In Japan, where people spend public resources when receiving medical services, it is necessary to consider a strategy for reducing the medical economic burden that is increasing each year.1 To address this crisis, the national government introduced the Diagnosis Procedure Combination/Per-Diem Payment System (DPC/PDPS) for acute hospitalized patients.2 In short, DPC/PDPS is a case-mix payment system according to diagnosis and procedures, which consists of 2 elements: flat-fee per day payment and fee-for-service payment. This system currently covers over half of the total hospitalizations.3

Because this system requires each participating hospital to provide data on individual patients, it facilitates the utilization of enormous amounts of standardized clinical data that are of value for clinical research. The Japanese DPC database includes data on the following elements: each patient’s profile (ie, age, sex, height, weight, smoking index); principle diagnoses (coded by the International Classification of Diseases and Injuries, 10th revision), comorbidities at admission (coded similarly); complications after admission (coded similarly); and procedures, including surgery, medications and devices during hospitalization, length of stay, discharge status, and medical expense.4 Data are also available on several disease-specific clinical findings in the DPC database.4

To date, the BPC database has been used for clinical research in various fields. For example, Horiguchi and colleagues investigated the trend of therapeutic options for coronary artery disease. They witnessed marked expansion of percutaneous coronary intervention and a gradual increase in off-pump coronary artery bypass grafting after 2004 when drug-eluting stents were introduced.5 Murata and colleagues6,7 used the DPC database for research on digestive system disease. Higher hospital case volume, expressed as the number of cases during the study period, was associated with higher complication rates for both patients with AMI and those with HF.8 Data also are available on several disease-specific clinical findings in the DPC database.4

As suggested by previous reports, the DPC database has the strength of enabling the conduct of nationwide research of descriptive or analytical epidemiology in the real-world setting of clinical practice. However, several limitations should be acknowledged when considering clinical research that will use the DPC database. First, limited data are available on hospitals’ characteristics and patients’ clinical findings. Second, the DPC database only includes data on outcomes during hospitalization. Therefore, depending on the purpose of the research, there is a need to establish other databases to be combined with the DPC database. In this regard, the vital issue is how to perform such a linkage.

Recently, relevant research has been expanded by linking the DPC database with other databases. One example is the research on cerebrovascular disease by Iihara and colleagues,8 who used the DPC database in conjunction to their own administrative database. They additionally assessed hospital characteristics from the following 5 aspects: personnel, diagnostic techniques, specific expertise, infrastructure, and educational components.8 As a result, more recommended characteristics were associated with increased in-hospital mortality in patients hospitalized for acute stroke, irrespective of stroke type.9

The present issue of the Journal includes a report on similar expanded research on cardiovascular disease. Yasuda and colleagues8 established the Japanese Registry of All Cardiac and Vascular Diseases (ROAD) to collect data on the clinical activity of hospitals having cardiovascular beds, and then added the DPC database. In this report, the authors describe the nationwide current status of clinical practice for acute myocardial infarction (AMI) and heart failure (HF). Hospitals with larger case volume had lower in-hospital mortality rates for both patients with AMI and those with HF.9 In contrast to the minor inter-hospital variation in the prevalence of aspirin prescribed at discharge, each hospital showed a different prevalence of β-blockers and angiotensin-converting enzyme inhibitors [ACEI]/angiotensin receptor blockers [ARB] prescribed at discharge for AMI patients.8 The prescription of β-blockers and ACEI/ARB at discharge, which was less prevalent in HF patients than in AMI patients, varied among hospitals for HF patients as well.9

The DPC database, with linkage to other databases if possible, would be a useful tool for developing nationwide clinical research in Japan. Relevant research would provide evidence that can lead to establishing clinical practice guidelines and...
improving the quality of clinical practice. Evidence from cost analyses would contribute to reducing the medical economic burden. Because cardiovascular disease is the second leading cause of death in Japan\(^6\) and the first leading cause of national medical expense,\(^4\) further accumulation of relevant evidence is necessary in the field of cardiovascular disease.

**References**