

Thai experiences in developing own DRG system

Thailand envisioned that diagnosis related group (DRG) could be a payment reform tool for the universal health coverage policy since 1993. The Health Systems Research Institute started funding the first piece of DRG research 25 years ago. The researcher was fortunate to discuss with Professor Robert Fetter, the founder of the US DRG on the approach of Thai DRG (TDRG) research from accident and emergency DRG to cover all DRG in the low-income card scheme then expanded to all inpatients of all payment schemes.

The first code sets used for TDRG in 1993 were ICD-10 for diagnosis and ICD-9-CM for procedure. These environments pushed us to stand on own DRG system since the start. International consultations for Thailand health systems reforms around the millennium with proprietary DRG systems shed some lights that own DRG system would be more affordable for the 2001 universal health coverage big bang reform. In 2003, the TDRG version 3 (a shift from the US-based TDRG to the Australian-based TDRG with severity level) was launched to support implementation of TDRG inpatient payment to all including teaching hospitals.

Research on DRG payment reforms opened the option of applying traditional case-based DRG in the US system with DRG allocation within a global budget cap as in the Australian resource allocation formula. The National Health Security Office, the first biggest adopter of TDRG applied exclusive capitation budget allocation to provinces, with TDRG version 3 and global budget for inpatient since 2003.

Unique characteristics of TDRG have been accumulated, such as reclassification based on bilaterality and multiplicity of treatment procedures since TDRG version 4. TDRG version 5 was the biggest 2,450 DRGs with the expansion of concept to cover sub-acute care and psychiatric casemix. It is TDRG version 5 that was adapted to the Vietnam DRG and the Indonesian DRG.

The transfers of know-how of TDRG development to the Vietnamese (Tuan et al 2015) and Indonesian teams were based on the concept of developing own country DRG systems. The domestic core team developers worked with technology transfer team from Thailand in successive sessions. The domestic core team developers then worked with specialists from individual colleges of physicians to construct country specific DRG classification trees. A mini-DRG grouper was developed by domestic core team (IT specialist) to help batch grouping of DRG as adopted by clinical experts. Claim data of the country data warehouse were used to simulate DRG classification as well as relative weight calibration. Statistical analyses applied the reduction in variance (RIV) to prove high heterogeneity between groups and coefficient of variation (CV) to prove high homogeneity within group. The process took long time but would be sustainable human resource development.

TDRG has advanced to version 6 in 2018. More data mining from the country claim data has delivered more meaningful cost and clinical complexity table for future casemix developments. This knowledge has been built up from our own DRG system.

Reference:

Pham Le Tuan, Vu Thanh Nam, Tham Chi Dung, Cao Ngoc Anh, Nguyen Thi Huong, Nguyen Nam Lien, Chairaj Zungsontiporn, Orathai Khioacharoen, Supasit Pannarunothai (2015). Adopting Thai Diagnosis Related Group for Vietnam Universal Health Coverage: a case of Ba Vi district hospital. *Siriraj Medical Journal*, 67:227-234.