

ISPOR Asia Pacific Conference 2018

Spotlight Session

## Issues and Future Visions for Cost Effectiveness Evaluation of Medical Devices

( Keio Plaza Hotel )

September 9, 2018

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### Agenda

#### ■ **Main issues for cost effectiveness evaluation of medical devices**

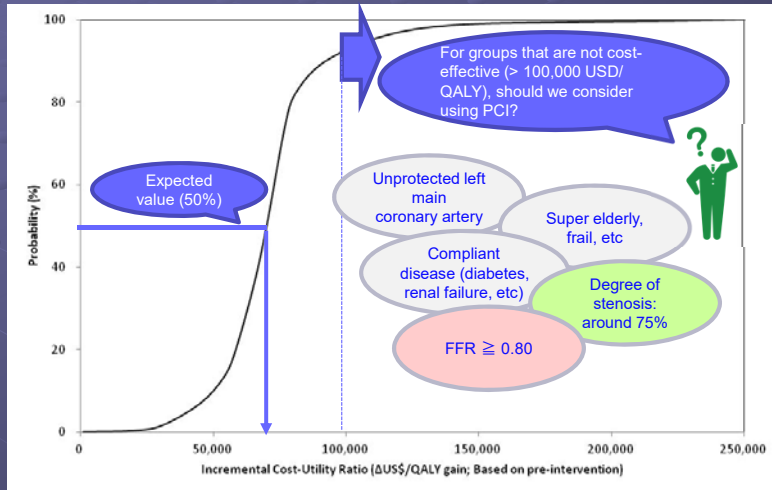
⇒ Provision method, product composition, underlying technology, usage period, improvement frequency, distribution type.

#### ■ **Future visions for cost effectiveness evaluation of medical devices**

⇒ Economic predictability and database of cost-effectiveness evaluation (control, real-world), economic principles (demand and supply).

## Case: Cost-effectiveness analysis of medical equipment (Drug-eluting stent, percutaneous coronary intervention)

- According to prospective cohort and modeling calculations, PCI for stable ischemic heart disease in Japan is a potential cost-effective option. It is important to identify the study population (scope) for cost-effectiveness evaluation of medical devices.



(Source) Tomoyuki Takura, et al. Preliminary report on a cost-utility analysis of revascularization by percutaneous coronary intervention for ischemic heart disease. Cardiovasc Interv Ther. 2016

## Concept of HTA based on the characteristics of medical equipment

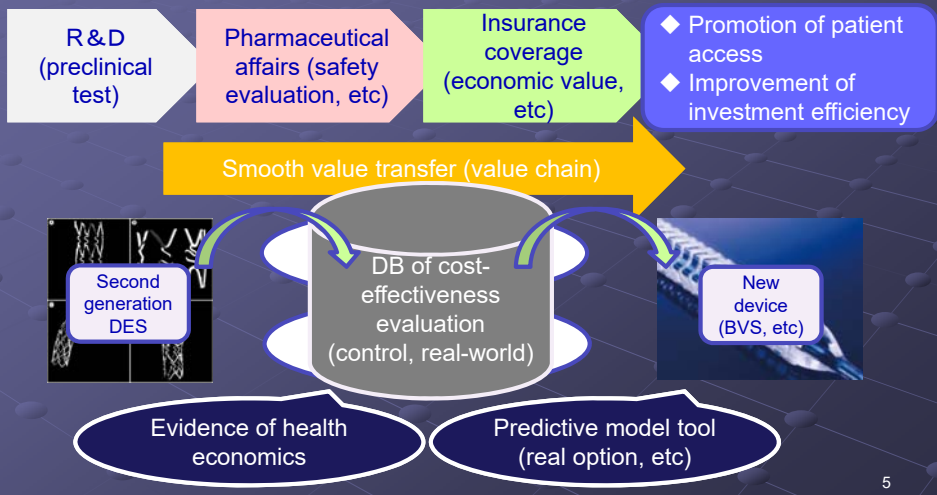
- An evaluation design that accounts for differences in the characteristics of medical devices and ethical pharmaceuticals is needed.

No.	Main characteristics	Points of HTA to note
1	Provision method: Involvement of doctors' procedures	Consideration of bias by technicians
2	Product composition: Combination of multiple technologies	Consideration of operation and product composition
3	Underlying technology: Diverse range (relative)	Consideration of a multifaceted evaluation model
4	Usage period: Long-term use (orthopedic implants)	Consideration of end points in evaluation
5	Improvement frequency: Product life-cycle in the short term	Consideration of the evaluation purpose and analysis method
6	Distribution type: Small lot production of many products	Consideration of the economic efficiency of evaluation
7	Serviceable type: Broad range from patient restriction to patient sharing (Medical materials and durability devices)	Clarification of the purpose and perspective of the evaluation

(Source) 田倉智之. "医療機器・材料の経済性・費用対効果の評価". 世界の薬価・医療保険制度 早引書. 東京: 技術情報協会; 330-332. 2015.より改変

## Significance of discussing economic predictability

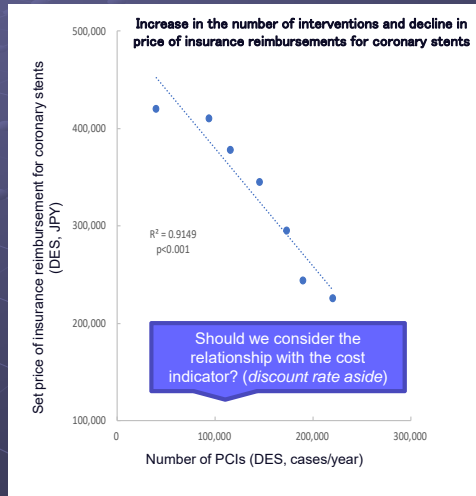
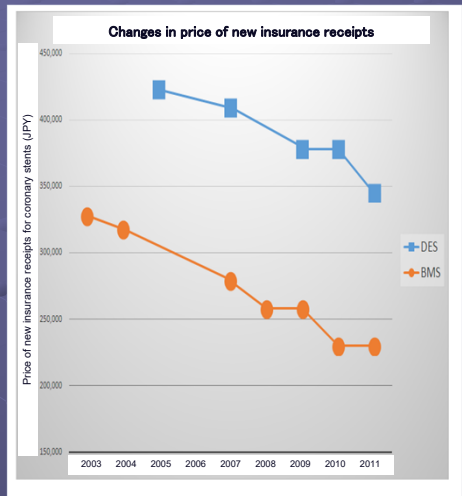
➤ Estimation approaches are indispensable for evaluating new medical devices, and for increasing the recovery of investment (while considering cooperation between pharmaceutical affairs and insurance coverage).



(Source) 医療機器の承認審査と保険制度に関するあり方に関する勉強会(第5回, 田倉智之) 挽地裕, DESの基本構造, 医学のあゆみ, 2009 新家俊郎, 冠動脈ステントの進化, 冠疾患誌 2016

## Case: Insurance evaluation of medical innovation (Drug-eluting stent, percutaneous coronary intervention)

➤ While valuing innovation (DES vs, BMS), prices are also affected by economic principles (demand and supply). Should we consider price fluctuations (semi-market principle) in cost-effectiveness evaluation?



(Source) 田倉智之, 新しい医工学治療の医療経済学的評価, 医工学治療学会, 2016

## Summary

### ■ **Main issues for cost effectiveness evaluation of medical devices**

⇒ An evaluation design that accounts for differences in the characteristics (e.g., involvement of doctors' procedures, product life-cycle in the short term) of medical devices compared to ethical pharmaceuticals is needed.

### ■ **Future visions for cost effectiveness evaluation of medical devices**

⇒ When evaluating the innovation of a medical device, discussions on the predictability model and development of databases (accumulation of evidence) related to cost-effectiveness evaluation are needed.

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**Thank you for your time and attention**

**END**

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