PO039

A Length of Stay Comparison of ER Observation Patients among Taiwan Medical Centers from 2013-2016

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Objectives

The Ministry of Health and Welfare (MOHW) entrusted Joint Commission of Taiwan (JCT) to establish the mission indicator reviewed mechanism for medical center in Taiwan, including assessment standards, contents, data sheets, and processes published in 2011. The medical center applied for hospital accreditation in 2016-2017 should accomplish and pass the mission indicator review in necessary. In addition, emergency department (ER) overcrowding of Taiwan medical center were always been concern. According to previous studies, a well functionally ER could assist physician made right clinical decision and reduced medical expense of patient. However, the efficiency of ER might be effect by several factors such as triage error and overcrowding. Therefore, we attempted to set an assessment standard among mission indicator and expected that ER overcrowding of Taiwan medical center could reduce through the mission indicator review.

Table 1. The average rates of ER patient stayed observation time over than 24 and 48 hours of medical centers in Taiwan from 2013-2016.

Year	ER patient	Stay observation time (%)	
		> 24 hours (mean ± SD)	> 48 hours (mean ± SD)
2013	1,835,114	7.6 ± 4.2	3.1 ± 2.5
2014	1,891,828	7.7 ± 4.0	3.0 ± 2.3
2015	1,934,625	7.1 ± 3.6	2.5 ± 1.9
2016	1,995,803	6.4 ± 3.5	2.1 ± 1.7

Table 2. The variance of ER patient stayed observation time with the number of bed, doctor and patient of Taiwan medical centers in 2016.

	Stay observation time (%)					
	>24 hours (mean ± SD)	F	*p*	>48 hours (mean ± SD)	F	*p*
ER observation bed						
< 49	5.3 ± 2.7	3.0	0.07	5.2 ± 3.4	3.9	0.04
50-99	11.5 ± 3.4			1.9 ± 1.0		
≧100	11.0 ± 3.2			1.9 ± 1.4		
ER doctor						
< 20	5.0 ± 3.0	1.0	0.39	1.7 ± 1.5	0.4	0.70
20-39	7.5 ± 3.7			2.5 ± 2.1		
≧40	6.4 ± 2.3			2.4 ± 1.2		
ER patient						
< 80,000	6.6 ± 4.8	0.1	0.95	2.0 ± 1.6	0.9	0.91
80,000-99,999	7.3 ± 1.5			2.1 ± 0.0		
≧100,000	6.5 ± 3.1			2.4 ± 2.2		

Methods

There were total 31 assessment standards been classified into 5 mission indicators. The mission indicator reviewed process including prior data reviewed and on-site interviewed. The medical center should report the implementation of past 4 years of each assessment standard of mission indicators actually. Then surveyors used related evidence provided by MOHW to review the authenticity of data reported by medical center and made suggestions. According to the suggestions, medical center revised the data and reported during on-site interview. The surveyors would give grades to medical center and scored more than 80 could pass the review. Mission one was an indicator for monitoring medical center to provide heavy and difficult disease patients medical service and continuous quality improvement. We selected part of evidence of mission one's assessment standard "1.1.3: The proportion and service quality of heavy and difficult disease patients in emergency department (ER) is suitable" to analyze the long-term trend of ER patient stay observation time. The aforementioned data provided by MOHW were used analysis of variance to estimate the association of ER patient stay observation time with several factors as ER bed, ER doctor and ER patient from 2013-2016.

Results

Although the ER patient of medical centers (N=19) in Taiwan were increase from 2013-2016, but the average rates of ER patient stay observation time over than 24 and 48 hours were both a continuous decrease trend since 2013 shown as Table 1. The decrease rate of stay observation time over than 24 and 48 hours were 15.6% and 33.7% respectively.

The results of analysis of variance between ER patient stayed observation time with the number of ER observation bed, ER doctor and ER patient shown as Table 2. The results showed that among the variables, the number of bed was statistically significant ($p<0.05$) in the group of ER observation bed that stay observation time more than 48 hours.

Conclusion

All ER patient stay observation time over than 24 and 48 hours of medical centers in Taiwan are a continuous decrease trend from 2013-2016. The results demonstrate that medical center focus progressively on assessment standard of mission indicator review. The present study indicates that medical centers' ER patient stayed observation time prolonged could be decrease through assessment standard designed for mission indicator review in hospital accreditation. However, the monitoring of overcrowding of ER is not only patient stay time but also related to its final destination distribution such as go home or admission department, and need further more attention to care about ER doctor manpower. In the future, we will keep focus on the development of assessment standard of mission indicator review to lead medical centers continuous improvement in medical service quality.

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