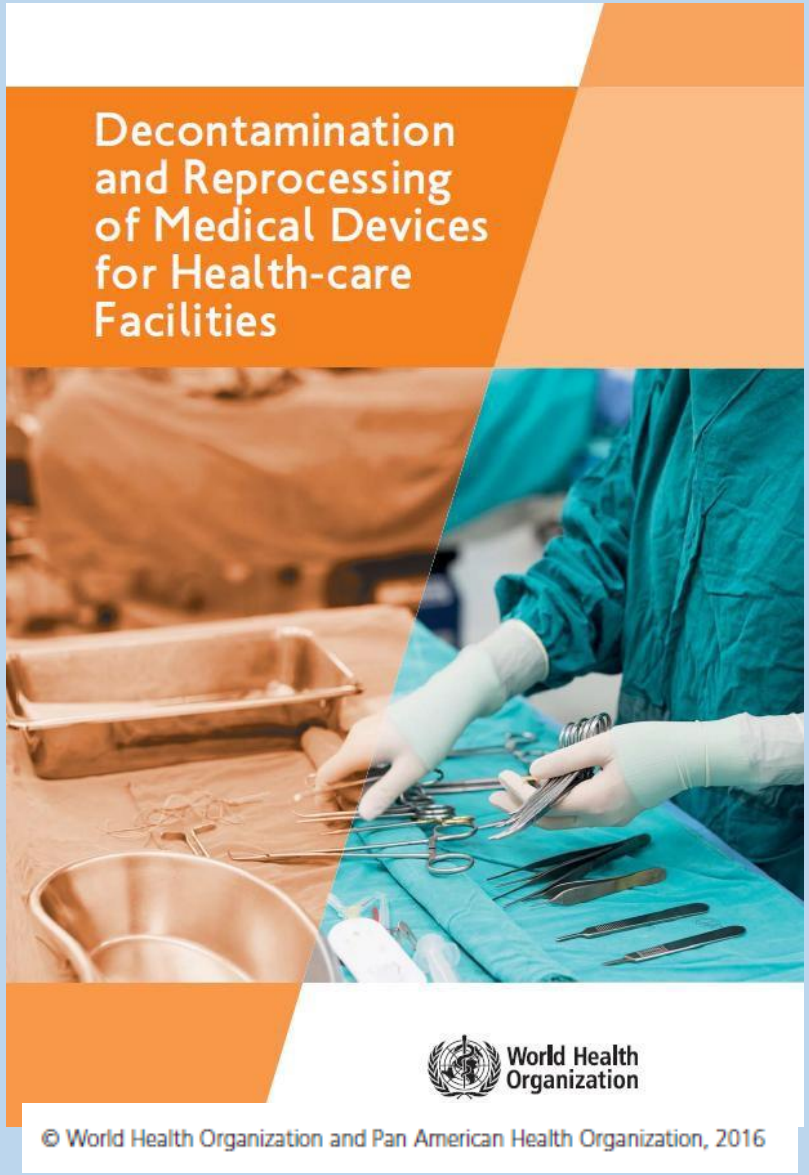
AORN SAFE SURGERY TOGETHER

APSIC ASIA PACIFIC SOCIETY OF INFECTION CONTROL

AAMI

TGA Health Safety Regulation

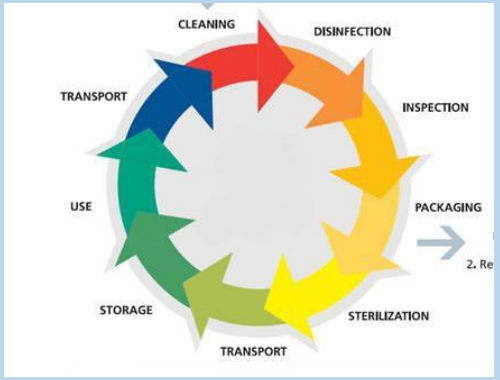
# International Guidelines are available:




## Decontamination and Reprocessing of Medical Devices

**Understanding the WHO Guideline**

WH Seto





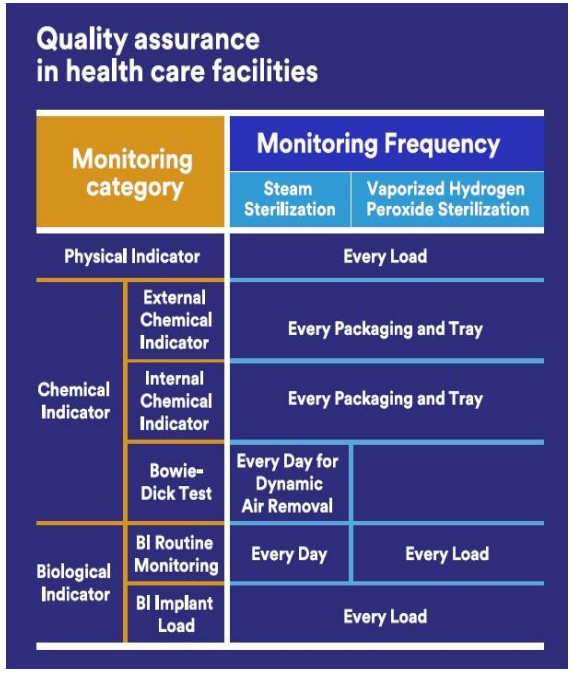
**We must focus on what is most important in any guidelines..**

# Consensus Documents

## Recap

Recap of achievements

- ***3*** Consensus Documents
- ***16*** associations endorsed
- CSSD, OR, Infection Prevention Association






HKU Med LKS Faculty of Medicine School of Public Health 香港大學公共衛生學院 WHO Collaborating Centre for Infectious Disease Epidemiology and Control

wfhss World Federation for Hospital Sterilisation Sciences

APSIC Asia Pacific Society of Infection Control

ACORN Australian College of Perioperative Nurses

SSA

Federation of Sterilizing Research and Advisory Councils of Australia

Infection Control Association (Singapore)

KAORN Korean Association of Operating Room Nurses

KASDN 병원중앙공급간호사회 Korea Association of Central Supply Department Nurses

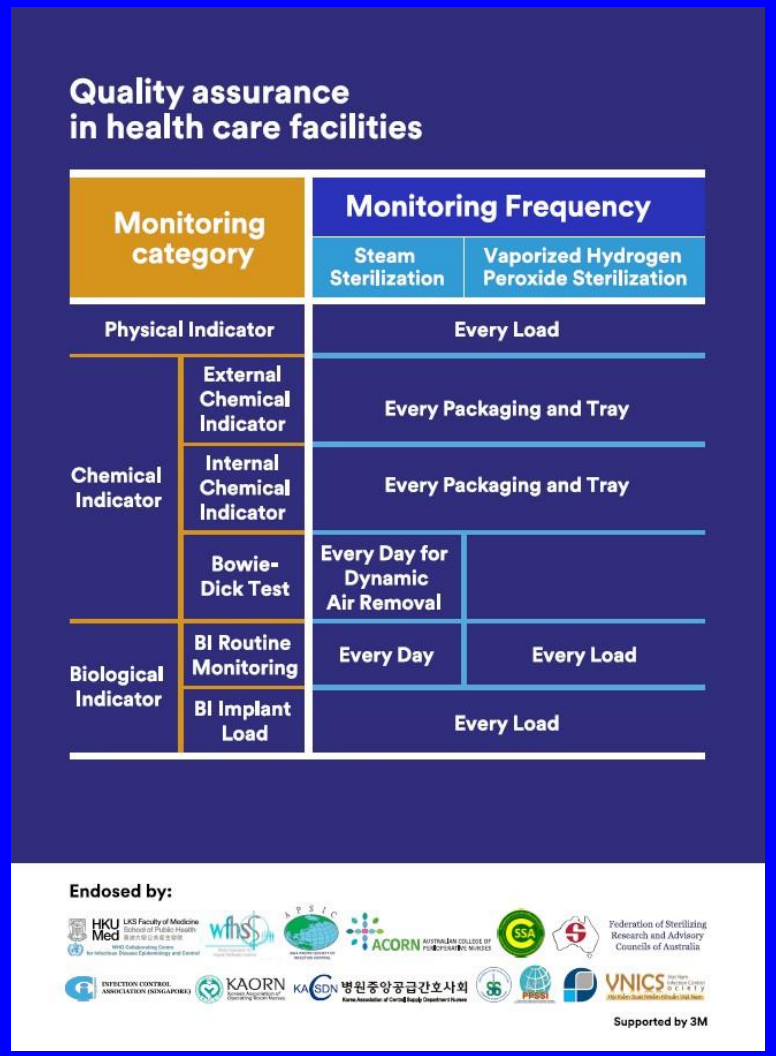
New Zealand Sterile Sciences Association

PPSSI

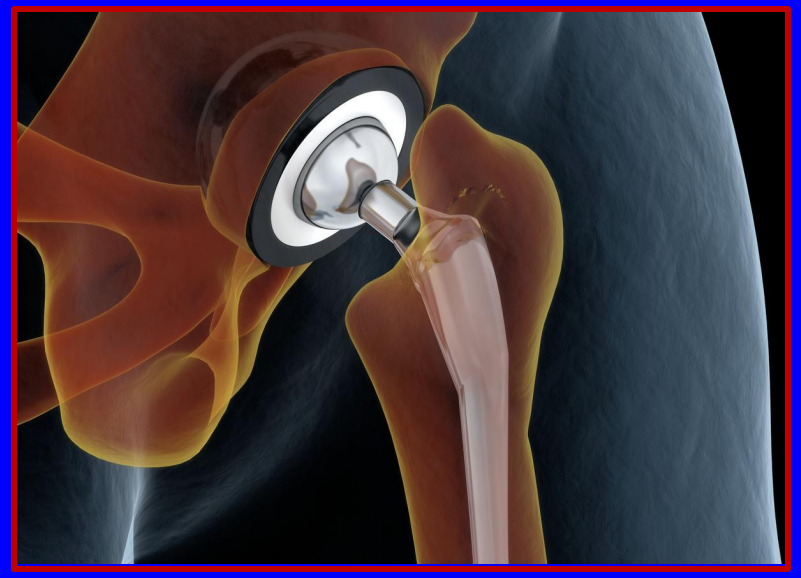
Operating Room Nurses Chapter Singapore

VNICS Viet Nam Infection Control Society Hội Kiểm Soát Nhiễm Khuẩn Việt Nam

# Consensus Documents







System must be in place to ensure proper management of loan instruments and thus the formation of the ….

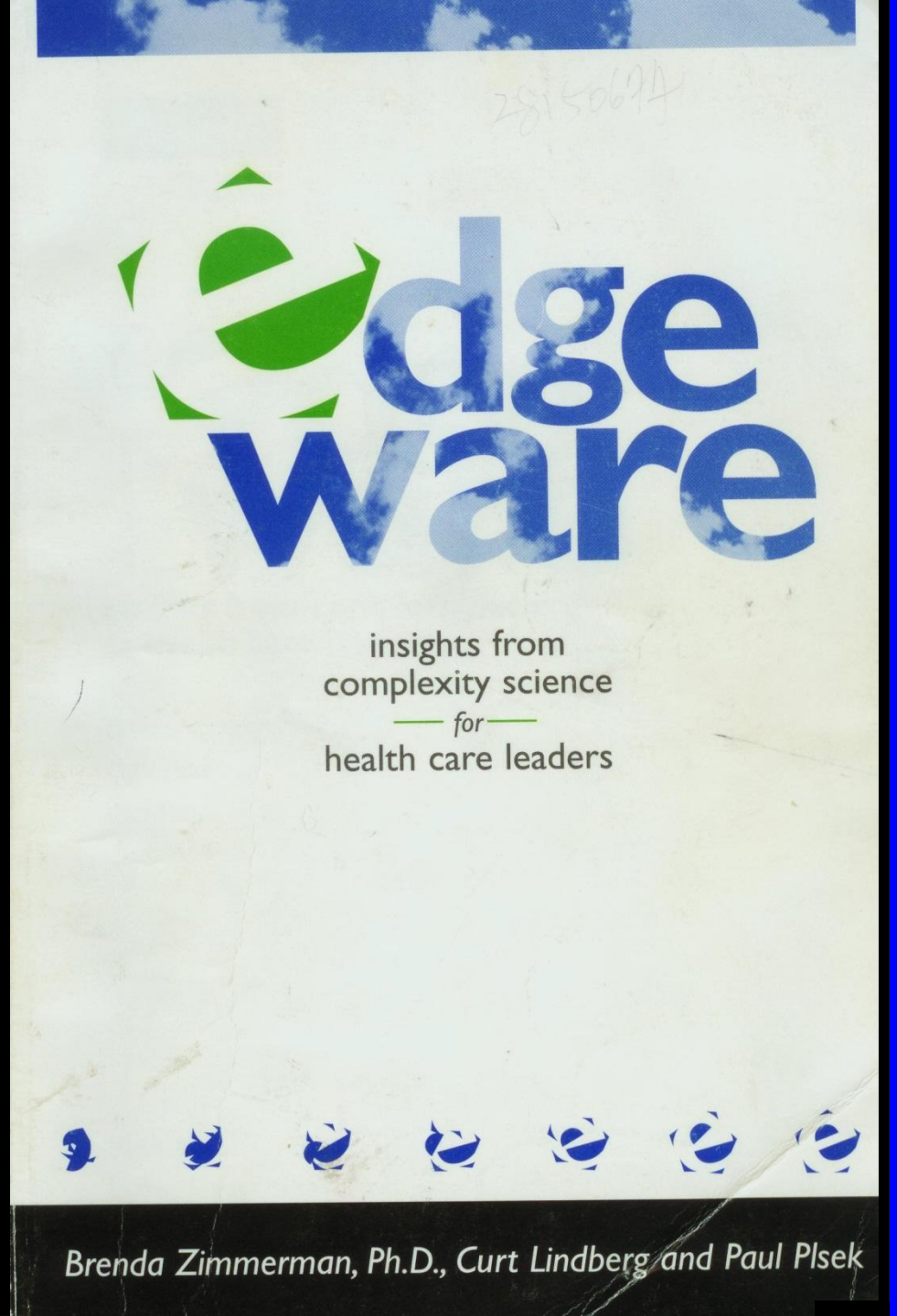
## Asia Safe Surgical Implant Consortium

2-fold strategies:

- Consensus Documents
- Initiation of QIP projects

“**The hospital** is altogether the most complex human organization ever devised”

— Peter Drucker

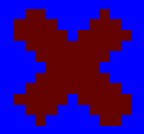



# Complexity Science

# ‘Complexity Science’

The study of systems that are

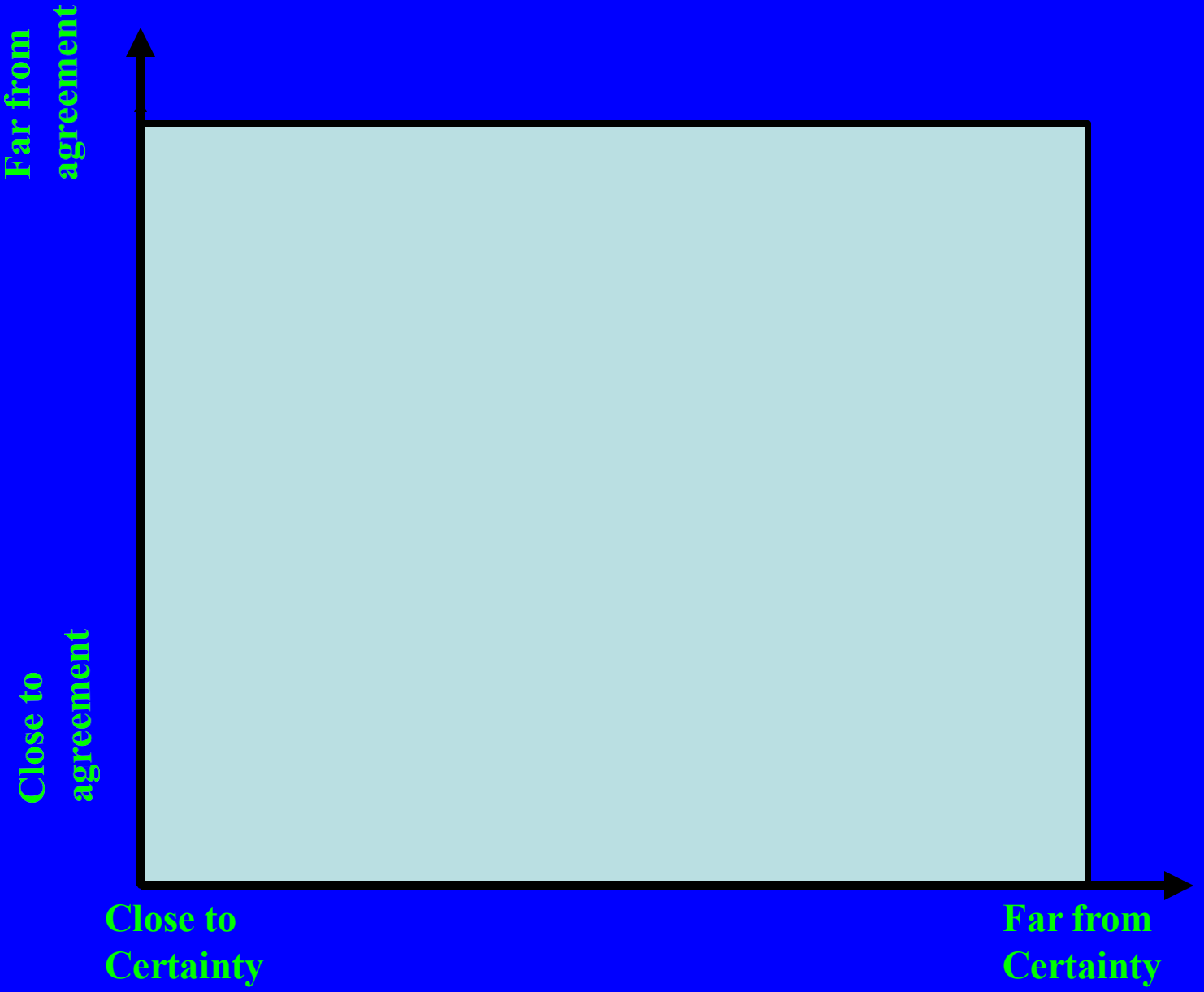
- both dependent and yet independent,
- where consensus are incomplete,
- changes are unpredictable but emerging.

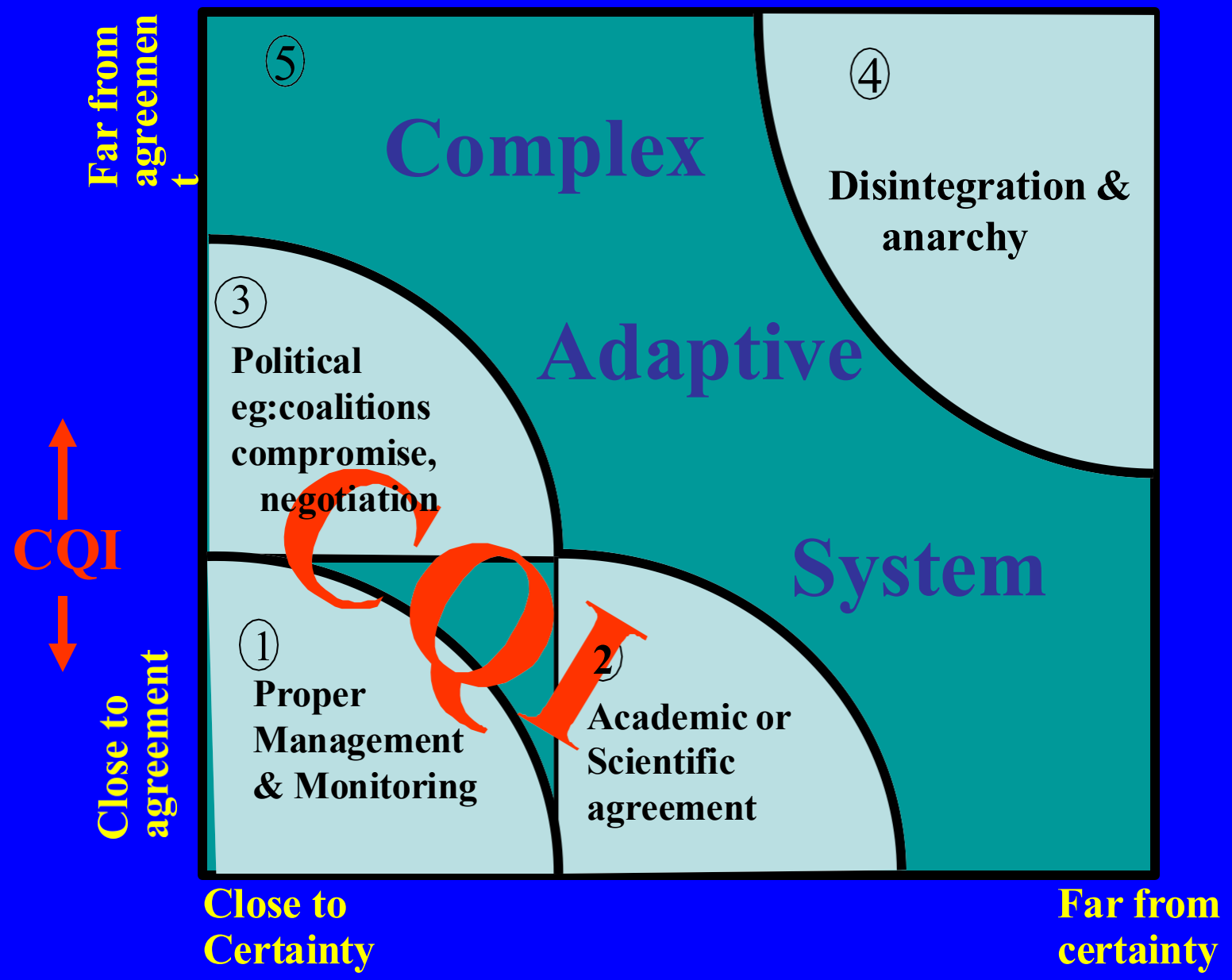


It is not referring to chaotic situations where no system exists

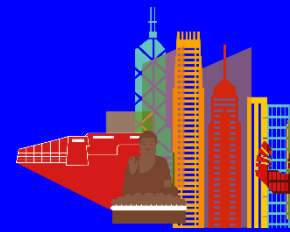
Zimmerman

# Stacey agreement and certainty matrix

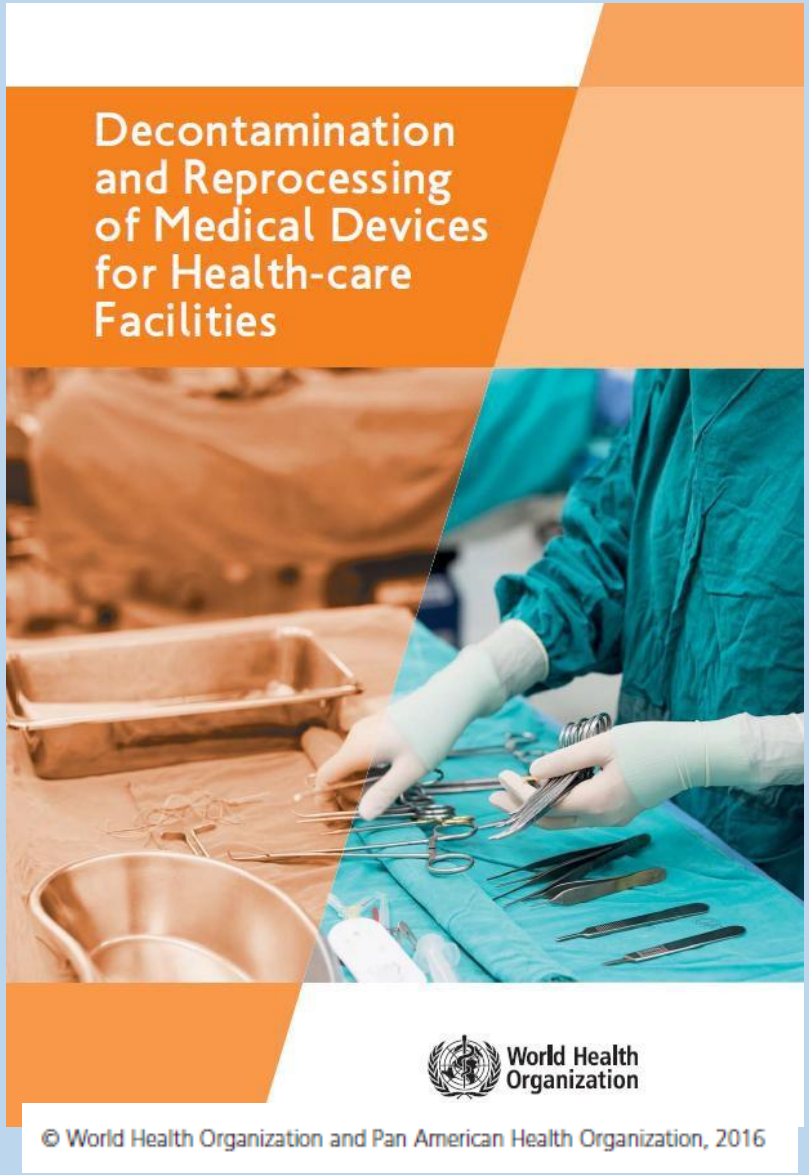



Far from agreement
5
Complex
4
Disintegration & anarchy
3
Political
eg:coalitions
compromise,
negotiation
Adaptive
System
CQI
1
Proper
Management
& Monitoring
2
Academic or
Scientific
agreement
Close to agreement
Close to Certainty
Far from certainty

The CSSD is relatively simple compared to the complexity of the hospital



# International Guidelines are available:

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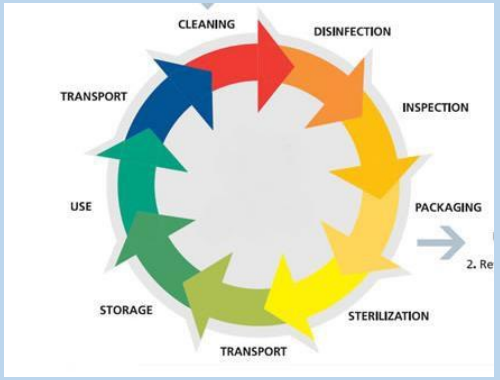
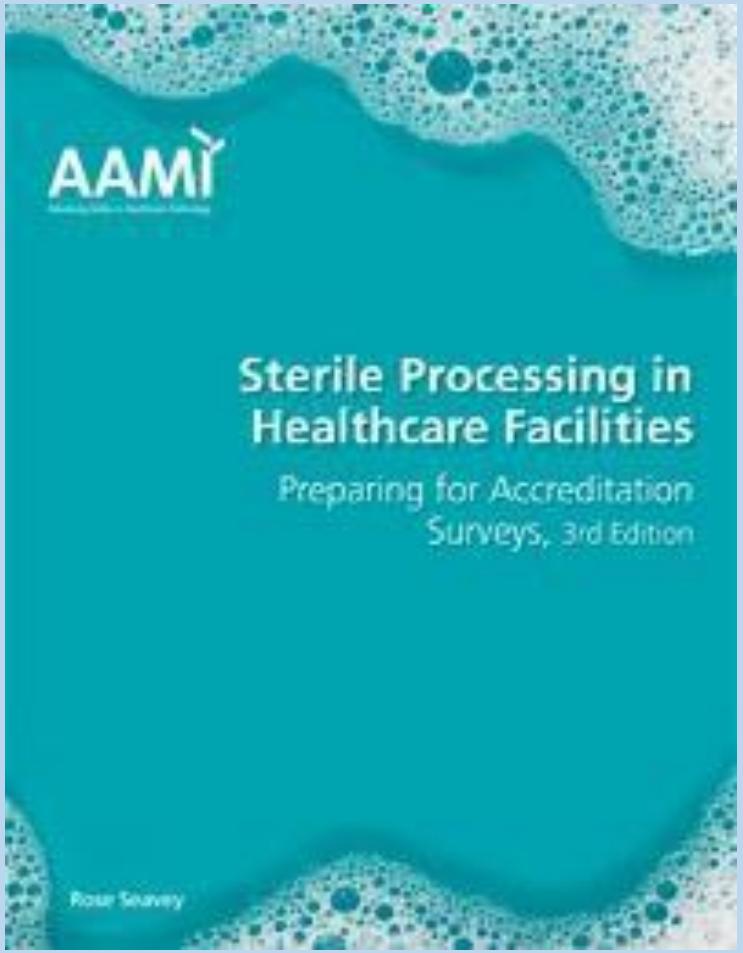
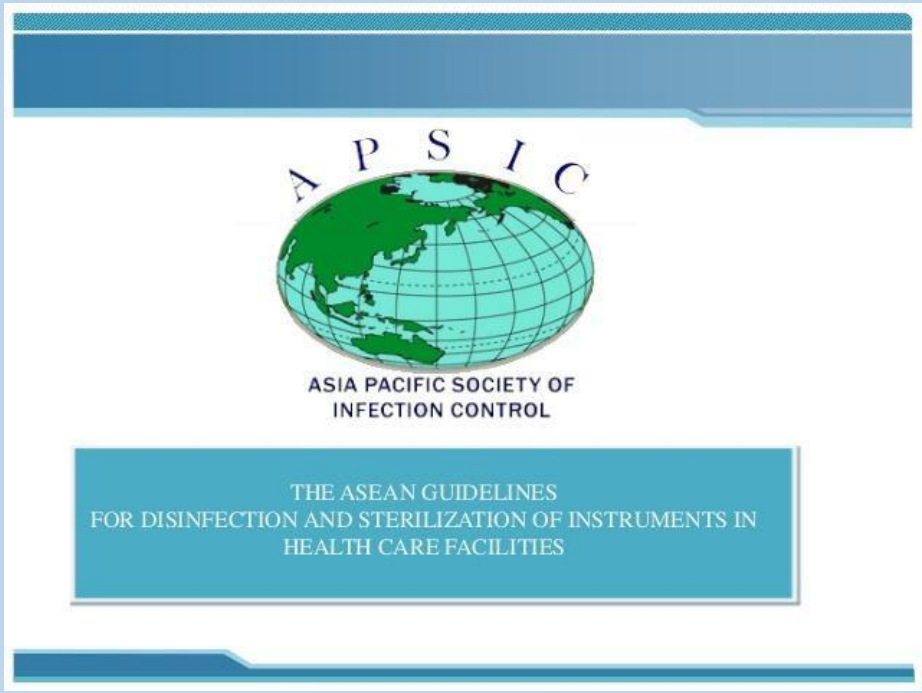


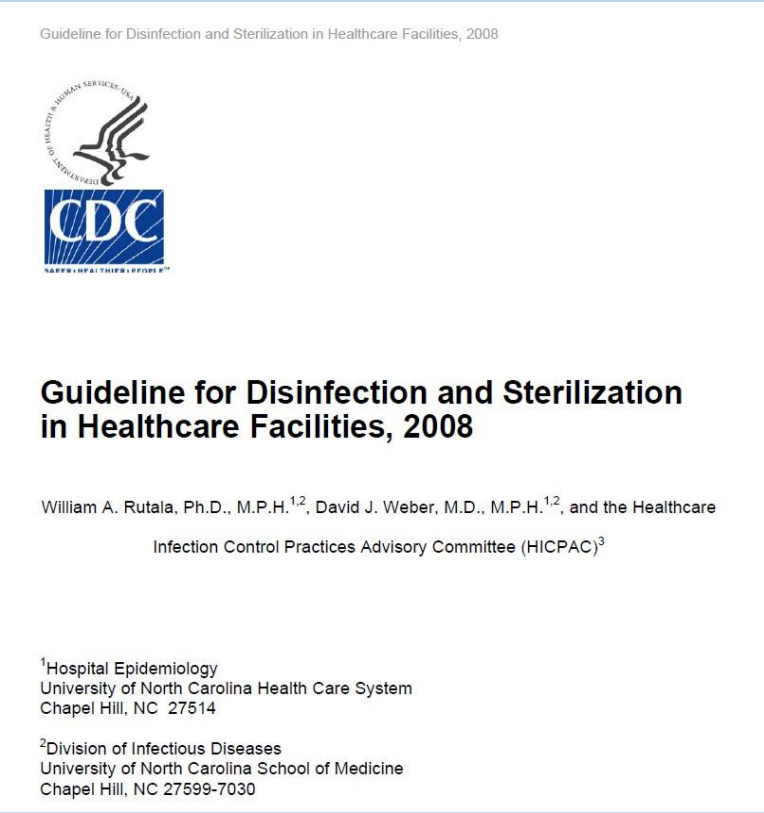

# Other Reference Guidelines




2017




2017




2008

Many things are well defined:

## General aspects of sterilization

# Definitions

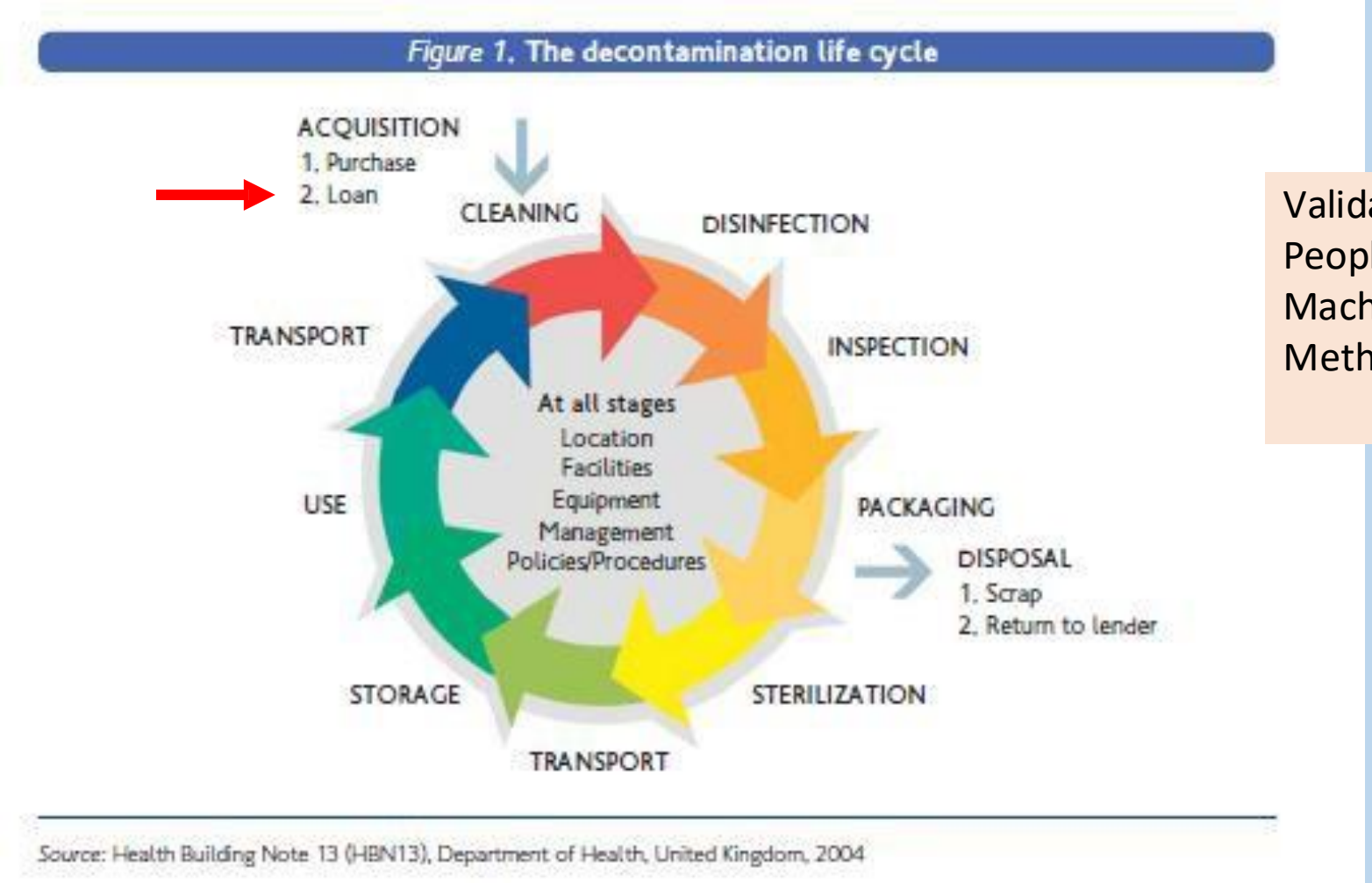
**Decontamination:** Removes soil and pathogenic microorganisms from objects so they are safe to handle, subject to further processing, use or discard. (Centers for Disease Control and Prevention [CDC] Guidelines for Disinfection and Sterilization in Healthcare Facilities, 2008).

**Cleaning:** The first step required to physically remove contamination by foreign material, e.g. dust, soil. It will also remove organic material, such as blood, secretions, excretions and microorganisms, to prepare a medical device for disinfection or sterilization.

**Disinfection:** A process to reduce the number of viable microorganisms to a less harmful level. This process may not inactivate bacterial spores, prions and some viruses.

**Sterilisation:** A validated process used to render an object free from viable microorganisms, including viruses and bacterial spores, but not prions.

# Processes are generally well defined and in place….




Validation:
People
Machines/environment
Method of validation

# RISK ASSESSMENT IN STERILE SERVICES

*Table 2.* **Policy for the local decontamination of reusable equipment according to the Spaulding classification**

| Risk category | Recommended level of decontamination | Examples of medical devices |
|---|---|---|
| High (critical)<br>Items that are involved with a break in the skin or mucous membrane or entering a sterile body cavity | Sterilization | Surgical instruments, implants/prostheses, rigid endoscopes, syringes, needles |
| Intermediate (semi-critical)<br>Items in contact with mucous membranes or body fluids | Disinfection (high level) | Respiratory equipment, non-invasive flexible endoscopes, bedpans, urine bottles |
| Low (non-critical)<br>Items in contact with intact skin | Cleaning (visibly clean) | Blood pressure cuffs, stethoscopes |

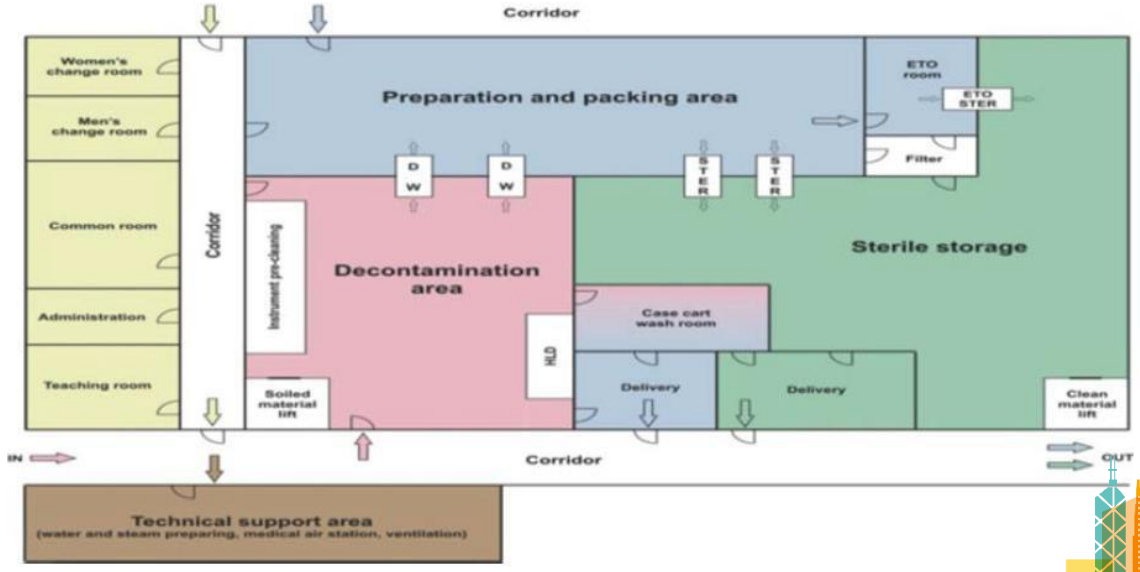
# The Sterile Services Department (SSD)

- Advantages and disadvantages of a SSD
- Layout and space planning of SSD
- Design of the SSD
- Air and water quality
- The SSD environment – structures, ventilation, humidity, temperature
- Specific areas – e.g. dirty area, packaging area, sterilization area
- Occupation health and safety

**Ten Rules for the SSD location**

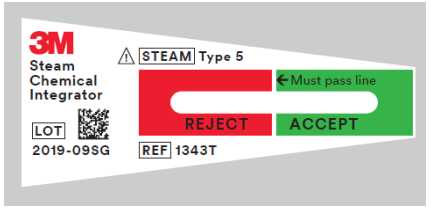
1. The SSD is designed so that it is physically separated from all other work areas and does not interfere with routine clinical practice.
2. The SSD is not an integral part of any other service user or treatment area, such as operating theatres.
3. The SSD is not to be used as a thoroughfare.
4. The SSD is purpose-specific and built for reprocessing devices with clearly demarcated areas.
5. The SSD is designed to allow segregation of "dirty" and "clean" activities.
6. The SSD is designed to facilitate a unidirectional flow from the "dirty" area to the "clean" area.
7. The SSD will have a dedicated staff area in proximity for changing into work wear, which includes a shower, toilet facilities and lockers.
8. Access to the dirty and "clean" areas, such as the IAP room, should be through separate, dedicated gowning rooms provided with hand hygiene facilities.
9. The dirty area, IAP, sterilizing and sterilizer unloading area should be free from windows that can be opened, ledges and difficult-to-clean areas.
10. The dirty area, clean area room, IAP area and sterilizing area should be designed to minimize the ambient sound levels within the rooms. This will require particular attention to the installation of equipment, building finishes and maintenance of machines.

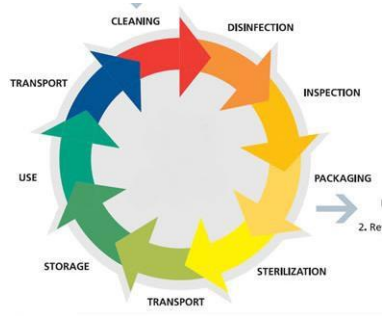
*Figure 6.* **An example of a SSD layout***




*Note the flow of staff and devices

# Sterilization Procedures
# - the Perfect Area for CQI in the Hospital





# Asia Safe Surgical Implant Consortium

## 2023 ASSIC
## Tokyo, Japan

**10** *Countries* | **16** *Organizations* | **20** *Delegates*

- Developed 3 consensus documents
- Endorsed by ***10*** organizations
- ***10*** QIP completed

## 2024 ASSIC
## Seoul, Korea

**10** *Countries* | **17** *Organizations* | **41** *Delegates*

- Consensus documents endorsed by ***12*** organizations
- ***23*** QIP completed

## 2025 ASSIC March 25-27
## Bangkok, Thailand


**10** *Countries* | **16** *Organizations* | **42** *Delegates*

- Consensus documents endorsed by ***17*** organizations
- ***28*** QIP

## Sterilization Consensus



[Sterilisation Assurance Resource Hub Page]

**Solving What Matters, Advancing Together**
**Spotlight on the Inspiring ASSIC Program!**

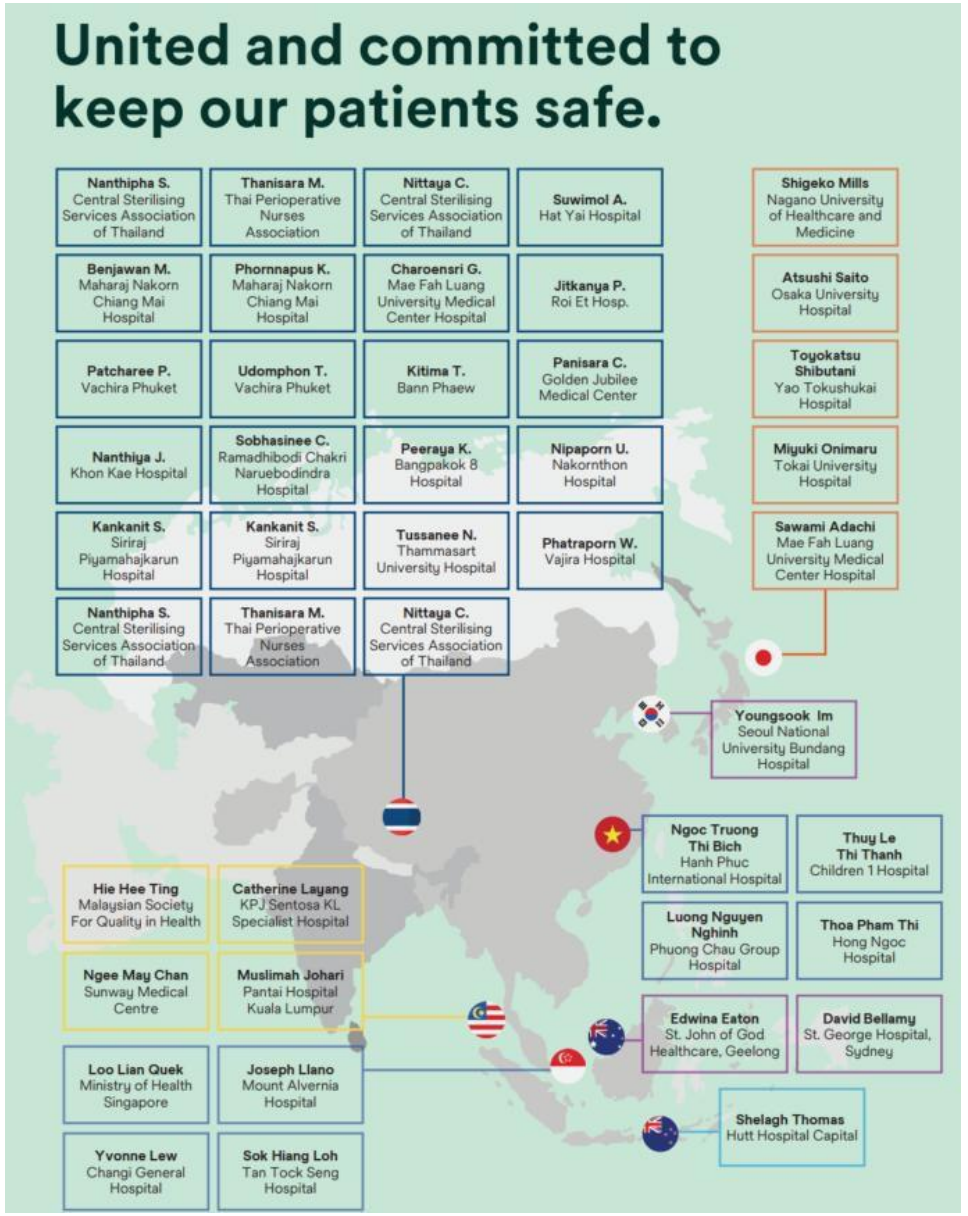
# 2025 ASSIC Delegates

**10**
*Countries*

**42**
*Delegates*

**28**
*2025 WHO QIP#*

*Included WHOCC & Speaker, #Interested to conduct QIP



# Honoring the Attendees Behind This Outstanding Event: 2025 ASSIC


WHO CC, Asia & Global Team


Australia & New Zealand


Japan


Korea


Singapore

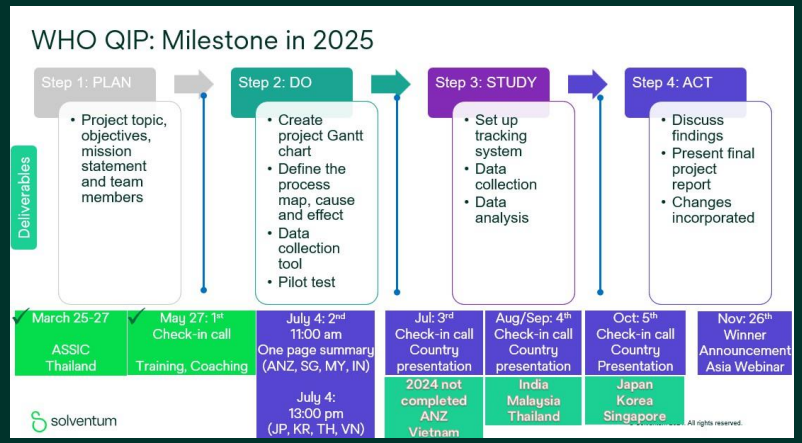

Thailand


Malaysia


Vietnam

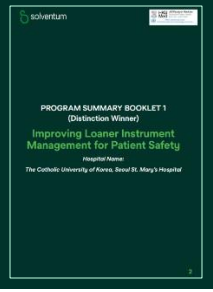
# WHO CC QIP, Education & Training

## Continuous Improvement through WHO CC QIP





### QIP eBook – 23 QIP






## Leverage Education & Training

# Description of the 23 QIPs in 2024

- All on loan instruments or improvements on recall.

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# 2025 QIP Program Brochure


Quality Improvement Programs (QIPs) are of utmost importance as they play a crucial role in driving several key factors:

- **Improved outcomes for patients**
- **Improved efficiency of staff and saving cost, special for loaner instruments and implants**

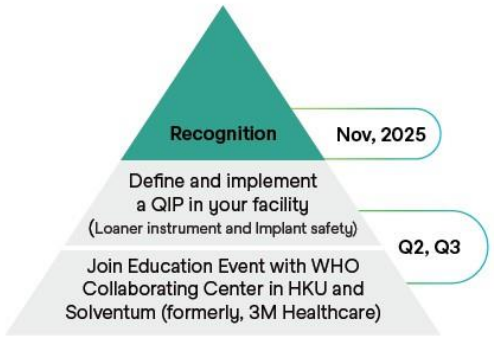
QIP programs ensure that the focus remains on continuously improving the quality of care provided to patients.

Scan QR code to join QIP

| 1 STEP | 2 STEP | 3 STEP | 4 STEP |
|---|---|---|---|
| Join Education Session with WHO Collaborating Center in HKU and Solventum (formerly, 3M Healthcare) | Follow Guidelines and aimed at making improvements in the safe reprocessing of loaner instruments and implants | Demonstrate the positive outcomes resulting from implementation of a Quality Improvement Program | Obtain the prestigious QIP winner certification from the WHO Collaborating Center in HKU in Q4, 2025 |

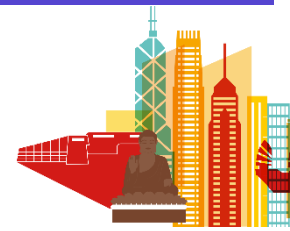
We will help you apply WHO, AORN, AAMI, APSIC, and CDC guidelines, along with standards and consensus documents, to implement best practices in your facility.
This will support your organization's patient safety goals, with a special focus on the safe reprocessing of loaner instruments and implants in 2025.

## QIP Program Process



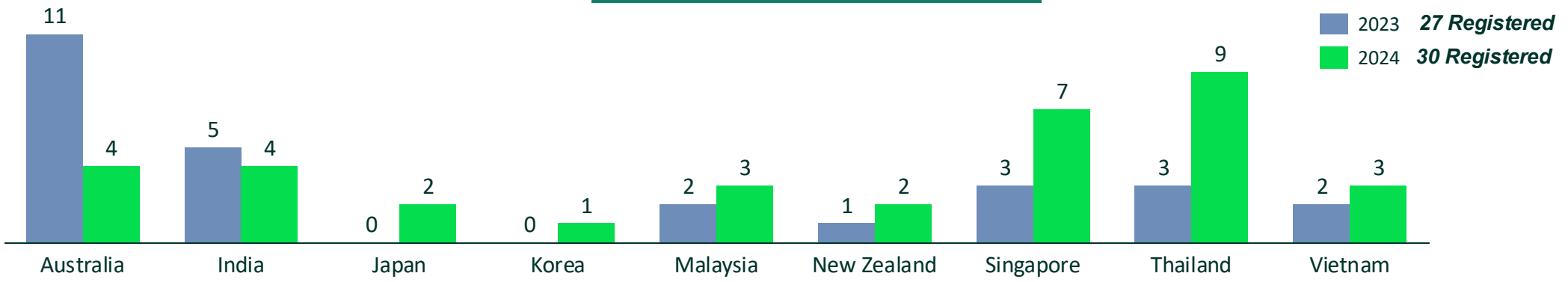
# WHO QIP: Milestone in 2025

| | Step 1: PLAN | Step 2: DO | Step 3: STUDY | Step 4: ACT |
|---|---|---|---|---|
| Deliverables | • Project topic, objectives, mission statement and team members | • Create project Gantt chart<br>• Define the process map, cause and effect<br>• Data collection tool<br>• Pilot test | • Set up tracking system<br>• Data collection<br>• Data analysis | • Discuss findings<br>• Present final project report<br>• Changes incorporated |
| | ✓ March 25-27<br>ASSIC<br>Thailand | ✓ May 27: 1st<br>Check-in call<br>Training, Coaching | ✓ July 4: 2nd<br>11:00 am<br>One page summary<br>(ANZ, SG, MY, IN)<br>July 4:<br>13:00 pm<br>(JP, KR, TH, VN) | ✓ Jul: 3rd<br>Check-in call<br>Country presentation | ✓ Aug/Sep: 4th<br>Check-in call<br>Country presentation | ✓ Oct: 5th<br>Check-in call<br>Country Presentation | ✓ Nov: 26th<br>Winner Announcement<br>Asia Webinar |

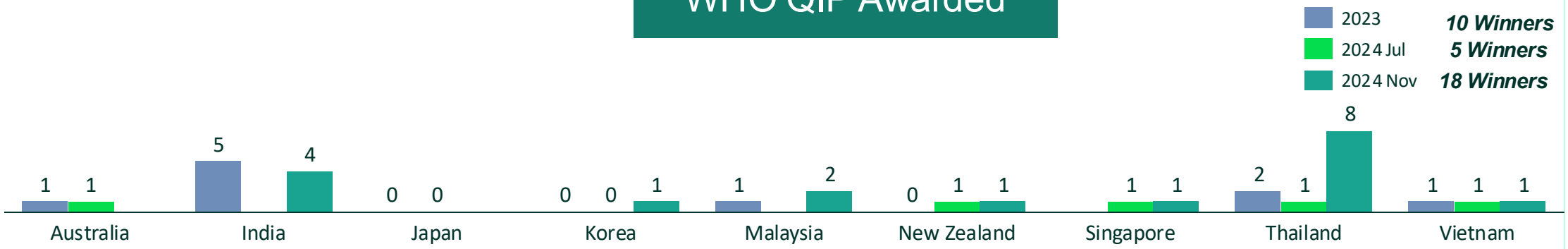


# 2023 - 2024 WHO QIP Submission – 35 Hospitals

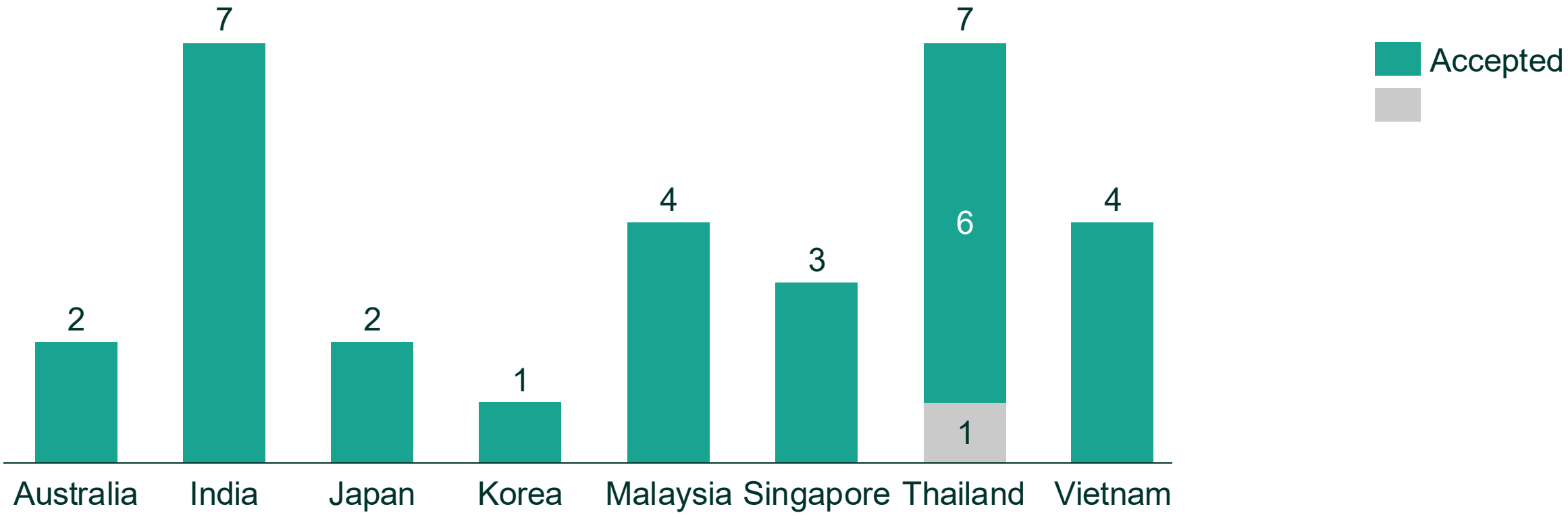
## WHO QIP Registrations




## WHO QIP Awarded



# 2025 QIP Registrations
## 32 Registrations 29 Accepted




12 winners with 3 distinctions, announced on 26th November 2025

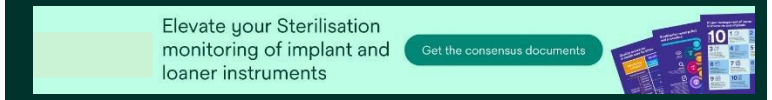
# ASSIC Community

## Asia Safe Surgical Sterilisation Assurance Knowledge Hub


[Solventum_Asia_Safe_Surgical_Sterilisation_Assurance_Hub]

## Association Endorsement Asset

*Email Signature Banners*




*Association Site Banners*


*Social Media Post Content & Email Template*



## Interview Videos

# Social Media Post (During and Post Event) ✔

2025 Asia Safe Surgical Implant Consortium

March 25 – 27, 2025 2025 | Bangkok, Thailand

Bringing together leaders in sterilisation monitoring and safety practices

In collaboration with the WHO Collaborating Centre HKU, #Solventum is bringing together experts at the Asia Safe Surgical Implant Consortium from 25-27 March. With implant surgeries carrying the highest risk of infection, ensuring every load is properly sterilised is a non-negotiable step in #patientsafety.


2025 Asia Safe Surgical Implant Consortium.mp4

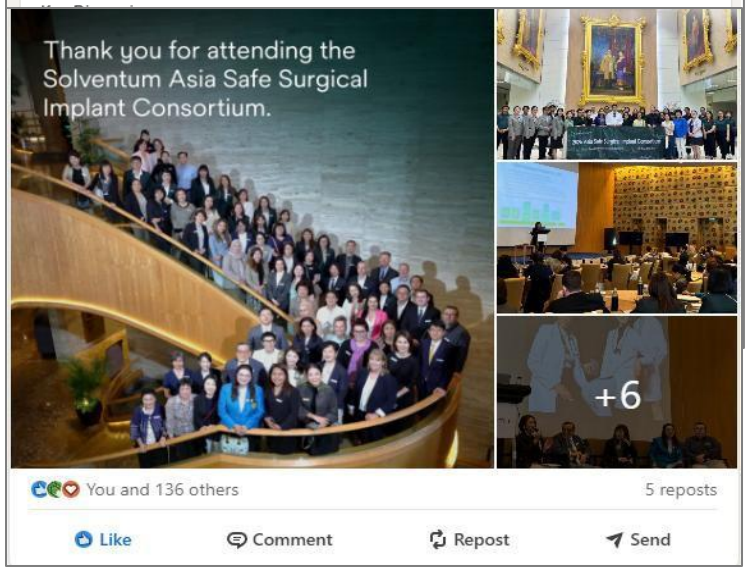
You and 87 others 3 comments • 9 reposts

Like Comment Repost Send

A Transformative Surgical Sterilisation Experience at the Asia Safe Surgical Implant Consortium: A Unified Effort to Patient Safety

We have successfully concluded an insightful and impactful Asia Safe Surgical Implant Consortium in collaboration with the WHO Collaborating Centre HKU.

Leaders from across Asia have registered for the WHO Collaborating Centre HKU Quality Improvement Project (QIP) to elevate monitoring practices in implant load and the management of loaner instruments.




You and 136 others 5 reposts

Like Comment Repost Send

**Advancing Sterilisation Quality Assurance**

Ensuring the highest standards in medical instrument sterilisation is essential for patient safety. In collaboration with leading experts, we are proud to introduce three key consensus documents that establish new benchmarks for sterilisation quality assurance:

✔ Quality Assurance in Sterilisation Monitoring Frequency – Providing guidelines for consistent and effective sterilisation monitoring.
✔ Sterilisation Recall Policy & Procedure – Defining clear protocols to manage and mitigate risks associated with sterilisation failures.
✔ Proper Management of Loaner Instruments & Implants – A 10 step guide to improving processes, handling, and monitoring to ensure compliance and patient safety.

We endorse these critical frameworks to strengthen global sterilisation practices. Together, we can drive meaningful improvements in patient safety and infection prevention.

#SterilisationQuality #PatientSafety #MedicalStandards #SterilisationMonitoring #ImplantLoad #LoanerInstruments #HealthcareInnovation

BRING THE STERILIZATION SCIENCE TO THE NEXT LEVEL
將滅菌科學提升到新水平

26TH WORLD STERILIZATION CONGRESS

3RD TO 6TH DECEMBER 2025 | HONG KONG ASIAWORLD-EXPO 亞洲國際博覽館

# Welcome to Hong Kong

## Thank you!