

Conference Paper

The Implications of National Health Insurance on District Public Hospitals Performance: Financial Analysis

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Abstract

The 2014 implementation of National Health Insurance (NHI) in Indonesia transformed most hospital payment systems from fee-for-service into prospective payment systems based on Indonesian Case Base Groups (INA-CBG's). Due to this change, hospital management groups should focus on integrated strategies to minimize cost, eliminate waste, and improve business process efficiency which referred to clinical pathways as the standard of professional services. The purpose of this study is to determine the effect of NHI on financial performance and hospital base rate (HBR) of district public hospitals. In order to conduct financial analysis, this study utilizes financial reports from 2012-2015 in two type C public hospitals in Sukabumi. From 2012-2015, there was an increase in both total and current assets, primarily in cash and cash equivalents, which increased significantly after NHI implementation in 2014. Liabilities also increased during this period. Hospital revenues increased while revenues from the regional government budget or "Anggaran Pendapatan dan Belanja Daerah (APBD)" decreased following NHI implementation. Expenses increased also, but at a lower rate than other increases. Given financial ratios, overall hospital performance improved following NHI implementation.

Keywords: NHI, financial performance, hospital base rate, district public hospital.

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1. INTRODUCTION

In January 2014, the Indonesian government established a mandatory National Health Insurance (NHI) for the welfare of Indonesian citizens. The move was part of the gradual move towards Universal Health Coverage (UHC) anticipated to be completed in 2019. One of the aims of NHI implementation was protection of Indonesian people from high health care costs due to the uncertainty in medical care [8].

The implementation NHI changed the hospital payment system from fee-for-service into a prospective payment system based on Indonesian Case-Based Groups (INA-CBG's). Fee-for-service is a retrospective payment system in which the payment is made after the service has been provided. INA-CBG's is the maximum amount allowed for Badan Penyelenggara Jaminan Sosial (BPJS) claim based on the group of disease or medical procedure. INA-CBG's fare is differentiated by area or region and type of the hospital.

Diagnosis-Related Group (DRG) was introduced in 1990 in several countries in an effort to prevent the escalation of health care costs. One of the advantages of DRG's payment system was an increase in hospital efficiency and transparency, as well as a reduced average length of stay [5].

Hospitals should create a strategy for change in order to survive in the era of NHI, particularly public hospitals that are funded primarily by NHI participants. Since the number of patients in hospitals are increasing in the era of NHI, exceptional performance is required to raise hospitals' income. Hospital management should focus on integrated strategies to minimize cost, eliminate waste, and improve business process efficiency that refers to clinical pathways as the standard of professional services. One indication of hospital performance is its financial statement.

One study in China showed that health care reform can significantly reduce total hospitalization expenses and medication fees for patients who selected the pilot hospital [11]. Under a universal coverage system, the introduction of DRG-based payments resulted in shortened length of stay and reduced intensity of care for patients in Taiwan [1]. DRG-based payments addressed some of the chronic problems in the French hospital market as well, improving accountability and productivity of healthcare facilities [7].

In the first 4 months of NHI in Indonesia, the INA-CBG's fare was lower than hospitals' fares, BPJS was found to have a delay on claim payment [9]. These conditions impacted cash flow and overall financial condition of hospitals. After the implementation of NHI in Indonesia, there was an increase of average revenue, especially from the service activities of 31 state hospitals under the Ministry of Health. There was also a decrease in hospitals' receivable collection periods and a significant increase in their liquidity [10]. The purpose of this study is to determine the effect of NHI on financial performance of district public hospitals.

2. METHODS

This study used financial statements, hospital profiles, and data from reports by two type C district hospitals in Sukabumi. These reports contained general information about the health care facilities from 2012-2015.

The financial statements collected included balance sheets, statements of operations, statements of cash flows, and accompanying notes. To make the financial statements more useful for decision-making and to help indicate work performance, analyses were performed including variance analysis, growth analysis, financial ratio analysis, and regression, correlation, trend, and prediction analysis [4, 6]. Ratio analysis compares numbers of financial statements with each other to gain insight from the relationship among them (Finkler, 2001).

The growth analysis was done horizontally (dynamically) and covered the assets, liabilities, revenue, and net proceeds. Financial ratio analysis was also performed including liquidity, leverage, and activity based on government regulation that was "Pedoman Penilaian Kinerja Badan Layanan Umum Bidang Layanan Kesehatan" on Perdirjen Nomor34/PB/2014 [6] (Finkler, 2001). To evaluate the hospitals' performance in the public sector, the independency ratio has been analyzed.

3. RESULTS

3.1. General Description

The hospital characteristics involved in this study are presented in Table 1. Even though both hospital A and hospital B are type C hospitals, hospital A is larger and its profile showed more advanced infrastructures (characteristics) when compared to hospital B. The general utilization of both hospitals is presented in Table 2.

TABLE 1: Hospital characteristics.

Description	Hospital A	Hospital B
Established	1970	2002
Type	C	C
Status	BLUD	BLUD
Land area	5 Ha	91,780 m ²
Building area	19,983 m ²	2,216 m ²
Number of staff	389	584

TABLE 2: General Utilization, 2012-2015.

Description	Hospital A				Hospital B			
	2012	2013	2014	2015	2012	2013	2014	2015
Number of outpatient visits	55,288	59,526	77,634	103,044	10,900	11,556	18,669	255,988,589
Number of inpatient visits	18,285	18,614	23,676	22,503	5,421	7,623	7,733	7,640
Number of ER visits	35,094	34,427	31,442	22,968	6,722	7,827	8,299	108
Number of beds	206	214	334	359	99	110	108	66
BOR (%)	79	76	66	68	44	52	60	
ALOS	2.9	2.77	2.77	4.12	3	3	3	4

3.2. Financial Statement Analysis

The financial statement analyses of hospital A and hospital B are presented in Table 3 and Table 4, respectively. It was assets, liabilities revenues, and expenses.

3.2.1. Assets

Total assets increased each year, with the exception of 2015 wherein total assets at hospital B decreased slightly, caused by fixed assets depreciation. Even though the value of total assets and fixed assets increased year-over-year in hospital A, the percentage of change compared consistently decreased during 2012-2015. In hospital B during 2014, the percentage of change in total and fixed asset value increased compared to 2013, but then decreased in 2015 compare to 2014, as presented in Table 4. There were significant increases in current assets in 2014 for both hospitals, but they then decreased the following year.

There were significant increases in the percentages of change in cash and cash equivalents in 2014 (785% in hospital A and 842% in hospital B) but significantly decreased in 2015.

Accounts receivable in hospital A consistently decreased in the years after the implementation of NHI, while accounts receivable in hospital B decreased towards the first year after implementation but then rose in the years after. Inventory also increased in both hospitals, though not significantly.

TABLE 3: Financial Statement Analysis on Hospital A.

Financial Statement Analysis	Billion IDR				Rate of Change (%)		
	2012	2013	2014	2015	2013	2014	2015
Assets							
Current Assets	11,308	17,420	34,961	44,910	54	100.7	28.5
Cash and cash equivalent	3,124	2,018	17,859	24,904	-35.4	784.8	39.4
Accounts receivable	5,173	12,691	13,422	13,774	145.3	5.8	2.6
Inventories	3,010	2,710	3,679	6,321	10.6	35.8	69.4
Fixed Assets	47,713	65,048	67,070	62,906	36.3	3.1	-6.2
Total Assets	59,022	82,469	102,520	108,254	39.7	24.3	5.6
Liabilities	5,897	9,160	12,106	7,426	55.3	32.2	-38.7
Revenues							
Hospital Revenue	29,245	43,307	70,173	92,716	48.1	62	32.1
Local Gov. Budget (APBD)	28,946	36,267	33,947	27,006	25.3	-6.4	-20.4
National Gov. Budget (APBN)	14,658	10,730	-	-	-26.8	-100	-
Expenses	52,299	71,398	87,174	109,307	36.5	22.1	25.4

3.2.2. Liabilities

Total liabilities significantly increased in both hospitals from 2013 to 2014. The most significant raise happened in hospital B, where the percentage of change reached 915% because the new infrastructure development payment was due in 2015. Liabilities decreased for both hospitals in 2015.

3.2.3. Revenues

Total revenue and hospital revenue increased after the implementation of NHI, while local government budget (APBD) decreased. The percentage of change showed that total revenue decreased in both hospitals, while hospital revenue increased in the first year of implementation and decreased in the following years. The local government budget in hospital A decreased consistently after the health care reform, yet decreased in hospital B initially then increased in 2015, as presented in Table 3 and Table 4.

TABLE 4: Financial Statement Analysis on Hospital B.

Financial Statement Analysis	Billion IDR				Rate of Change (%)		
	2012	2013	2014	2015	2013	2014	2015
Assets							
Current Assets	4,090	6,136	13,699	16,587	50	123.2	28.5
Cash and cash equivalent	0,911	0,931	17,859	8,233	2.2	842.1	-6.2
Accounts receivable	1,206	2,583	13,422	13,774	114.2	-39.2	150.1
Inventories	1,972	2,620	3,349	4,422	32.9	27.8	32
Fixed Assets	25,174	33,269	52,716	46,841	32.2	58.5	-11.1
Total Assets	29,265	39,406	66,415	63,724	34.7	68.5	-4.1
Liabilities	0,623	1,186	12,050	3,028	90.3	915.3	-74.86
Revenues							
Hospital Revenue	9,609	12,665	28,075	32,569	31.8	121.7	16
Local Gov. Budget (APBD)	11,966	19,258	17,907	33,608	60.9	-7.02	87.7
National Gov. Budget (APBN)	-	-	-	-	-	-	-
Expenses	17,054	23,175	30,107	61,430	35.9	29.9	104

3.2.4. Expenses

Although expenses increased in both hospitals in 2014 after NHI implementation, the percentage of year-over-year change was lower in 2013. Expenses, especially in non-operating expenses, and their percentage of change were higher in 2015 (see Tables 3 and 4).

3.2.5. Net proceeds

Hospital A saw a decrease in net proceeds during 2012-2014, while hospital B saw an increase in net proceeds near the beginning of health care reform (2014), followed by a fall during 2015. Without local government budget, hospital A's deficit rate would have decreased. However, as local government budget dropped, net proceeds decreased. Without this additional budget, hospitals would have difficulty covering all their expenses. Conversely, net proceeds at hospital B increased significantly in 2014 after a deficit in the year before. But that same year, hospital infrastructure development increased hospital expenses, causing a large deficit in 2015 even though the local government added funding (see table 5).

TABLE 5: Net Proceeds of Both Hospitals.

With and Without Local Gov. Budget (APBD)	2012 IDR	2013 IDR	2014 IDR	2015 IDR
Hospital A				
With APBD	20,551,583,897	18,906,673,565	16,946,176,843	10,414,870,820
Without APBD	-23,053,902,312	-28,091,595,660	-17,001,572,566	-16,591,869,171
Hospital B				
With APBD	911,449,571	-25,785,690	7,923,217,872	-544,487,588
Without APBD	-11,054,680,176	-19,284,678,693	-9,984,375,260	-34,152,602,289
APBD: "Regional Revenue Budget"				
IDR: Indonesian Rupiah				

3.3. Financial Ratios

The liquidity ratio of hospital A consistently increased year-over-year during 2012-2015, especially after the implementation of NHI, as seen given the current ratio, quick ratio, and cash ratio during that time. Conversely, the liquidity ratio of hospital B decreased from 2012-2014, with a significant decrease in 2014, then climbed considerably in 2015. In 2014, hospital B's infrastructure expansion decreased liquidity due to an increase of current liabilities. Though hospital B's liquidity decreased in 2014, its current ratio was still above 100 percent, which is considered good and indicates the capability to pay current liabilities using current assets.

The leverage ratio was very low in both hospitals during 2012-2015, indicating total liabilities were much lower than both total assets and equities. Government hospitals generally have low rates of current liabilities compared to assets and equities. In hospital A, leverage ratio was near constant during 2012-2014 and decreased slightly in 2015. In hospital B, current liabilities increased significantly (915%) in 2014, making a large increase in leverage ratio compared to 2013. Leverage ratio then decreased in 2015. See Tables 6.

Account receivable turnover period (in days) consistently decreased in both hospitals following the implementation of NHI. However, in hospital B, it increased again in 2015. Initially after health care reform, inventory turnover decreased in both hospitals, but increased again in 2015. Fixed and total assets turnover significantly increased for both hospitals, especially after NHI implementation. Independent ratios also significantly increased after health care reform in both hospitals (see Table 6).

TABLE 6: Financial Ratios of Both Hospitals.

Financial Ratio	RSUD A				RSUD B			
	2012	2013	2014	2015	2012	2013	2014	2015
Liquidity								
Current Ratio	1.92	1.9	3.01	6.43	6.56	5.17	1.14	5.48
Quick Ratio	1.41	1.61	2.69	5.54	3.4	2.96	0.86	4.02
Cash Ratio	0.53	0.22	1.54	3.56	1.46	0.79	0.73	2.72
Leverage								
Debt to Total Asset (%)	10	11	12	7	2	3	18	5
Debt to Equity (%)	11	12	13	7	2	3	22	5
Activity								
Account receivable turnover period (in days)	65	107	40	55	46	76	20	44
Inventory Turnover (in days)	38	23	19	25	75	76	44	50
Fixed Asset Turnover (%)	61	67	105	147	38	38	53	70
Total Asset Turnover (%)	50	53	68	86	33	32	42	51
Independent Ratio (%)	67	92	207	343	81	66	157	97

RSUD: "Rumah Sakit Umum Daerah"

4. DISCUSSION

The purpose of the NHI payment system reform from fee-for-service to a prospective payment system based on INA-CBG's was to improve hospital performance. Given the number of patient visits in both hospitals, there was a significant increase in hospital utilization, after the implementation of NHI in 2014. This finding is consistent with a study that showed the impact of a massive expansion in Japan's health insurance program on health care utilization and health outcomes. The Japanese study showed a substantial increase in health care utilization measured in terms of admissions, inpatient days, and outpatient visits to hospitals [3].

Emergency room (ER) visits increased near the beginning of NHI implementation in 2014, but subsequently decreased in 2015. This finding might indicate that non-emergency care provided in the ER decreased. The increase in patient visits was followed by a significant increase of hospital revenue in 2014, while the percentage of change of hospital expense decreased. This caused net proceeds to increase in both hospitals, as seen with the decrease of hospital deficit even without additional budget from local government.

In the beginning of NHI implementation, generally hospitals were able to manage their performance, which resulted in significant increase of hospital revenue. This

increase also affected the increase of independent ratios in 2014, even with a lower supporting budget from local government.

While hospital revenues increased from 2014 to 2015, the percentage of change decreased and expenses increased causing net proceeds to decrease.

Hospital management needs to evaluate organizational performance, especially with non-operating expenses, whether it is already based on needs. Leadership should also identify possible waste and irrational cost in order to increase revenue and reduce expenses, thus improving net proceeds.

After NHI implementation in 2014, current assets increased more than 100% in both hospitals. This increase was mainly due to the increase of cash and cash equivalents. Account receivable periods also decreased after NHI implementation. In the "Jaminan Kesehatan Masyarakat" period (period before NHI), there was no definitive regulation on reimbursement.

According to Ministry of Health regulation, following NHI implementation, BPJS as a third payer is required to complete payments within 15 days of claim. This regulation gave reimbursement payment timeline certainty to hospitals, thus positively influencing hospital performance by decreasing the account receivable turnover period in 2014. The significant increase in current assets at the beginning of health care reform has caused an increase in hospital liquidities. Finkler (2001) states that liquidity ratio was used to ensure the organization can meet its obligations in the near future and assess whether the organization is wastefully maintaining too much liquidity.

In 2015, even though there was an increase in hospital liquidities, inventory turnover increased in both hospitals. Account receivable turnover period (in days) increased while independent ratio decreased in 2015. Given the conditions in 2015, hospitals should evaluate their management performance. They need to be more efficient in their business processes to maximize potential and improve general performance. For instance, the Massachusetts health decreased length of stay and the number of inpatient admissions originating from the ER to reform affected utilization. When controlled for patient severity, preventable admissions decreased as well. At the same time, hospital costs did not increase [2].

5. CONCLUSION

The implementation of NHI in Indonesia since 2014 has positively impacted financial performance in two type C district hospitals. An increase in patient visits significantly

increased hospital revenues while only slightly increasing hospital expenses. This condition caused hospital net proceeds to increase, even when revenue from regional government budget (APBD) was reduced after NHI period.

A significant increase also occurred in the hospitals' current ratios, especially cash, cash equivalents, and hospital liquidities. In general, the financial ratios showed that hospital performance was better near the beginning of NHI implementation in 2014. But in 2015, there was a decrease in financial performance, indicated on both the financial report and through financial ratio analysis. Hospitals need to improve their performance efficiency and effectiveness in order to survive in the era of NHI.

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