# 影響 Tw-DRGs 病例組合指標相關因素之探索性研究

## －以 2002 - 2005 年健保資料庫爲例

# The Exploratory study of the related factors of Tw-DRGs case mix index－Examples from National Health Insurance 2002-2005 Database


中文摘要

中央健康保險局爲了控制不斷上漲的醫療費用，2002 年於醫院施行總額支付制度，限制醫療費用的成長，並於 2004 年積極推動台灣版診斷關係群（Taiwan Diagnosis Related Groups, Tw-DRGs），以提昇醫療院所管理效率，合理分配醫療資源。本研究欲瞭解政府宣佈 DRGs 實施時程後，醫院的申報行爲是否隨著實施 DRGs 時程的接近，醫院病例組合指標(Case Mix Index, CMI)有逐漸上升的現象，醫療費用愈高之醫院其 CMI 値是否愈高，並進一步探討影響 CMI 之相關因素，以作爲未來主管機關政策制定及醫院經營管理之參考。

本研究資料來源包括國家衛生研究院健保資料庫之健保申報資料：2002 ~2005 年住院病患之「醫事機構基本資料檔」及「住院醫療費用清單明細檔」，合併健保局「第三版權値表」後，試算各醫院 CMI 値，再以 SAS 9.1 統計軟體進行資料分析，控制醫院特性後，投入每日住院費用、平均處置數、有合併症與併發症比率、死亡率、十四天同科再入院率和平均年齡，檢定其對 CMI 之影響。

結果顯示愈接近 DRGs 支付制度實施時程，CMI 値愈高，尤其 2005 年上升速度最快；以複迴歸模式控制醫院特性後發現：每日平均費用、合併症與併發症比率、平均處置數、死亡率、十四天同科再入院率和平均年齡均爲預測 CMI 之顯著變項， 2002 ~2005 年之解釋力(R2) 均達 70%以上，其中又以平均每日住院費用對 CMI 解釋力最大，另 2002~2004 年十四天同科再入院率對 CMI 之解釋力僅次於每日醫療費用，2005 年則爲合併症與併發症比率。美國及後續施行 DRG 國家文獻證實，醫院可經由增加次診斷數、合併症與併發症來提升 CMI，並藉此來增加醫院之醫療給付，而我國 2002~2005 年合併症比率與平均次診斷數均呈現上升趨勢，但此結果是因醫院高報行爲(upcoding)或編碼品質提升造成，有待後續研究予以釐清。

本研究雖證實醫院特性、醫療資源耗用、診斷數、合併症與併發症和醫療品質指標、年齡對 CMI 均產生影響，但因國內 DRG 尚未真正施行，一旦未來實施 DRG，本研究結果可作爲參考比較之依據，且醫院可能藉由高報行爲行爲來獲利，相關單位應作長期監控，以避免此類弊病發生。另外可參考美國 MS-DRGs 將合併症與併發症區分爲有主要合併症與併發症、有合併症與併發症、無合併症與併發症，取代我國目前僅區分爲有與無兩種，藉此提升資源耗用和疾病嚴重度的解釋

力。

英文摘要

In July of 2002, The Bureau of National Health Insurance( BNHI )implemented global budget system in order to control the increasing cost of medical care services, and limited the growth of the medical cost. In the meantime, BNHI also actively promoted Taiwan Diagnosis Related Groups（Tw-DRGs）from 2004 to enhance efficiency of health care organizations management and ration of medical resources distribution. This study aimed to understand whether hospital behaviors will be changed after BNHI announced the implementation plan of DRGs by examining the ascension of Case Mix Index（CMI）, especially when closing to the adoption period of Tw-DRGs. We also interested whether the hospital costs are varied with the CMI, and the related factors of Tw-DRGs CMI. These findings could be used as references for national policy making and hospital management.

The 2002-2005 BNHI population-based databases which comprised of hospital profile and inpatient claim data merged with the relative weights of Taiwan DRGs version 3 (Tw-DRGs, 3.0) were used as our research materials. After controlled hospital characteristics, we ran the SAS 9.1 software to test the related factors of Tw-DRGs CMI such as daily medical cost , length of stay（LOS）, hospital comorbidity and complication (CC) rate, death rate, readmission rate (14-day), the annual average number of diagnoses codes, the annual average number of operation codes and patient average age.

We found CMI was increased yearly when closing to the Tw-DRGs adoption period, especially in 2005. The explanation power of models' R2 were all above 70% which used the multiple linear regression analysis under controlling of hospital characteristics. The results showed variables such as daily medical cost, length of stay（LOS）, comorbidity and complication rate, death rate , readmission rate (14-day), the annual average of diagnoses codes, the annual average of operation codes and average age were significant. Hospital daily medical cost had the highest weight to explain CMI. Refer to the experiences of US and other countries which had implemented DRGs, hospitals could be paid more by increasing the numbers of comorbidity and complication (CC) and diagnosis. Although our study found hospital CC rates were also increasing during 2002~2005, we could not tell they were caused by hospital upcoding or improved coding skills. Although this study has verified CMI could be influenced by hospital characteristics, medical resource utilization, average number of codes , average number of hospital CC, medical quality indicators and age., Taiwan has not really implemented DRG yet, so this exploratory study findings could be a reference for the future researches. BNHI could take a long-term database

monitoring to prevent hospitals upcoding. Furthermore We can refer to the Medicare-Severity DRGs (MS-DRGs) which derived from original CCs into major CC（MCC）、CC、non-CC to raise the explanatory power of resource utilization and severity of illness.