

CE Perspectives on HT Policy & Legislation in Japan

Takahiro Hirayama, CCE
Clinical Engineering Center, Okayama University Hospital, Japan

Ichiko Watanabe, Keiko Hukuta, & Tomokazu Nagasawa
International Exchange Committee, Japan Association for Clinical Engineers, Japan

Today's Outline

■ History of CE in Japan

- Clinical Engineering Act
- Curriculum
- The difference CE in Japan and other countries

■ Tasks of CE

- The Guideline of tasks
- Our diversification tasks
- The impact of National fee schedule

■ CE-HTM Leadership Principles

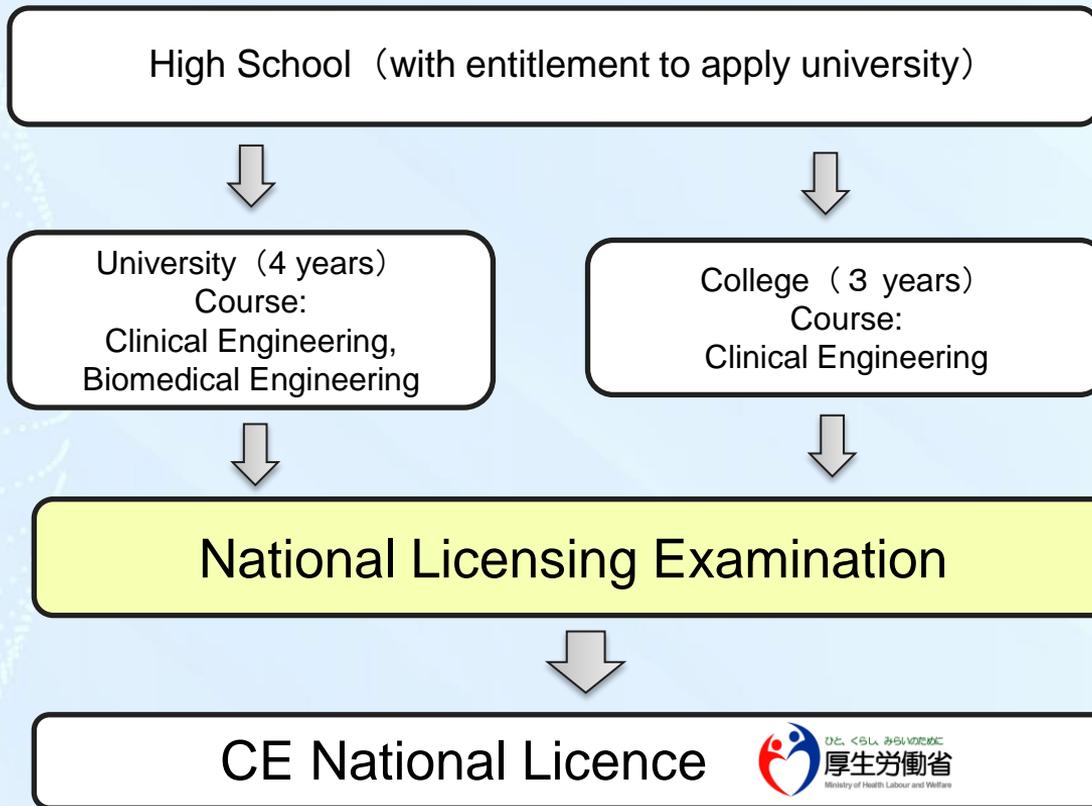
History of Clinical Engineering in Japan

- The Japanese clinical engineering license was established in 1987
CE perform operation, maintenance and inspection of Life-Support equipment*
under Medical Doctor's instruction
- *equipment which substitute parts of ventilation, circulation or metabolic function, or support those function.
- More than 45,000 Clinical Engineers in Japan



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Curriculum



The difference between overseas and Japanese CE

	U.S.	Europe	Japan
Ventilator	Respiratory Therapist	Doctor or Nurse	Clinical Engineer
Cardio-Pulmonary Bypass (CPB)	Perfusionist	Perfusionist	Clinical Engineer
Hemodialysis	Dialysis Technician	Doctor or Nurse Technician	Clinical Engineer
Healthcare Technology Management (HTM)	CE, Biomedical Technician (BMT)	Biomedical Technician	Clinical Engineer

Different kinds of occupation in charge of medical equipment in the U.S and Europe.

Japanese CEs can perform all tasks with a single license

JACE Operational Guideline 2010

- Respiratory Therapy
- Blood Purification
- Heart-Lung machine
- Cardiac Catheterization
- Others(Defibrillator, Pacemaker)
- Intensive Care
- Surgical Operation
- HTM
- Hyperbaric Oxygen Therapy

日本臨床工学技士会 臨床工学合同委員会 2010年10月10日
<http://www.ja-ces.or.jp/01jacet/shiryou/pdf/kihongyoumushishin2010n.pdf>

Representative role of CEs in Japan

Hemodialysis



Technical fee (\$ 200)

Cardio-Pulmonary Bypass



Technical fee (\$ 3000)

Ventilator



Respiratory Care Team (\$ 15/month /patient)

HTM



Medical Devices Safety Management (\$ 10/month/patient)

Diversification of tasks of CEs in Japan

➤ Operating room



Navigation systems



Robotic surgeries (da Vinci®)

➤ Hyperbaric oxygen therapy (HBOT)



Diversification of tasks of CEs in Japan

➤ Catheter room



IVUS



Pace maker



Ablation



Physician assistance

Diversification of tasks of CEs in Japan

➤ Home Care Ventilators



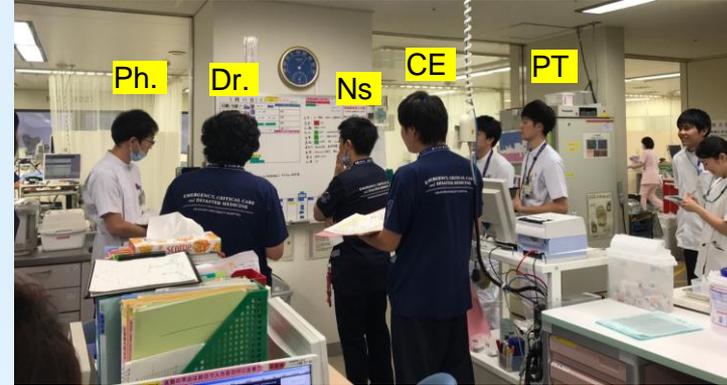
※許可を得て掲載



➤ Endoscopy



Intensive Care Unit



CEs are essential because of their knowledge of engineering and medicine, as well as the ability to provide clinical skills to patients.

Having conferences with Interdisciplinary-professions every day, share patient information to consider treatment strategies and decisions to make.

Makes each specialty a greater force in team medical care

Provision of clinical skills

Blood purification

(Hemodialysis, Plasma exchange, Direct hemoperfusion)

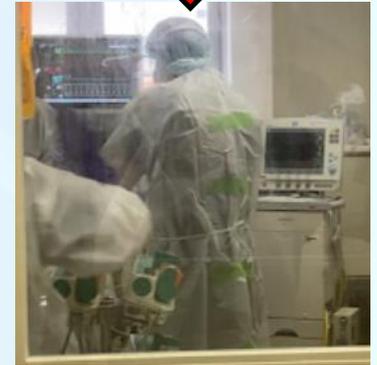
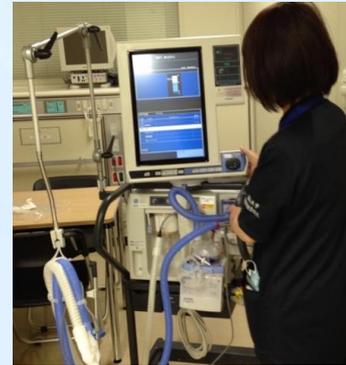
- Assemble the dialysis circuit
- Connect circuit to patient
- Check monitor (pressure, activated clotting time)
- Check circuit



Provision of clinical skills

Respiratory therapy

- Assemble the ventilator circuit
- Check ventilator in operation
- Observe patient's respiratory status
- Suggest configuration changes



Provision of clinical skills

ECMO: Extracorporeal membrane oxygenation

- Give suggestions for device selection
- Assemble the ECMO circuit
- Check the device in operation
- Exam patient's cardiac and respiratory status



The Impact of JACE and Federation to the government for the National Healthcare Insurance System

JACE and Federation acted toward the government resulting in new standard addition to the National Healthcare Insurance; Management cost for Specified Intensive Care units

→ Full-time CE must be on duty for 24 hours in hospital

Since then, the number of medical facilities which arrange CE on overnight or night shifts has been increased for arranging a 24-hour in-hospital CE system.

By this new standard, CE were asked to perform variety of tasks by another units additional to the intensive care duties.

Act revision on policy for treatment involving life-support equipment by CE

- Part of revising act:
 - Taking IV, medication, remove needle and etc regarding the treatment involving life-support equipment by CE
- Overwork of doctors is a problem in Japan
- Shifting or sharing tasks from doctors to other medical staff cover the shortage of doctors.

Each profession is working in cooperation with related societies.



CE-HTM Leadership Principles

These principles need to be learned by all CE-HTM practitioners to advance their careers.

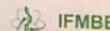
1. **Innovation culture**, eg, create an Innovation culture in all we do; encourage and practice lifelong learning
2. **People-centric**, eg, selfless service to team & others, empathetic, compassionate; priority of patient safety & personalized care
3. **Teamwork & goals driven**, eg, direct teams collaboratively toward shared goals
4. **Adaptive decision-making**, eg, timely analysis and prioritization to resolve challenges
5. **Evidence-based**, eg, scientific use of data, collected systematically, multi-centric, producing unbiased high-quality information
6. **Clinical use of technology**, eg, understand HT applications from both perspectives
7. **'Systems of Systems'-focused**, eg, using our unique SoS perspective to improve healthcare delivery
8. **Communication skills**, eg, understand, articulate clearly, and address various stakeholder needs in a timely manner
9. **Humble**, eg, people value humility and appreciate the respect a leader shows by asking for their input; willing to admit our errors
10. **Integrity & ethics-driven**, eg, observing a code of ethics such as that published by ACCE, which includes recognizing and avoiding activities that create conflicts of interest; see Appendix for ACCE Code of Ethics
11. **Soft Skills**, In our health worker and patient interactions, demonstrate the following: (1) positive greeting, (2) respectful listening, (3) obtain clarity, (4) manage expectations, (5) initiate collaboration, (6) solution driven, and (7) express gratitude
12. **Investing Deeply**, in one another's lives; strong lasting friendships among colleagues where we pray for and encourage one another through good times and bad. The impact of these investments on each other's professional outcomes cannot ever be well understood or measured.

References: 1-10 from CED leaders; 11 from AAMI, see <https://www.aami.org/productspublications/articledetail.aspx?ItemNumber=10501>; 12 from Dr. Jitendar Sharma, India



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| info@ced.ifmbe.org



CE-HTM Leadership Principles

Collaboration with other facilities to develop operations were done →Communication

By having the communication with the doctors and nurses, understanding of needs and expansion on operations were done. →Communication & Clinical use of Technology

ICU, catheterizations, pacemaker, hyperbaric oxygen therapy, endoscope and OR→
Clinical use of Technology

Enter graduate school, to establish the evidence for CE's duty

For example, treatment proposal to doctor based on clinical research evidence



CE-HTM Leadership Principles

Career summary

CEがおこなうことのエビデンスを確立するために、大学院に進学→**Evidence-base**
臨床において研究成果をもとに、治療計画などの提案を行なっている

Enter graduate school, to establish the evidence for CE's duty

For example, treatment proposal to doctor based on clinical research evidence



CONCLUSION

- The Japanese CE is the only certification that is **approved by the government** in the world and can perform **a wide range of tasks**.
- JACE and Federation is acting to the government for the revision of act for CE.
- We participate in **Task sharing** between physicians and other healthcare professions.
(*CE will be allowed to perform intravenous cannulation by the new Act.)

It is important to accumulate and address our evidence of our work for improving our recognition and value in medical practice.



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THANK YOU!



SHEEP-RIN: JACE's mascot character

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