

# THE EVALUATION OF CLINICAL PATHWAY IMPLEMENTATION ON CEREBRAL INFRACTION IN THE INPATIENT CARE UNIT OF BANTUL PKU MUHAMMADIYAH HOSPITAL

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**ABSTRACT:** Stroke remains one of the major health problems, not only in Indonesia but also in the world. The improvement of stroke service process is expected to support better outcomes of stroke service quality. One of the clinical management used is the implementation of clinical pathway. The purpose of this study was to explore the implementation of CP cerebral infarction in the inpatient unit of Bantul PKU Muhammadiyah Hospital. **Method:** A convergent parallel mix-method design with case study approach. The quantitative sample is the patient's total cerebral infarct medical record (June 2016-November 2016, n = 27) and ICPAT checklist. Qualitative samples are doctors, nurses and people involved in the implementation of CP cerebri infarction obtained from deep interview with purposive sampling technique. **Results and Discussion:** ICPAT dimension 1 (CP format) content and quality are good. Dimension 2 (CP documentation) moderate content and good quality. Dimension 3 (CP development) moderate content and good quality. Dimension 4 (implementation CP) content and quality are poor. Dimension 5 (maintenance CP) content and quality are moderate. Dimension 6 (role of organization) content and quality are good. Compliance rate of completeness of CP form is 22% and content of CP is 0%. Most constraints due to busyness of the officer and time constraints. **Conclusions and Suggestions:** The cerebral infarct CP implementation compliance level was poor. Need socialization, training, regular evaluation and full time facilitator.

**Keywords:** Implementation, Clinical Pathway, cerebral infarction

**ABSTRAK:** Stroke masih menjadi salah satu masalah utama kesehatan, bukan hanya di Indonesia namun dunia. Dengan adanya perbaikan proses pelayanan stroke diharapkan dapat menunjang *outcome* kualitas pelayanan stroke yang lebih baik, yaitu dengan pemberlakuan *clinical pathway* (CP). Tujuan penelitian ini adalah mengeksplor implementasi CP infark cerebri pada unit rawat inap Rumah Sakit PKU Muhammadiyah Bantul. **Metode:** Penelitian *mix-method* secara *convergent parallel design* dengan desain studi kasus. Sampel kuantitatif adalah rekam medis pasien infark cerebri secara total *sampling* (Juni 2016-November 2016, n=27) dan *checklist* ICPAT. Sampel kualitatif adalah dokter, perawat dan orang-orang yang terlibat implementasi CP infark cerebri diperoleh dari *deep interview* dengan teknik *purposive sampling*. **Hasil dan Pembahasan:** ICPAT dimensi 1 (format CP) konten dan mutu baik. Dimensi 2 (dokumentasi CP) konten *moderate* dan mutu baik. Dimensi 3 (pengembangan CP) konten *moderate* dan mutu baik. Dimensi 4 (penerapan CP) konten dan mutu kurang. Dimensi 5 (pemeliharaan CP) konten dan mutu *moderate*. Dimensi 6 (peran organisasi)

konten dan mutu baik. Tingkat kepatuhan kelengkapan formulir CP sebesar 22% dan isi CP sebesar 0%. Kendala terbanyak karena kesibukan petugas dan keterbatasan waktu. **Kesimpulan dan saran:** Tingkat kepatuhan implementasi CP infark cerebri masih kurang. Perlu sosialisasi, training, evaluasi rutin serta fasilitator waktu penuh.

**Kata Kunci:** Implementasi, *clinical pathway*, infark

## INTRODUCTION

Stroke remains one of the major health problems, not only in Indonesia but also in the world.<sup>7</sup> It is known that stroke is the highest cause of death in Indonesia.<sup>2</sup> The process of service becomes one of the determinants of outcome so that there is a need for more organized stroke services to narrow the process variation.<sup>12</sup> The improvement of stroke service process is expected to support better outcomes of stroke service quality. One of the clinical management used is the implementation of clinical pathway.<sup>3</sup> Clinical pathway began to be implemented in Bantul PKU Muhammadiyah Hospital since 2014. There is a total of 15 clinical pathways, one of them is cerebral infarction. Based on the results of interviews that have been done, it is found that the clinical pathway applied in the hospital has not been running well.

## MATERIAL AND METHOD

This is a mix-method research with case study design on the implementation of clinical pathway in cerebral infarction case at inpatient care unit of Bantul PKU Muhammadiyah Hospital. The quantitative data were taken in the form of simple description of documentation and clinical pathway filling in medical record and ICPAT.

The qualitative data were obtained by deep interview and observation to know the implementation of clinical pathway. This research was conducted in Bantul PKU Muhammadiyah Hospital for two months, from November 2016-December 2016.

Samples and sampling in this research were taken by using medical records which were selected in total sampling which were all medical records of patients who suffered from cerebral infarction from June 2016 until November 2016. Samples and sampling in this research were taken by using qualitative methods selected by purposive sampling consisting of nurses who served on wards, wardroom heads, doctors from the emergency department, clinical pathway team leaders and hospital quality team leaders.

The inclusion criteria used in the quantitative method is the latest Clinical Pathway used in Bantul PKU Muhammadiyah Hospital and the medical records of patients with cerebral infarction cases from June 2016 until November 2016. At the moment, the clinical pathway had been implemented in Bantul PKU Muhammadiyah Hospital. The exclusion criteria used in the quantitative methods are the missing medical records/ missing data, damaged medical records which were not possible to read and use.

Respondent's characteristic for the qualitative data is the informant that has been determined by researcher in using clinical pathway of cerebral infraction and who agreed to become the informant, informant that directly related to making and implementing clinical pathway, the doctors in charge of the emergency department, the nurses who served in the inpatient care unit that ran the clinical pathway. The informants were still in duty at Bantul PKU Muhammadiyah Hospital.

The variables of this research are clinical pathway implementation consisting of several indicators, namely input variables (clinical pathway format, organization role, facilities and infrastructure, and human resources), process variables (documentation, development, implementation and maintenance clinical pathway), and output (clinical pathway adherence).

Quantitative analysis was done by descriptive analysis of ICPAT checklist and the data were processed by using a computer program. The qualitative data were analyzed by qualitative analysis technique with some steps which were processing and preparing data, reading whole data, analyzing more in detail by coding data, and applying coding process. Then, the result was presented or described in a narrative or qualitative report.

## **RESULT**

### **a. Hospital Profile**

Bantul PKU Muhammadiyah Hospital is a type C general hospital with 104 beds. Until 2011, the number of employees in Bantul PKU

Muhammadiyah Hospital has reached 413 employees, including permanent employees of 273 employees and non-permanent employees of 140 employees. They are medical and non-medical employees (Profile of Bantul PKU Muhammadiyah Hospital).

### **b. The Ward**

*Al-kautsar* ward is the ward of internal medicine which consists of 1<sup>st</sup> Class and 2<sup>nd</sup> Class wards. There is a total of 20 beds in this ward. *Al-arof* ward is also the ward of internal medicine which has VIP Class and 3<sup>rd</sup> Class. There are 31 beds there.

### **c. ICPAT evaluation result**

(Whittle, 2009) explained the classification of ICPAT evaluation. If the result obtained from the assessment is <50% then it is included in the criteria of poor. If it is between 50% and 75%, it is indicated as in the moderate criteria. Then, if the result of the assessment is >75%, it is included in the good criteria. From the graph above, it is found that the ICPAT dimension 1 (CP format) and dimension 6 (role of organization) show the good content and quality. Dimension 2 (documentation) shows the moderate content and good quality. Dimension 3 (development) shows moderate content and good quality. Dimension 4 (implementation) shows the poor content and quality. Dimension 5 (maintenance) shows the moderate content and quality.

### **d. Input**

Bantul PKU Muhammadiyah Hospital has 1 neurologist. For nursing, *Al-kautsar* ward has 15

nurses. *Al-A'rof* ward has as many as 27 nursing staffs. In order to support the smoothness of work, *Al-A'rof* ward is equipped with nursing medical equipment. Based on the data obtained, most of the required equipment is available according to the standards specified in the ward, although there are some tools that are still lacking in number and also damaged.

Based on dimension 1 (What form is assessed by Clinical Pathway?), the content part reached 80%, the quality part reached 100%. The content parts that had not been evaluated were whether the clinical pathway has a final end and whether the documentation of clinical pathway can specifically record the services needed by the patients. These results were obtained from the direct observation on the clinical pathway sheets.

The quality part of dimension 1 reaching 100% means that the two points assessed were answered 'yes', which means that the clinical pathway document is used as a part/unity in the service/therapy and clinical pathway describes whoever contributes in the service. This result is supported by the statement of the 5<sup>th</sup> respondent who stated, "*... there are doctors, nurses, pharmacists, physiotherapists, and then nutritionists, and medical specialists.*"

On dimension 6 which is the evaluation on the role of organization through the ICPAT sheets, the result is that the percentages of content and quality parts reached 100%. On the content part, one point that got the 'yes' answer was whether in the planning at the hospital level, it

includes the specific plan to develop the clinical pathway. The answer is supported by the statement of the 5<sup>th</sup> respondent who said, "*... the special seminar will be planned next year, at the end of 2017.*"

#### e. Process

On dimension 2, the ICPAT evaluation resulted 61% of the answer of 'yes' on the content part and 100% on the quality part. The quality part that had not been fulfilled was the participation of patients on clinical pathway. This is supported by the statement of the 2<sup>nd</sup> respondent who stated, "*No, it is hospital internal and the patients have the right to technically know the medical risk. It is a different case if the patients look at the governance.*"

On dimension 3, the evaluation on the ICPAT sheet resulted 54% of 'yes' answer on the part of content and 82% on the part of quality. The content part is categorized as moderate criteria. Based on the evaluation of ICPAT sheet, the part that had not been fulfilled was there was the representative of patients who reviewed the clinical pathway to ensure the patients' confidentiality. On the part of quality, the point that had not been fulfilled was the involvement of all staffs and patients in the process of development. The patients' opinions were gathered at the test and the test result was discussed with the patients. This result is supported by the 3<sup>rd</sup> respondent' statement who said, "*All of nurses, doctors, laboratory staffs, midwives, nutritionists, and*

*pharmacists should fill the form. However, not all of them fill the form so that the result is focused on us, the nurses and the team, CP team”.*

For the implementation item of clinical pathway (dimension 4) the percentage of answer ‘yes’ of the content part was 40% and the quality part was 0%. On the content part, the unfulfilled point was the proof that in the development process, the hospital had analyzed the possible risks of the usage of clinical pathway before it is used, the training program of clinical pathway usage for the staffs, and the resource allocation for the training of clinical pathway usage. This result is supported by the 5<sup>th</sup> respondent who said,

*“... the special seminar will be planned next year, at the end of 2017”.*

On dimension 5, based on the ICPAT sheet, the percentage of ‘yes’ answer on the part of content was 50% and the part of quality was 69%. On the part of content, the unfulfilled points were the training for the staffs when there were some changes on the content/ format of the clinical pathway and there was still no training for the new staffs who are involved. This result is supported by the statement of respondent 5,

*“That was the socialization. The special seminar will be planned next year, at the end of 2017. The special socialization or seminar will be held next year.”*

#### f. Output

Based on medical record observation result, it is known that in term of the compliance of clinical pathway, there were only 6 of 27 medical records that attached the

clinical pathway form. This result is supported by respondent 3 who stated,

*“It is not usually filled in the emergency department so that we are not accustomed to filling CP.”*

Based on the result of the observation of medical record on the content of clinical pathway, the completeness level of contents of clinical pathway was 0%. Based on the observation result, none of clinical pathway is filled completely. Furthermore, the researchers confirmed the results of observations related to data that does not exist to the interviewed respondents. Respondent 4 stated that

*“Yes, sometimes it is filled and sometimes it is not. In such cases, it is filled when MR is going home.”*

## **DISCUSSION**

### a. Input

Many misconceptions of the definition of clinical pathway,<sup>5</sup> then the first step that needs to be done is to check whether the guideline to be assessed is a clinical pathway or not. Clinical pathway form is used to create a framework in the treatment process. Therefore, a good clinical pathway format needs to be made to improve the patient safety and the effectiveness of medical services.<sup>4</sup>

Based on the results of research that has been done, it shows that the hospital has established a clinical pathway team that has been socialized through various meetings and informed to the medical staffs in the inpatient wards. The main role of the organization is to form a strong clinical commitment and leadership of one doctor.<sup>6</sup>

The Regulation of the Minister of Health of the Republic of Indonesia No. 56 of 2014 for the type C hospitals mentions that medical staffs shall include 9 general practitioners, 2 general dentists, 2 basic specialists, 1 supporting specialist and 1 dental and oral specialist. The medical staffs at Bantul PKU Muhammadiyah Hospital have met the standards. It has a neurologist and there is a doctor who helps the medical services to be maximal.

#### b. Process

The documentation of clinical pathway serves to record the achievement of the treatment and improve the communication between the medical staffs and non-medical staffs.<sup>1</sup>

In the process of developing clinical pathway assessed on ICPAT, the part of making clinical pathway is not the only point that needs to be included, some patients who receive treatment also apparently should be included in the development of clinical pathway. It is proven that in the content part is in the moderate category because there is still no involvement of patients in reviewing the clinical pathway. The process of developing a clinical pathway is as important as the clinical pathway produced, because the clinical pathway is a tool that will also be used to evaluate the service or therapy that has been provided. In addition, improving the service needs to involve the process of change in everyday practice.<sup>5</sup>

The Implementation is very important because a clinical pathway is based on high risk, high volume, and high cost so that it is expected

that the implementation of good clinical pathway can reduce the risk, quantity, and cost of medical services.<sup>9</sup>

One of the most important factors in succeeding the implementation of clinical pathway is the maintenance of clinical pathway requiring that clinical pathway function as a dynamic tool that responds to the input from the staffs, patients, and the clinical response and the recent references so that the contents and design of the clinical pathway need to be reviewed constantly.<sup>5</sup>

#### c. Output

Based on the observation, there were 27 medical records of patients with a diagnosis of cerebral infarction. However, only 6 of the 27 medical records had the clinical pathway form filled. Thus, only 22% complete medical records had clinical pathway form while the remaining 78% are not completed with clinical pathway form. There were 10 medical records that included the clinical pathway form but none of them had been completely filled. Therefore, the percentage gained for the compliance rate of the clinical pathway form is 0%. Compliance in the implementation of clinical pathways can also improve the communication among medical staffs.<sup>10</sup>

#### d. Problems and recommendation

Clinical pathway is a new form in Bantul PKU Muhammadiyah Hospital. Therefore, it is difficult to change the habit in the field because the staffs previously did not use the form of clinical pathway. The

compliance factor in the implementation of clinical pathway is still lacking that is caused by busyness of each staff. They did not have time to fill the clinical pathway form. Another point that also causes the non-compliance is that they are not familiar with the clinical pathway yet so that they tend to forget to include in the medical record as well as the difference between the early diagnosis and final diagnosis.

The absence of awareness among medical personnel to remind each other about the clinical pathway sheet is to enter the clinical pathway into the medical record and fill the clinical pathway. so it makes the importance of full time facilitators to oversee the implementation of clinical pathways. The medical personnel involved should know the importance of clinical pathways for quality control and cost control. So, training for staff involved in the implementation of medical personnel.

#### e. Conclusion

Based on the input aspect, the clinical pathway infarct cerebral form is considered to be a clinical pathway and has met the good category, the hospital has shown the role that meet the good category, the number of human resources for the specialist doctors as standard, while for the nursing staff, especially the ward al-arof still not meet the standards, as well as there are some nursing equipment that is still less in number and also damaged.

Based on the process aspect, the documentation of the clinical pathway in the ward has been incorporated into the medical

record with compliance rate of only 22% due to unaccustomed, lack of awareness, limited time, and forgetting, the development of clinical pathway has involved clinical pathway team, medical committee, nurse, pharmacy and other professions, but not optimal, the implementation process of clinical pathway is still hampered because there is still no training or special training related to clinical pathway. And for the output aspect, compliance complements the content of the clinical pathway by 0%. To improve the quality of clinical pathway implementation, every medical and non-medical personnel involved should be reminded of each other, the need for training for the staff involved, and a full time facilitator to supervise the implementation of clinical pathway.

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