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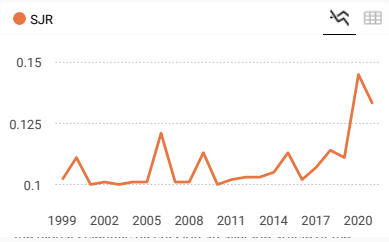

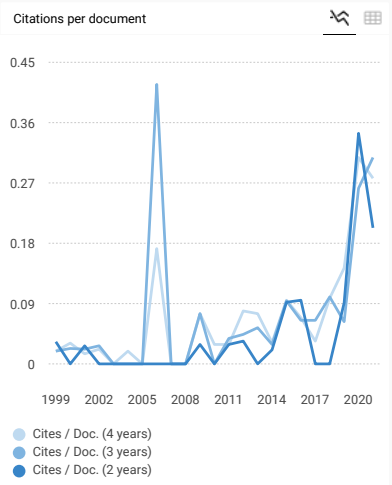

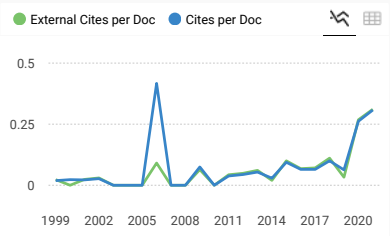

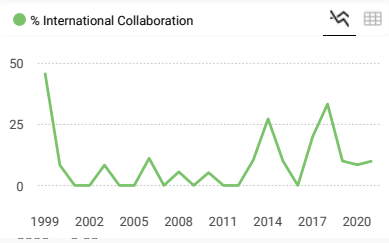

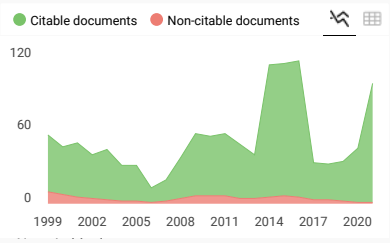

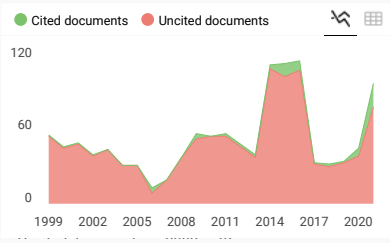

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The University of Malaya, Kuala Lumpur, Malaysia hosted the APACPH-KL Early Career Global Public Health Conference: Implementation Science for Improving Population Health on the 11th and 12th of April, 2019. The two-day conference was officiated by APACPH-KL President, Yang Berbahagia Datuk Professor Awang Bulgiba Awang Mahmud. The conference gathered experts and researchers in public health for an exchange and expansion of knowledge and to share experiences on how to tackle public health issues, which are sometimes borderless.

Organized by Asia-Pacific Academic Consortium for Public Health Kuala Lumpur (APACPH-KL), in collaboration with the Centre for Population Health (CePH), the Department of Social and Preventive Medicine (SPM), Faculty of Medicine, University of Malaya, and the University of Airlangga; the conference aimed to leverage on the global public health education and research of Asia-Pacific universities to address global public health issues through interaction with public policy and media. It also hoped to develop and enhance the network amongst international fellow students and early career public health researchers.

The conference offered an excellent platform for early-career public health professionals and students to exchange ideas and network with regional public health thought leaders and researchers. The organizers succeeded in bringing people from the industry, academia, NGOs, and international organizations to make presentations and have interactive discussions. Participants made oral presentations on Health Systems and Policy, Epidemiology, Occupational and Environmental Health as well as Behavioural and Reproductive Health.

This conference hopes to build up the confidence of early-career public health professionals and postgraduate students in presenting and publishing articles in well-regarded peer-reviewed journals. It was also the perfect opportunity for them to network and interact with one another. APACPH-KL and the University of Malaya look forward to more of such activities being conducted in the near future.

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THE INFLUENCE OF SEAMLESS AND COMPLETENESS DISCHARGE SUMMARY FILLING TO SUITABILITY OF SEVERITY LEVEL IN TERTIARY REFERRAL HOSPITAL

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Abstract

Background: The implementation of the national health insurance program to fulfill the payment system related to a claim needs the documentation of services in the discharge summary. The discharge summary's content becomes the basis for determining the code of disease especially the suitability between diagnoses and examination to determine the severity level of disease.

Objective: To determine the influence of the seamless and completeness of discharge summary filling to the suitability of severity levels in tertiary referral hospitals.

Method: Using a retrospective design analytic study with cross sectional method. The data was collected from observation completeness filling and seamless of information in inpatient's discharge summary in October to December 2018. 99 samples were taken by random sampling system.

Results: The results of the study showed that the seamless between diagnosis and supporting medical examinations was 75.78%, the completeness of discharge summary filling was 80.3%, and the non-conformity of severity level was 9.1%. The results of the statistical significance test showed that the congeniality between the diagnoses and the supporting medical examination (p=0.00) and the completeness of discharge summaries (p=0.00) had an influence on the suitability of severity levels.

Conclusion: The seamless and the completeness of discharge summary filling is one of the factor that can influence the suitability of severity level. The completeness of discharge summary filling and intervention coding influences the amount of insurance expense and the severity level. A tertiary referral hospital is aimed for the patient's condition categorized in advanced severity level. Therefore, completing the discharge summary is needed and should comply with the clinical pathway.

Keywords: *Completeness, Discharge summaries, Seamless, Severity level*

Introduction

In implementing the healthcare services, a hospital is responsible for medical records documentation (1). A medical record is a file containing records and documents comprising of patient identity, the result of medical examination, medication, interventions and other services provided to the patients (2). The medical records can be used for the administrative, medical, legal, financial, research, educational and documentation aspect (3). The completeness, accurate and accountable medical records are an effective way in reducing the risk. In the implementation of national health insurance, the completeness of the medical record's content is an important factor, especially the medial resume's documentation (4). This is an implementation of the medical record's function for payment related to a claim. It needs the documentation of services in the discharge summary. The discharge summary becomes an important thing since there is information about a patient's disease diagnosis in inpatient care and medical and non-medical interventions that have been done (5). This information is the basic thing for the coder to determine the code of disease diagnosis and the code of intervention procedure according to the coding guideline. The diagnosis of disease and intervention procedure coding is done according to ICD 9 CM and ICD 10 that will become the basis for determining the INA CBGs rate. The accuracy of coding and intervention/procedure is strongly supported by the completeness of important supporting medical examinations. It will influence the result of grouping in the INA CBGs application and an aspect for determining the severity level of the disease (6).

Based on the Regulation of the Ministry of Health of Indonesia Number 76 Year 2016 on Indonesian Case Base Groups (INA-CBGs) Guideline in the National Health Insurance Program Implementation, the severity level is the fourth subgroup that illustrates the severity of a case influenced by comorbidity or complication during the treatment period (7).

In the tiered referral process, tertiary referral hospital is expected to be able to handle the disease categorized in advanced severity level (moderate to severe). Thereby, the accuracy and the seamless in completing the diagnosis, procedure, and other supporting medical examination are important for accurate ICD coding and proper severity level. The suitability of severity level is strongly related to the determination of INA CBGs rate that influences the hospital revenue (6).

From this study we want to determine the influence of the seamless and completeness of discharge summary filling to the suitability of severity levels in tertiary referral hospitals.

Methods

This research was an analytical study using cross sectional approach. The research population was the medical record files of the inpatients that used national health insurance on October to December in 2018. Sampling was taken using simple random sampling technique and obtained as many as 99 samples.

Data collection was done by conducting an observation toward discharge summary using an instrument to determine its completeness. The discharge summary form consists of the diagnosis column, procedure, important examination, indication of being treated, and history. Completeness of this form includes filling out the column with clear writing that is readable according to information needs. Columns that have been filled in and meet the medical record writing conventions, that is, clearly read are given the number 1, while those that do not meet are given the number 0. This completeness value is obtained by dividing the total number of all the columns that are filled in full divided by all the observed columns. To determine the seamless between the diagnostic guideline and the supporting medical examination in obtaining accurate coding, the completeness assessment sheet for discharge summary forms was used as the instrument. Yet, it was specifically used for the indication aspect that was being treated, anamnesis, important examinations (physical,

laboratory, and radiology), primary diagnosis, secondary diagnosis both complication and comorbidity and therapy. The seamless between diagnoses, operative and non-operative procedures and important examination that are filled in must be in accordance with Clinical Practice Guidelines established by the hospital (8).

The data containing severity level was collected from the data processed by txt data and the current result of INA-CBGs grouping on National Case-mix Center software in the Ministry of Health of Indonesia. The suitability of the severity level is obtained from data entered into the application sourced from a discharge summary form and then compared with the results of the severity level inputted based on complete information from the medical record as a whole. If the severity level results with the data from the information on the medical resume are in accordance with the severity level results that are inputted based on all information in the complete medical record document, then it will be given a number of 1, if not appropriate will be given the number 0. Those data were analyzed descriptively and analytically using a regression statistical test (9,10). The statistical test uses the SPSS 25.0 application.

Results

Out of 99 samples that had been observed, it was obtained the completeness level of 80.3%. This number was obtained from the total aspect that had been observed in the discharge summary as the sample. The completeness level of discharge summary filling on October, November, and December in 2018 can be showed in the Table 1.

Table 1: The Frequency of the Percentage of the Completeness of Discharge Summary Filling at RSUD Dr. Soetomo within October - December 2018

Month	October	November	December	Fourth Quarter
Completeness	82.96 %	83.19 %	74.03 %	80.3 %

Source: The Report of Medical Record Completeness Study at RSUD Dr. Soetomo, 2018

To know the seamless of diagnosis, important supporting medical examinations and therapy, a similar instrument to the completeness that focused on the observation toward primary diagnosis, secondary diagnosis consisting of complication and comorbidity and therapy both surgical and non-surgical was used. The seamless level of 99 samples that had been observed can be showed in the Table 2.

Table 2: The Frequency of the Percentage of the Seamless between Diagnosis and Important Supporting Medical Examinations Stated in Inpatients' Medical Records at RSUD Dr. Soetomo Within October – December 2018

Month	October	November	December	Fourth Quarter
Seamless	77.66 %	83.08 %	66.14 %	75.78 %

Source: The Report of Medical Record Completeness Study at RSUD Dr. Soetomo, 2018

From 99 samples that had been observed, the seamless level between the diagnoses and the completeness of supporting information in the form of other important supporting medical examinations was 75.78%. It indicates that the doctor has not documented the supporting medical examination for primary and secondary diagnoses, and surgical and non-surgical therapy completely.

Of the 99 samples, it was taken the processed txt data that had been input into National Case-mix Center software, so that the frequency data of the established severity level was obtained.

To know the seamless of severity level, the data processing from the samples was taken using txt data of NCC E-Claim and the result is as follows in Table 3 and 4.

Table 3: The Percentage of Severity Level in Inpatient's Case at RSUD Dr. Soetomo within October– December 2018

Severity Level	I	II	III
Percentage	43.44 %	34.34 %	22.22 %

Source: Txt Data of INA CBG's E-Claim at RSUD Dr. Soetomo 2018

Table 4: The Suitability of Severity Level toward Inpatient Case at RSUD Dr. Soetomo within October-December 2018

Severity Level	I n (%)	II n (%)	III n (%)	Total
Suitability	39 (90.7%)	29 (85.3%)	22 (100%)	90 (90.9%)
Unsuitability	4 (9.3%)	5 (14.7%)	0 (0%)	9 (9.1%)

From 99 samples, 90 samples or 90.9% are relevant to the available severity level category based on ICD code that has been established from the seamless of diagnoses, procedure, and other important medical examinations. The unsuitability of severity level was mostly obtained in severity level I and II that is 9.1% or 9 samples.

The result of statistical significance test in the form of logistic regression test showed that the seamless between diagnosis and supporting medical examinations (p=0.00) and the completeness of discharge summary filling (p=0.00) had an impact on the suitability of severity level.

Discussion

The main responsible for the completeness of the medical resume is the doctor. The completeness of the data on the medical resume is related to the doctor's own behavior in completing the medical resume file. Non-compliance of doctors in filling out medical resume files will result in incompatibility in determining severity level. This can have an impact on the amount of INA-CBG's claims that are not appropriate. According to the Regulation of the Ministry of Health of Indonesia Number 27 Year 2014 on the Technical Guideline of INA CBGs System, one of the affecting factors toward the rate was the content of primary diagnosis (12). This condition can indirectly affect hospital revenue (13)

The incompleteness of medical record content especially on the diagnosis in discharge summary written by the doctor would result in under coding (14), where the determination of coding in diagnosis could not be optimal according to INA CBGs rate.

The determination of severity level is determined by the filling of the main diagnosis, secondary diagnosis of both complications and comorbidities, procedures and important examinations that support the diagnosis and procedure (15). All information is written by the doctor on the patient's discharge summary form. Doctor compliance and completeness of

filling medical resume files by doctors are influenced by various things, including individual factors which include individual characteristics, knowledge and perceptions of each individual, organizational factors, internal factors and external factors.

Research conducted previously states that there is an influence between gender, age, years of service, employment status, and areas of concentration with adherence in completing discharge summary of patient. The results of the cross tabulation in the study stated that non-compliance with discharge summary filling was mostly done by female partners, more than 40 years of age with more than 5 years of service, and included in the group of non-surgical doctors (16). Noncompliance with discharge summary filling is due to the workload held by doctors (16).

Partnership doctors have more workload than permanent doctors. This condition occurs because partner doctors are required to serve not only at one institution and have working hours which tend to be shorter than permanent doctors. Mangentang said that there was a relationship between the number of places of practice with the suitability of the diagnosis and the completeness of the discharge summary filled out by doctors (17).

The duration of the doctor's working period is associated with the level of knowledge and experience possessed. Previous research says that years of service are directly proportional to knowledge, experience, and ability to take action.

Gender is suspected to have an influence on decision making in action. For example, in female doctors, non-compliance in filling out discharge summary is related to the dual role they have, namely as a doctor and housewife at the same time so that the workload borne is also more severe than that of male doctors (16).

Other individual factors that can affect the completeness of discharge summary filling are doctor's knowledge, attitude and behavior. Knowledge is one of the most important things that is the basis for changes in individual behavior (18,19).

Other factors that are suspected to influence compliance with discharge summary filling are internal factors and organizational factors. Organizational support for fulfilling doctors' obligations in filling out discharge summaries has been shown to have a positive effect (20). Previous studies have suggested that the lack of supervision and evaluation by the hospital regarding the completeness of discharge summary is one of the factors causing physicians in charge of the practice not to fill in completely and clearly. The existence of Standard Operating Procedures for filling out discharge summary is also needed to ensure the consistency and completeness of the contents of discharge summary (21, 22).

The area of specialization of the doctor is related to the completeness of the discharge summary (23). Compliance with discharge summary filling is mostly done in the surgical specialization group. This is because in surgical patients, surgery is planned or not done suddenly, so the patient's discharge time is also scheduled. This condition makes it easy for doctors to fill out a discharge summary completely and clearly (16).

Coding is very important for prospective payment system that will determine the amount of money should be paid to the healthcare provider. The regulation and the guideline of coding used in INA-CBGs was the rule of morbidity coding by using ICD-10 revised in 2010 to conduct a coding toward primary and secondary diagnoses and using ICD-9CM revised in 2010 for intervention/procedure coding (12).

The accurate result of diagnosis and the procedure coding by the coder adjusted to the available supporting medical examination was input in the hospital information system and grouped using National Casemix Center software and classified based on the severity level (24).

The incident when the coder did not successfully do the clarification using MB1 to MB5 rules to re-select the code of primary diagnosis (re-selection) was relevant to the regulation mentioned in the Regulation of Ministry of Health of Indonesia Number 76 Year 2016 on the Indonesian Case Base Groups Guideline in the National Health Program Implementation (7).

In the process of coding, coding guideline was used if there were multidiagnoses recorded in the discharge summary. It is widely used in severity level II and severity level III. Yet, it can also be used in severity level I if two diagnoses have one code so that the rule of combination code is applied (7).

There were some points that resulted in inaccurate determination for severity level, for example, the seamless between primary and secondary diagnoses. The completeness of physical and important supporting medical examination to make diagnosis and procedure was absolutely required (6). If a patient's diagnosis categorized into severity level III but the diagnostic comorbidity is not supported by supporting medical examination (incomplete information on the examinations or negative result), there will be two probabilities namely directly degraded to severity level I or severity level II by considering the comorbidity diagnosis as a disturbance (25). The ability of coder in determining the code is also a determinant factor for the conformity of severity level. The coder must have competence in resetting diagnoses in the order of the underlying causes of the disease (26).

Conclusion

The seamless and the completeness of the medical record filling is one of the factors affecting the suitability of severity level. The content completeness of each aspect in discharge summary is useful for both claim and reporting data for the hospital and research. The important aspects of the coding are diagnoses, procedure, and important supporting medical examinations, including physical examination, laboratory and radiological examinations. By completing it appropriately, a coder can give an accurate ICD code to be input into NCC software (National Case-mix Center), so that the data grouping can be obtained. The seamless of diagnoses, procedures and other important examinations also determines the coding rules given based on the coding analysis method.

The completeness of discharge summary in disease and intervention coding will show the amount of insurance expense and severity level. A tertiary referral hospital is aimed for the patient categorized in advanced severity level. Therefore, the attempt for completing the discharge summary completely, especially the diagnoses and supporting medical examinations based on the established clinical pathway and clinical guideline are needed.

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