

Reducing E.O. gas
Sterilization

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INTRODUCTION

• Ethylene oxide (E.O) gas sterilization is low-temperature sterilization, and our hospital uses 100% E.O gas and a mixed gas consisting of 10% E.O+90% HCFC.

• Currently, sterilizer operation is saturated, Mixed E.O. gas is converted to positive pressure during sterilizer injection, which has the potential for gas outflow, whereas 100% E.O. gas sterilization attracts negative pressure throughout the entire process, blocking the potential for gas outflow.

• Therefore, we recognize that the 100% E.O. sterilization method, in which the entire sterilization process proceeds as a negative pressure, is safer, and we intend to conduct improvement activities to reduce the use of mixed E.O. gas and secure stability in E.O. gas sterilization.

AIM

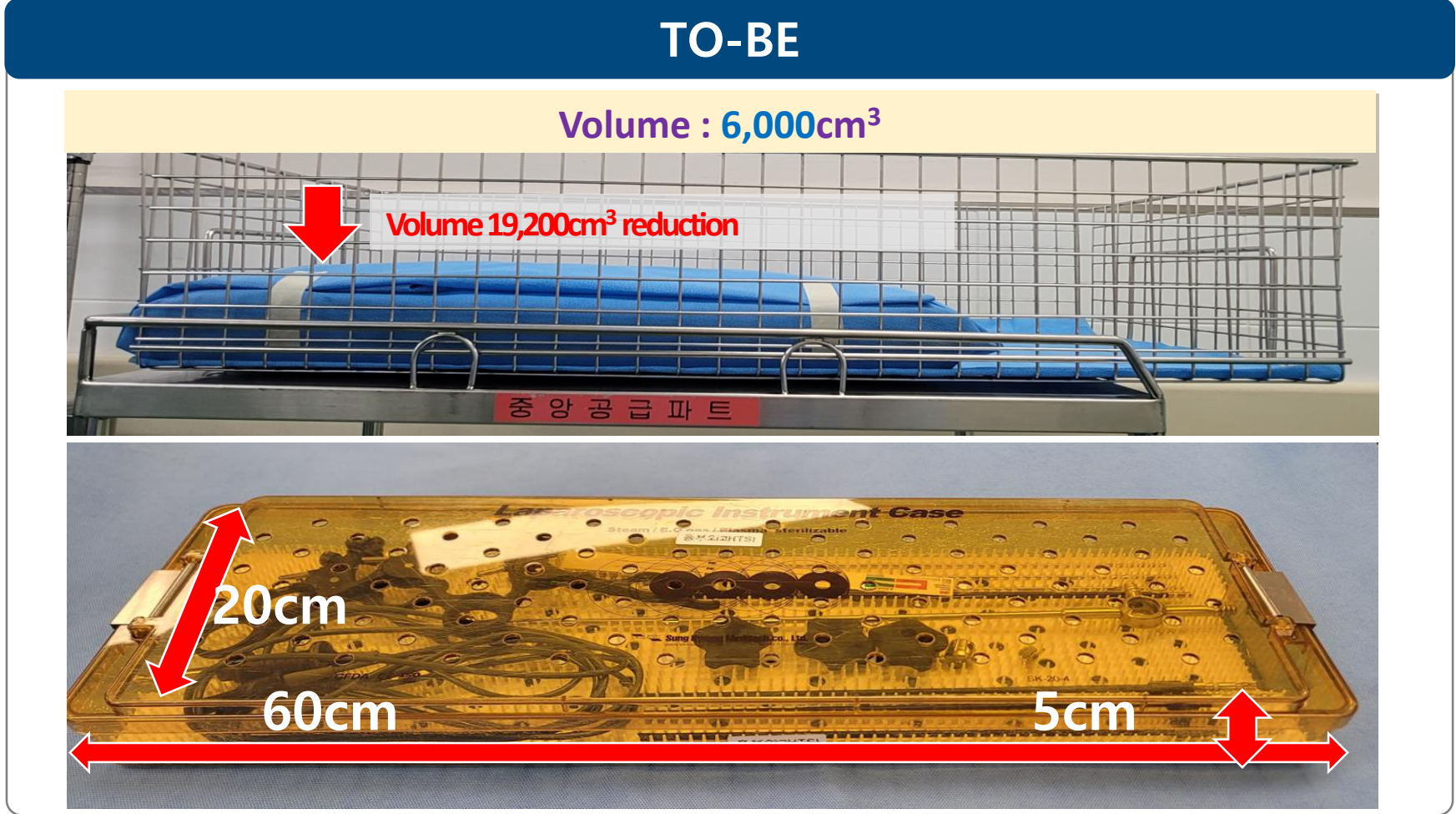
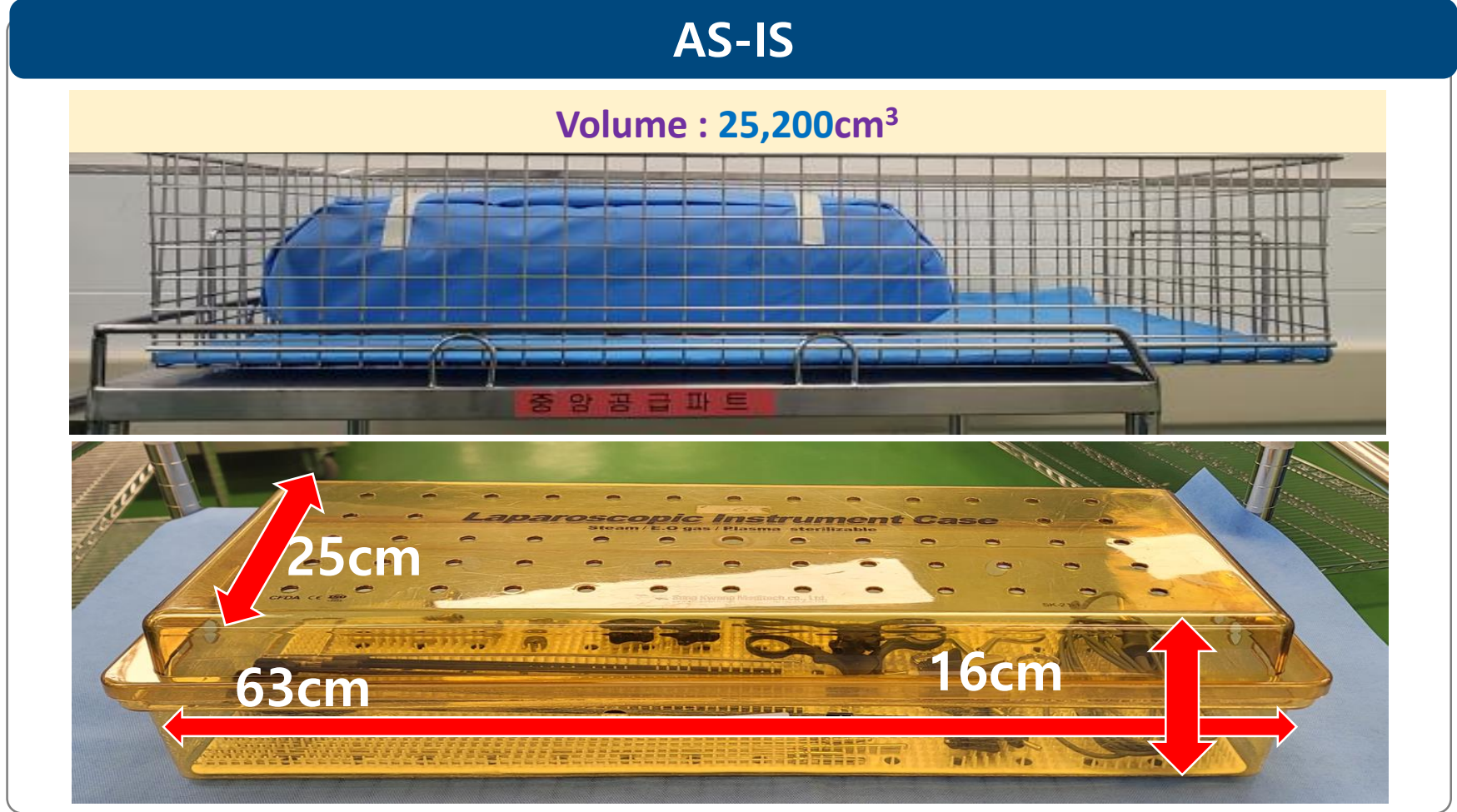
- Problem Analysis
- (1) Available capacity saturation with increased E.O. gas sterilization
- (2) The possibility of gas outflow according to the mixed E.O. gas sterilization method and the end of production are scheduled
- Key indicators and objectives
- (1) Reduction the whole of E.O. gas sterilization
- (2) Increased stability due to reduced use of mixed E.O. gas

METHOD

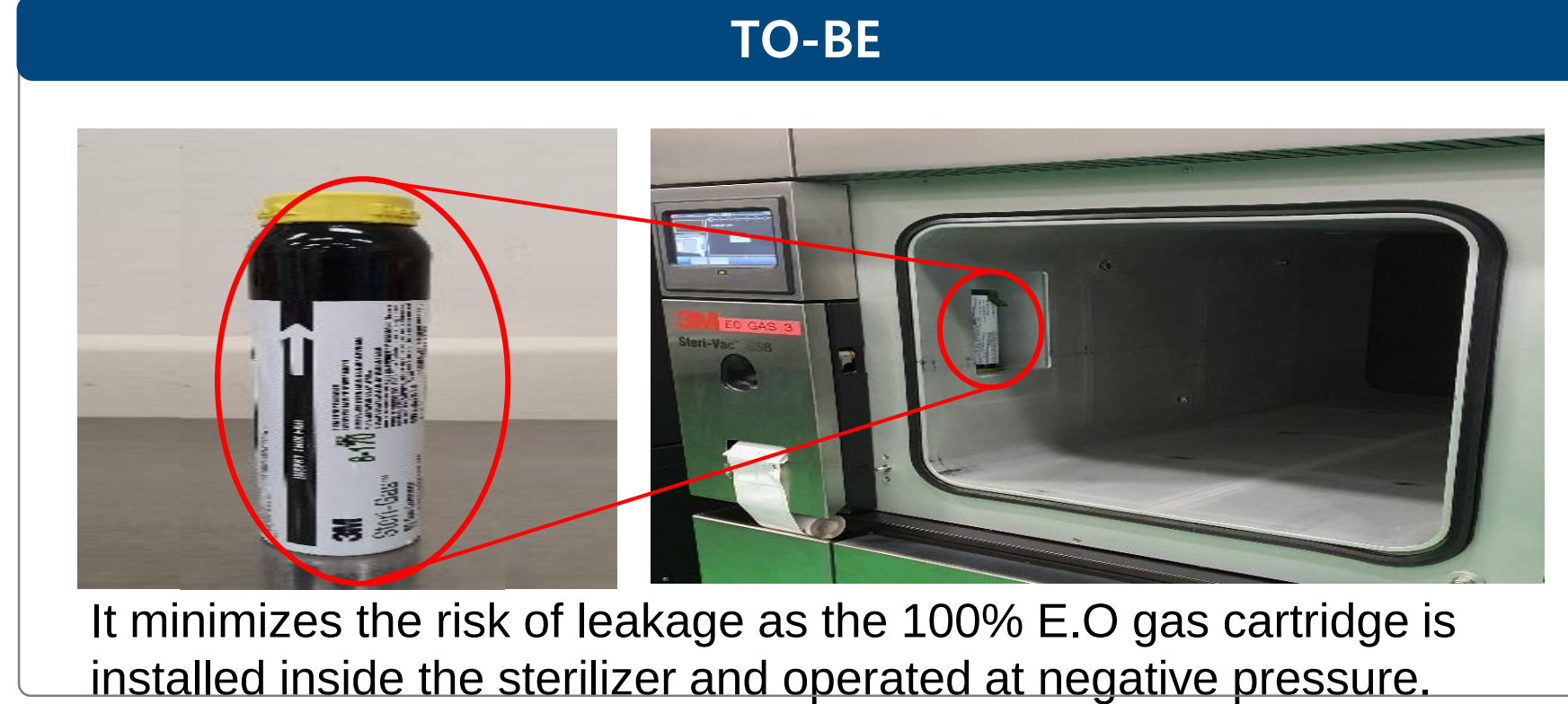
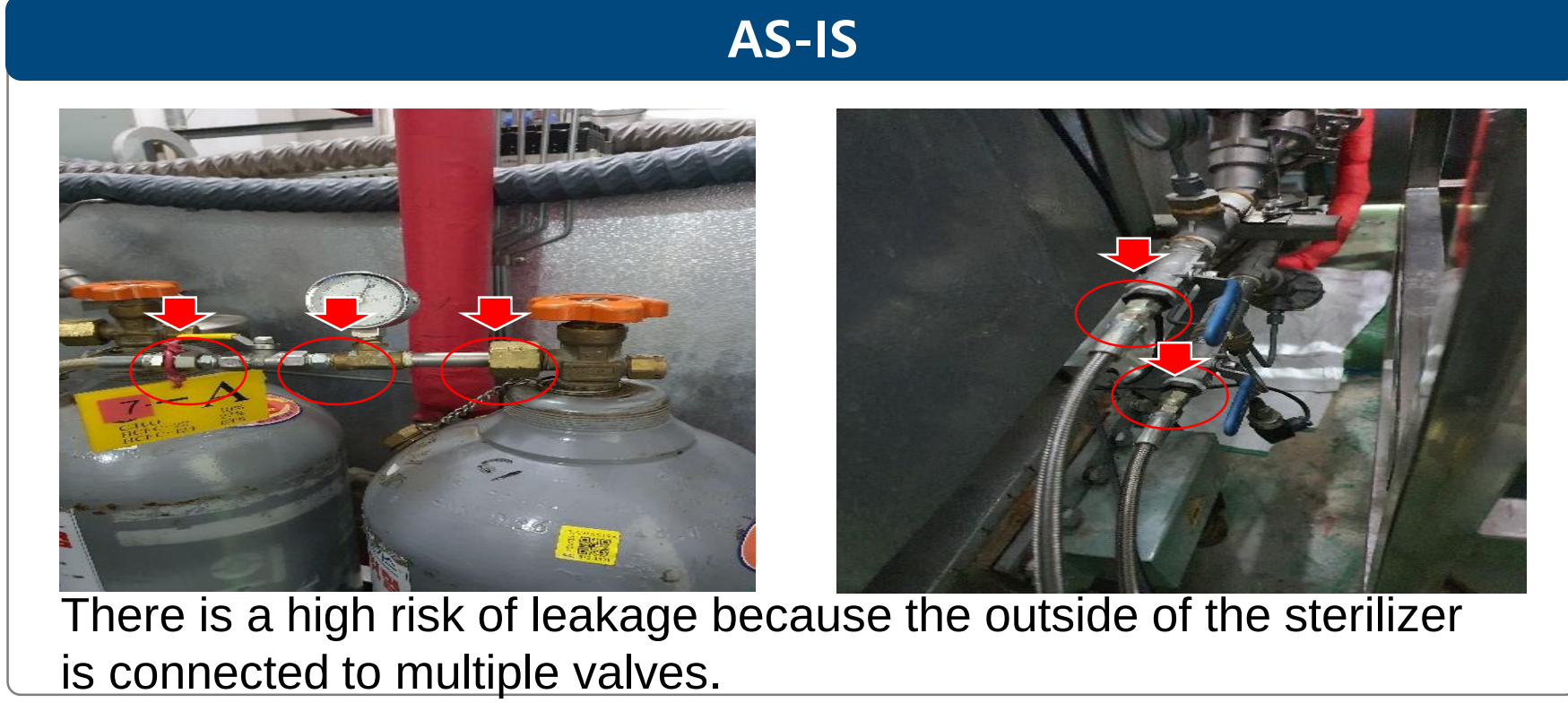
- Improvement activities
- (1) Identifying proper sterilization methods based on IFU(Instrument For Use).
- (2) E.O.gas commissioned things Changing the sterilization method of convertible goods among things.
- (3) Change overcapacity container to appropriate capacity container.

RESULTS

- Improvement activities
- (1) Identifying proper sterilization methods based on IFU (Instrument For Use).
- | Symbol | Explanation | Symbol | Explanation |
|--------|--|--------|---|
| | Catalog number | | Indicates the temperature limits to which the medical device can be safely exposed |
| | Batch code | | Type CF applied part |
| | Quantity of content | | Storage conditions |
| | Manufacturer | | Transport conditions |
| | Date of manufacture | | Autoclavable |
| | Consult instructions for use | | Federal (USA) law restricts this device to sale by or on the order of a physician |
| | Indicates the range of humidity to which the medical device can be safely exposed | | CE certification mark – symbol for the compliance with the Medical Device Directive 93/42/EEC |
| | Protection class according to IEC 60529. Protected against the effects of temporary immersion in water | | |
2. Steam 멸균
- | Sterilizer Type | Method | Cycle Time (at temperature) | Temperature Set Points | Preconditioning Pulses |
|-----------------|----------------------|-----------------------------|-------------------------------|------------------------|
| Prevacu m | Wrapped | 3-18 minutes | 270°F / 273°F (132°C / 134°C) | 3 |
| Prevacu m | Unwrapped | 3-5 minutes | 270°F / 273°F (132°C / 134°C) | 3 |
| Prevacu m | Wrapped | 20 minutes | 250°F (121°C) | 3 |
| Cracity | Unwrapped | 10 minutes | 270°F / 273°F (132°C / 134°C) | Not applicable |
| Cracity | Wrapped OR Unwrapped | 30 minutes | 250°F (121°C) | Not applicable |
- (2) E.O.gas commissioned things Changing the sterilization method of convertible goods among things.
- (3) Change overcapacity container to appropriate capacity container.



- (4) Mixed E.O gas sterilization reduction -> Increased work safety



CONCLUSIONS

- Improvement effect
- (1) Reduction in sterilization amount
- (2) Shortening of sterilization process time
- (3) Increased safety for the environment, operators, and sterilized items
- (4) Improving awareness of the ability to switch sterilization methods through IFU guidelines
- | AS-IS | TO-BE |
|-------|-------|
| | |

ACKNOWLEDGEMENT

- Continuous monitoring
-> Confirmation that the request is made by the converted sterilization method.
- Establishment of the feedback system
-> E.O. gas sterilization other than the sterilization method.
- Implementation of continuous improvement activities
-> New commissioned E.O. gas instruments can be converted into sterilization methods where the instrument is constantly changing.

REFERENCES

- Copenhagen Amendment to the Montreal protocol 1992.

CONTACT INFORMATION

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