

Conference Paper

Analysis of Compliance Appendectomy Integrated Care Pathway (ICP) and Evaluation of Its Implementation at Awal Bros Batam Hospital Year 2016

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Abstract

Integrated Care Pathway is an integrated service planning concept that uses evidence-based medical service standard aimed at improving service quality. Appendectomy ICP was formed in 2013 at Awal Bros Batam Hospital. This research uses quantitative and qualitative approach based on the seven criteria of Malcolm Baldrige with sequential explanatory method. The criteria and feedback of the Baldrige assessment are based on two dimensions of evaluation – Process and Result dimensions. Four factors were used to evaluate the Process dimension. They are: Approach, Deployment, Learning, and Integration (ADLI); while the four factors used to evaluate the results include Level, Trend, Comparison, and Integration (LeTCI). The result shows that the compliance of ICP implementation decreases the patients' length of stay (P -value = 0.001). It also derives that there is no relationship with patient outcomes (P -value = 0.318). The discussion of the Problem Tree based on Baldrige criteria indicates that leaders are the first foundation in an organization. They set the vision, mission, and organizational goals. Leaders build the organization's culture through words, actions, and behaviours. Good leadership can improve strategic planning, focus on workforce, customer focus and organizational performance. Leadership strategies and roles contribute significantly to the implementation of ICP development. In conclusion, the implementation of leadership, strategic planning, workforce focus, customer focus, focus on process, measurement, analysis and knowledge management, and good organizational performance play important role to support the achievement of ICP implementation through Baldrige criteria.

Keywords: Integrated Care Pathway (ICP), patient outcomes, Malcolm Baldrige criteria

1. Introduction

Quality of health care services can be observed from the conformity of the medical care standards and service guidance agreed upon professional code of conduct [1].

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Clinical Pathways (CP) is an integrated service planning concept that summarizes each step given to the patient based on medical care standard and evidence-based nursing care with measurable results in a certain period of time while in hospital [2]. European Pathways Association (EPA) at the last congress in Slovenia mentioned that Clinical Pathways is the methodology in decision-making mechanism to the patient service based on the grouping and in within a specific time period. The purpose of the CP is to improve the quality of care and to control the cost by improving patient outcomes, promoting patient safety, improving patient satisfaction, and optimizing the use of resources [3–5].

CP is also known as a Critical pathways, Integrated Care Pathway, Critical Path, Care Maps, and Care Paths [3]. In this study, it will be referred to as Integrated Care Pathway (ICP).

In surgery cases, ICP can be used as an approach to improve patient outcomes and hospital cost [6]. ICP surgery should be developed to meet the stages that include primary care management as a diagnostic support, preadmission procedures, surgical procedures, post-surgery care process, and the process of patient discharge (discharge planning)[7]. Ronellenfitsch et al conducted a review of studies on the implementation of ICP in surgery and found that the ICP has an effect on the economic aspects, the quality of service, transparency of treatment, staff satisfaction, and staff training[8].

2. Methods

The type of this research was a descriptive analytic research with sequential explanatory method. Data collection and analysis consisted of two phases; collection and analysis of quantitative data, followed by analysis of those data. The stages are explained as below:

1. First phase: Data were collected using an implementation check list of the ICP. Then the independent variables (compliance and non-compliance with the implementation of ICP) and the dependent variables (patient's length of stay and clinical outcomes) were assessed. The data were derived from patients' medical records.
2. Second phase: Data were collected from interviews to evaluate ICP Appendectomy at Awal Bros Batam hospital. The interview questions were based on the Baldrige Criteria for Performance Improvement of Health Care 2015-2016, which included the criteria of leadership, strategic planning, customer focus, workforce

focus, operation focus, measurement, analysis, and knowledge management, and results[9]. Then the data were analysed by triangulation of sources and methods.

In this study, researcher did not make an assessment based on the scoring of the Baldrige criteria. The reason why not all items of Baldrige criteria were adapted in this study was because the researcher did not perform observations like Malcolm Baldrige provisions.

3. Results

Based on Table 1, it was observed that the compliance was 35.1%, while the non-compliance was 64.9%. This means that the level of ICP appendectomy compliance at the hospital in 2016 is still low. Based on the data that researcher gathered, the non-compliance of ICP were contributed by the anaesthetic consultation was conducted on the second day; the surgery was performed the second day; the surgery was performed on the second day of treatment but the patients’ discharge planning was conducted on the third day of treatment; and the patients’ discharge planning was carried out on the fourth day of treatment.

TABLE 1: Description of ICP appendectomy compliance rate and patient outcomes.

No.	ICP Compliance	Frequency	Percentage (%)
	Compliance of ICP Appendectomy		
1.	Compliance	26	35.1
2.	Not Compliance	48	64.9
	Total	74	100
	Patient Outcomes		
1.	No Complication	70	94.6
2.	Infection without readmission	3	4.1
3.	Readmission because of complication	1	1.4
	Total	74	100

According to Table 1, it was deduced that patient outcomes with no complication was higher at 94.6% compared to the infection without readmission at 4.1%, and readmission because of complication was at 1.4%. The average patient outcomes were good without complications.

Table 2 showed that the patient’ length of stay of in ICP appendectomy varied between 2 to 7 days. Three days stay was the highest at 51.4%. The average length of stay was 3.85 days, with a median of 3 days. The standard deviation was 1.15.

TABLE 2: Patient length of stay in ICP appendectomy.

No.	Length of Stay (days)	Frequency	Percentage (%)	Mean	Median	Modus	Standard Deviation
1.	2	1	1.4	3.85	3	3	1.15
2.	3	38	51.4				
3.	4	17	23.0				
4.	5	10	13.5				
5.	6	5	6.8				
6.	7	3	4.1				
	Total	74	100				

Table 3 shows that the patient outcomes in ICP appendectomy without complication were 26 cases of compliance and 44 cases of non-compliance. The outcome of Infection without readmission recorded 3 cases of non-compliance. And there was one case of non-compliance in the readmission because of complications.

TABLE 3: Correlation of ICP appendectomy compliance with patient outcomes.

No.	Compliance of ICP	Patient Outcomes			Pearson Chi-Square	Degrees of Freedom (df)	P-Value
		No Complication	Infection without readmission	Readmission due to complication			
1.	Compliance	26	0	0	2.290	2	0.318
2.	Non-compliance	44	3	1			
	Total	70	3	1			

Chi-square value using the Pearson chi-square calculation was 2.290. Meanwhile Chi-square obtained from Chi-square Statistics Test Table with the level of significance (a) of 5% and the Degrees of Freedom (dF) of 2 was 5.9915. Because Chi-square value based on Pearson (2.290) was less than the Chi-square value based on Chi-square table (5.9915), then H_0 was rejected. This concludes that there is no relationship between the level of ICP compliance and patient outcomes.

Hypothesis test was obtained from the P value of 0.318 which means that statistically there is no significant different between ICP compliance with patient outcomes.

Table 4 shows that the length of stay that complied with the ICP was 26 cases with the average length of stay of 3.11 days and the variation of 0.81. This was lower than the non-compliance of ICP with 48 cases, with average length of stay of 4.11 days and 1.04 variations. Statistical test results yielded P value of 0.001. This means that statistically there is a significant difference between the ICP compliance and patients'

length of stay. Thus, it can be deduced that the ICP compliance can shorten the length of stay in the hospital.

TABLE 4: Correlation between length of stay with compliance of ICP appendectomy.

No.	Compliance of ICP Appendectomy	Length of Stay			
		Frequency	Mean	Standard Deviation	P-Value
1.	Compliance	26	3.11	0.81	0.001
2.	Non-compliance	48	4.11	1.04	

4. Discussion

The result discussion of this study was based on the Baldrige criteria. The criteria and Feedback Assessment were based on a two-dimensional evaluation; Dimension of Process and Dimension of Result. Dimension of Process refers to how the organizational methods are used to improve compliance with respect to the requirements in the first category through the sixth category. There are four factors used to evaluate the process, namely Approach, Deployment, Learning and Integration. Those are called ADLI [10].

Dimension of Result refers to the outputs and outcomes of the organization in achieving all the requirements in item no 7. There are four factors used to evaluate the result. They are Level, Trend, Comparison, and Integration. Those are called LeTCI [10].

Based on the interviews and analysis of the implementation of ICP at Awal Bros Batam hospital, the researcher made the Problem Tree based on the Baldrige criteria as shown in Figure 1.

Leaders in organizations build and disseminate visions, missions, and organizational goals. Leaders create strategic plans for the provision of services, acquire and allocate resources, and set priorities for improving performance. Leaders build an organizational culture through words, actions, and behaviours that value safe patient care, are responsible for resource use, and ethical behaviour [11].

Good leadership can improve strategic planning, focus on workforce, customer focus and organizational performance. Hospital governance is measured through the involvement of organizational leadership in formulating action plans to achieve strategic goals, leadership engagement in communicating clear vision and mission, strong leadership commitment to implement policy [12]. Leadership strategies and roles in providing guidance to manage performance contribute significantly to the

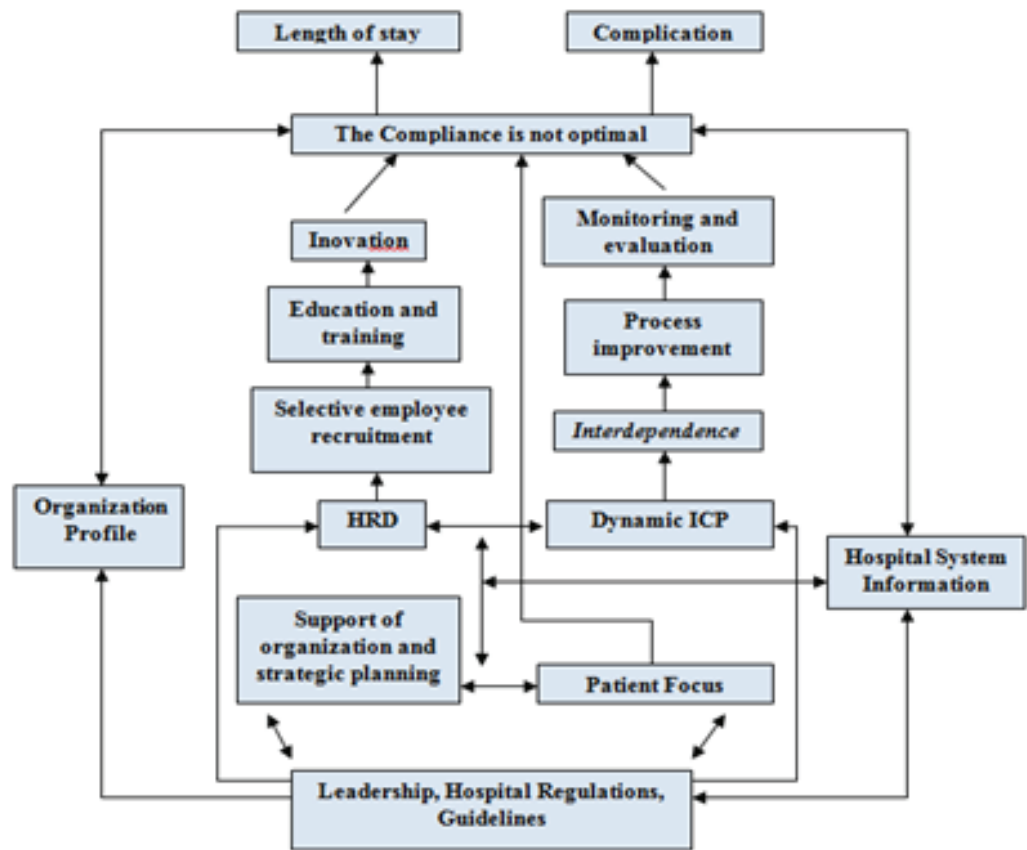


Figure 1: Problem tree of Baldrige criteria on the implementation of ICP appendectomy.

implementation of ICP development. Reflections from strategic planning; empowerment of workers, ICP development programs, and the results obtained are achieved from good leadership and social responsibility.

ICP is an inseparable service step of the patients’ medical record. It can be used as a file in the form of e-medical record of the Hospital Information System. Hospital Information System facilitates easy data retrieval on evaluations of ICP development. The data collected can then be processed into an important information for hospital services such as the average length of patient care on ICP implementation, total patient financing during hospitalization when ICP is followed, the number of drugs used in ICP implementation, and so forth. Data and information can be utilized by the finance, quality, logistics, and marketing for new market development of hospital services.

Implementation of ICP can be included as one of the assessment for employee unit’s Balance Score Card (BSC) in Hospital Information System. Coordinators fill out the staff assessments each month. The total value will be converted to the monthly bonus value of the employees. This will certainly be a motivation for employees in implementing

ICP in the hospital. So far, ICP implementation assessments have been conducted for each surgeon in Ongoing Professional Practice Evaluation (OPPE).

The Baldrige criteria require the organization's ability to measure improvements and decreases in performance outcomes that include result of process and health service; the results on the customer focus; outcomes on teams' (employees) focus; leadership and governance outcomes; and financial and market results [9]. Thus, the expected performance outcomes of ICP implementation are performance focusing on patient outcomes, effective and efficient cost, lowering patient duration of stay, using data feedback, promoting positive competition, and the performance of all staff and hospital management.

5. Conclusion

The results of quantitative analysis show that the level of ICP compliance Appendectomy at Awal Bros Batam Hospital in year 2016 was still low with the average patient outcomes was good without complications. The highest patients' length of stay was 3 days with an average length of stay of 3.85.

The results also show that there is no relationship between the level of ICP compliance with patient outcomes. It can be said that the compliance and noncompliance of ICP can equally have a good patient outcomes without complications. Meanwhile, ICP compliance will shorten the length of stay in the hospital.

Furthermore, good leadership can improve strategic planning, focus on workforce, customer focus and organizational performance. Strategic and roles of leadership contribute significantly to the development and implementation of ICP. In conclusion, the implementation of leadership, strategic planning, workforce focus, customer focus, focus on process, measurement, analysis and knowledge management, and good organizational performance play important role to support the achievement of ICP implementation through Baldrige criteria.

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