Value-based Reimbursement under the Inpatient Prospective Payment System in Japan

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INTRODUCTION

- Inpatient care comprises about 40% of all insurance claims in Japan in terms of expenditures, and is reimbursed through a mix of prospective payments and fee-for-service payments. Japan's inpatient prospective payment system, which is referred to as the diagnosis procedure combination per-diem payment system (DPC/PDPS) (hereafter "the DPC system"), was formally launched among 82 hospitals in 2003.[1,2]
- The number of hospitals participating in the DPC system has increased substantially since 2003, with 1,730 hospitals participating in the system as of April 2018 – or about 21% of all hospitals in Japan and 30% of hospitals with general beds. The DPC systems comprises about 55% all general beds in Japan overall.[2,3]
- Japan's DPC system has a separate evaluation system, with individual hospitals receiving a reimbursement adjustment based on a number of quality measures. This evaluation system effectively represents a value-based reimbursement process for a sizeable portion of Japan's healthcare expenditures.

OBJECTIVES

- This research provides an overview of the current evaluation system for the DPC system in Japan, and how it has affected reimbursement of inpatient care in Japan.

METHOD

- The composition of hospitals operating under the DPC system and its evaluation process are described. Moreover, an analysis of a portion of the fiscal year 2018 adjustments by region, hospital type, and bed size is presented.
- The impact of the DPC evaluation process and its implications on healthcare in Japan is discussed.

RESULTS

Composition of DPC Hospitals

- Tables 1-3 below show the breakdown of hospitals operating under the DCP system (hereafter DPC hospitals) in Japan by region, hospital type, and bed size as of April 2018. The Kanto and Kinki regions of Japan, which include the two largest metropolitan areas in Japan, Tokyo and Osaka, respectively, have the highest percentage of DPC hospitals, with 44% of all DPC hospitals being located in those regions.

Table 1: DPC/PDPS Hospitals by Region

	Hokkaido/ Tohoku	Kanto*	Hokuriku	Chubu	Kinki**	Chu-Shikoku	Kyushu- Oki	TOTAL
# of hospitals	205	449	145	165	309	185	272	1,730
% of DPC hospitals	12%	26%	8%	10%	18%	11%	16%	100%
% of ALL hospitals with general beds	4%	8%	2%	3%	5%	3%	5%	30%

*Kanto includes the Tokyo Metropolitan Area, **Kinki includes the Osaka Metropolitan Area

- While there are only 82 university hospital systems in Japan, all operate under the DPC system. Some hospitals that meet certain criteria are considered Specified DPC hospitals. Most DPC hospitals are Standard DPC hospitals.

Table 2: DPC/PDPS Hospitals by Hospital Type

	University Hospitals	Specified Hospitals	Standard Hospitals	TOTAL
# of hospitals	82	155	1,493	1,730
% of DPC hospitals	5%	9%	86%	100%
% of ALL hospitals with general beds	1%	3%	26%	30%

- Hospitals with 300 or more beds comprise about 38% of all DPC hospitals, which is higher than non-DPC hospitals. Nonetheless, a sizeable portion of DPC hospitals (45%) are smaller hospitals with less than 200 beds.

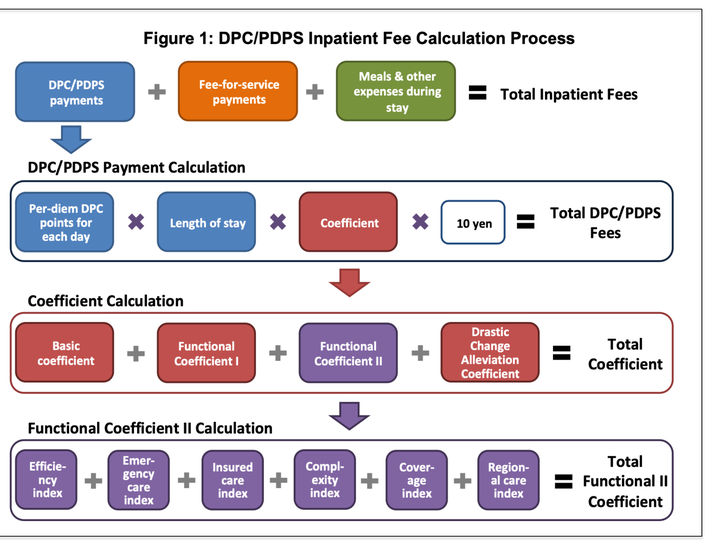
Table 3: DPC/PDPS Hospitals by Bed Size

	Less than 100 beds	100-199 beds	200-299 beds	300-399 beds	400-499 beds	500+ beds	TOTAL
# of hospitals	303	463	317	244	147	256	1730
% of DPC hospitals	18%	27%	18%	14%	8%	15%	100%
% of ALL hospitals with general beds	5%	8%	5%	4%	3%	4%	30%

DPC Evaluation Process

- Figure 1 shows the process for calculating reimbursement payments under the DPC system, and the role that coefficients play in that calculation. The total coefficient is used to adjust the per-diem payment and is comprised of four separate sub-coefficients: the (1) Basic Coefficient, (2) Functional Coefficient I, (3) Functional Coefficient II, and (4) Drastic Change Alleviation Coefficient.
- Moreover, the Functional Coefficient II includes 6 indices that reward hospitals based on the level of care and services provided, which cover things like data provision, steps taken to improve the quality of care, length of stay, complexity and range of care provided, ability to provide emergency care, and provision of regional care.

Figure 1: DPC/PDPS Inpatient Fee Calculation Process



- The Functional Coefficient II is described in Table 4 below.

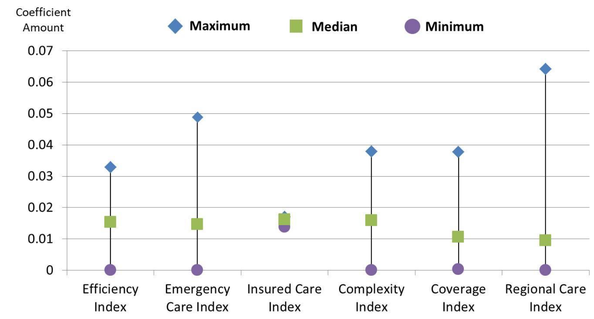
Table 4: Functional Coefficient II Description

- This sub-coefficient is calculated based on 6 indices including the following:
  1. Efficiency index (i.e. length of stay)
  2. Emergency care index
  3. Insured care index (i.e. information provision and care improvement)
  4. Complexity index (i.e breadth of care for each case)
  5. Coverage index (i.e. range of conditions treated)
  6. Regional care index
- The regional care index also includes a scoring based on the 5 conditions (cancer, stroke, myocardial infarction / cardiovascular disease, diabetes, and psychiatric care) and 5 treatment areas (disaster, perinatal, remote, emergency care, and pediatric emergency care) that have been prioritized by the Japanese national government.
- The insured care index includes provision of new input items such as the SOFA score, surgery code, level of care needed, nursing care information, elderly information, and functional independence measures.
- In FY2018 this sub-coefficient ranged from 0.02690 to 0.15270 in FY2018.

FY2018 Evaluation Analysis

- Figure 2 shows the maximum and minimum adjustment awarded for each of the indices included in the Functional Coefficient II and their median values for FY2018.

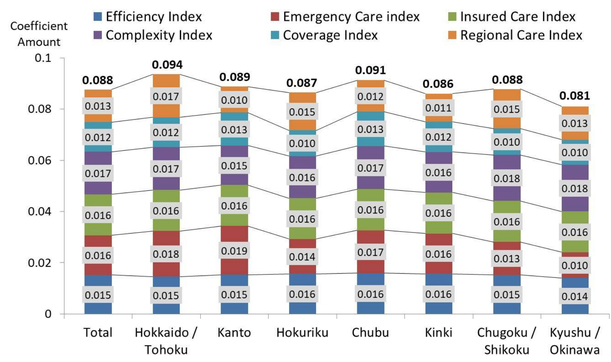
Figure 2: Maximum, Median, and Minimum for Each Sub-Coefficient



Source: MHLW document and author analysis

- Figures 3-5 below show an analysis of the Functional Coefficient II for DPC hospitals in FY2018 by region, type of facility, and bed size. In FY2018 a higher Functional Coefficient II adjustment was allowed for hospitals in the northern Hokkaido and Tohoku regions, on average: driven primarily by greater performance in terms of the provision of regional care and emergency care. Moreover, a somewhat higher reimbursement adjustment was also allowed for hospitals in the Chubu region, on average: driven primarily by greater performance in terms of coverage and emergency care, but also insured care and efficiency.

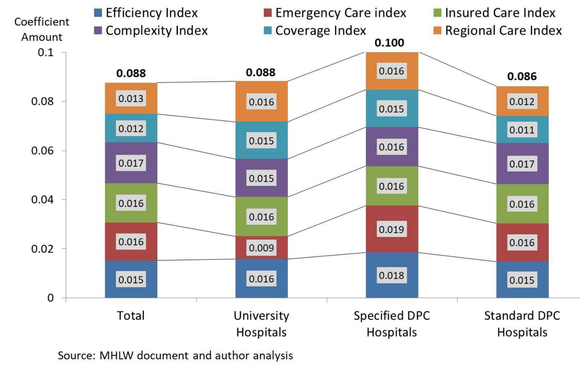
Figure 3: Average Functional Coefficient II Evaluation by Region



Source: MHLW document and author analysis

- In FY2018 a higher Functional Coefficient II adjustment was allowed for Specified DPC hospitals, on average: driven primarily by greater performance in terms of the provision of regional care, coverage, emergency care, and efficiency. Conversely, university hospitals received a lower adjustment than Specified DPC Hospitals, on average: driven primarily by poorer performance in terms of provision of emergency care.

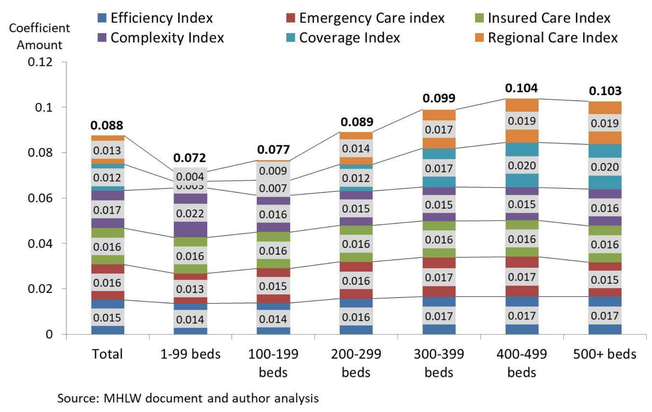
Figure 4: Average Functional Coefficient II Evaluation by DPC Type



Source: MHLW document and author analysis

- Facilities with more beds tend to receive a higher Functional Coefficient II adjustment overall, on average. In particular, adjustments for regional care and coverage (i.e. range of conditions treated) tend to be higher, on average, for DPC hospitals with more beds.

Figure 5: Average Functional Coefficient II Evaluation by Bed Size



Source: MHLW document and author analysis

CONCLUSIONS

- The Functional Coefficient II adjustment alone is responsible for as much as a 15.3% increase in reimbursement for inpatient care for some DPC hospitals in FY2018, and as little as a 2.3% increase for other hospitals. This represents a substantial amount of variability in revenue for DPC hospitals that is based on the value of care provided.
- The rationale for the Functional Coefficient II in terms of the indices it includes and the weight of each index is not very clear. However, it will continue to be an important consideration for DPC hospitals.
- Device manufacturers, for example, may be able to increase the value of their products and services for DPC hospitals by offering products and services that help maximize the Functional Coefficient II. This seems particularly true for smaller hospitals which tend to receive a lower adjustment.

REFERENCES

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PNS118

International Society for Pharmacoeconomics and Outcomes Research (ISPOR) 2019
May 18-22, 2019, New Orleans, LA, USA