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A Systematic Review on Patients Classification System (specific to Diagnosis-Related Group) for Health Care Services worldwide.

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Summary

In the 1990s, high-income countries began adopting diagnosis-related group (DRG)-based payments to accelerate progress towards universal health coverage. New variations of the original DRG system were created to address its limitation. A systematic review was done to determine the patients classification system used worldwide for healthcare services The articles chosen are from credible database such as Scopus and Science Direct and contain keywords such as Diagnosis-Related Group (DRG), Prospective Payment System and Casemix. The similarities found is that most of the classification system used is based on the ICD-10 and is modified based on their usage and objectives.

Introduction

In most high-income countries in the 1990s, diagnosis-related group (DRG)-based payments have steadily taken the lead in paying hospitals for acute inpatient care (1). The main goal for this implementation is for achieving a faster move toward universal health coverage (1). Based on the original DRG system, new systems were then created to address specific limitations in the original DRGs (2). Some of the new DRG system that was created in the United States are: Medicare DRGs, Refined DRGs (RDRGs), All Patient DRGs (AP-DRGs), Severity DRGs (SDRGs) and All Patient Refined DRGs (APR-DRGs) (2). Other countries have also implemented or adopt DRG system for their own healthcare system. In Australia, they have implemented the original DRG as their basis of their Australian Refined Diagnosis Related Groups (AR-DRG) (3). In Korea, the K-DRG was created based on the U.S. Refined DRGs (4)

Method

A systematic literature review has been done to identify the types of DRGs available based on countries and the strengths and weaknesses each DRG system to determine the best method to apply DRG system for emergency department in Malaysia. The database that has been used to find the papers are Science Direct, Scopus, Semantic Scholar, Academia and Korean Science. Several keywords were chosen to find the papers such as: diagnosis-related group, prospective payment system, casemix, payments systems, efficiency and K-DRG.

Results and Discussion

It can be seen that each DRG system have their own strengths and weaknesses. For Australia, the AR-DRG is created to focus more on inpatient care in public hospitals. However, its drawback is its DRG classifications, as Australia has a relatively small national population. In Korea, several groups in Refined DRGs could not be distinguished in K-DRGs due to a lack of medical data, and due to the procedures, that were not used in Korea (4). It was later then revised in 2003 by modifying the complexity adjustment method of the Australian Refined Diagnosis-Related Group (AR-DRG) (5). From this it can be said that each country DRG system has its advantages and disadvantages are focused at some variables for each has their own socio-political factors, the quality and depth of the coded data available to characterize the mix of cases in a healthcare system, the size of the underlying population, and the intended scope and use of the classification (3). Some countries however do not implement the DRG system in their healthcare due to lack of funding to apply the DRG system or preferring to use other methods. One of said country is Japan. In 1998 Japan has implemented the DRG system on a trial basis, the result shows it did not achieve a reduction in the average length of stay. Due to this. the Japanese Medical Association (JMA) believe that by implementing DRG system could potentially lead to healthcare system distortions like ineffective inpatient care management, a rise in readmissions, and an overuse of outpatient care.

Table 1: Strength and weaknesses for each DRG by country.

Country	DRG System Available	Strengths	Weaknesses
United States of America	Medicare DRG	Covers a broad range of patients in an acute care hospital, Incentivises efficiency.	Only for Medicare covered patients.
United States of America	APR-DRG	Covers non-Medicare covered patients, predictability with financial planning and budgeting.	Limited data availability for some patients, more complex than Medicare DRG.
Australia	AR- DRG	Focus more on inpatient care	Lack of DRG classifications
South Korea	K-DRG	Focus on diseases and procedures available in South Korea	Less number of groups available
Thailand	TDRG	Incorporates the complexity of multi-payer system of Thai UHC	Still under improvement by expanding the DRG.

Conclusion

When creating a new DRG system to their healthcare system, several factor such as the socio-political factors, the country's health insurance schemes and the country's healthcare abilities and funding should be considered. The implementation shows that it can improve overall healthcare and can improve data collection for future advances.

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