The influence of completeness supporting examination and discharge summary

by Dian Fajar Hapsari

The influence of completeness supporting examination and discharge summary procedure to suitability of severity level determination in tertiary referral hospital

Dian Fajar Hapsari [1], Djazuly Chalidyanto [1*], Joni Wahyuhadi [2]

[1] Department of Health Policy and Administration, Faculty of Public Health, Universitas Airlangga, Surabaya, INDONESIA
[2] Dr Soetomo Regional Public Hospital Surabaya, INDONESIA
*Corresponding author: djazulych@fkm.unair.ac.id

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 objective of this study was to determine the influence of completeness supporting examination and discharge summary procedure to suitability of severity level determination in tertiary referral hospitals.
Methods: This was an analytical study with cross-sectional design. The data were collected from observation toward inpatient's discharge summary. Ninety-nine samples were taken by simple random sampling technique.
Results: The results of the statistical significance test showed that the congeniality between the supporting examination results and procedure (p<0.0001) and the completeness of secondary diagnosis in discharge summary (p<0.0001) had an influence on the suitability of severity levels.
Conclusion: Completeness supporting examination and discharge summary procedure can influence severity level.

Keywords: completeness, procedure, severity level, discharge summary, supporting examination

INTRODUCTION

The globalization era brings new challenges for hospitals to be able to compete with other hospitals. Hospital customers are increasingly selective and have high knowledge in the selection of health clinics. Hospitals as health service facilities have an obligation to improve the quality of service to customers. One of the obligations in improving the quality of service to customers is the organization of good medical records (Amin & Nasharuddin 2013; Departemen, et al. 2006). The accuracy of client data in the process in the modern era is now a demand from various aspects for nurses, various forms, and efforts have been made over the years to improve nursing documentation. This is done in an effort to improve the quality of client care services (Simamora, 2019).

A medical record is a file containing records and documents consisting of patient identity, the result of medical examination, medication, interventions, and other services provided to the patients (Kementrian, 2008). The medical records can be used for administrative, medical, legal, financial, research, educational, and documentation aspects (Laerum, , &

Faxvaag 2001; Mekonen, 2017). The main objective of collecting information from patient records is to support the provision of care, clinical decision-making, health care communication, and care continuity (Zegers, et al. 2011). A complete, accurate, and accountable medical record is an effective basis in reducing the level of risk of error. This is because medical records are a source of information for patients. Medical records can indicate whether the services provided are in accordance with the health services (Ludwick & Doucette 2009). In communicating defined primary safety measures, a hospital should be transparent, and reports should be reported and revised promptly (Sammer, et al. 2010). The accuracy and suitability of the medical record document information will help the hospital in making a claim to the insurance provider for the service costs incurred by the hospital (Dewi, 2017).

A hospital is a professional and healthy organization comprising of a permanent medical center, emergency facilities, caring for patients, diagnostics and treatment

of diseases (Siregar, 2019). The completeness of medical record content is an important factor in the application of national health insurance, especially documentation on medial resumes (Amin & Nasharuddin 2013). This implementation is a medical record function for payments related to claims. Therefore, the hospital needs to service documentation in the discharge summary. The discharge summary is important because there is information about the diagnosis of the patient's disease in patient care and the medical and non-medical interventions that have been done(Ludwick & Doucette 2009). This information is the basic aspect for the coder to determine the code of a 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 Indonesian Case Base Group (INA CBG's) rate. The accuracy of coding and intervention/procedure is strongly supported by the completeness of important supporting medical examinations (Thygesen, et al. 2011). Doctors must record complete and accurate diagnosis, patient diagnosis codes, selection of main diagnosis, and diagnosis of severity level of patients to avoid errors in determining severity levels also related to errors in grouping patient service rates(Peabody, et al. 2004). User satisfaction is one of health care quality indicator. Some authors stated that health services can be evaluated based on the structure, results and satisfaction of service/patient service (Samad, et al. 2018).

Based on the Regulation of The Ministry of Health of Indonesia Number 76 of 2016 on INA-CBG's Guideline in the National Health Insurance Program Implementation, the severity level is the fourth subgroup illustrating the severity of a case influenced by comorbidity or complication during the treatment period (Departemen, et al. 2014). 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 CBG's rate influencing the hospital revenue (Thygesen, et al. 2011). This study aimed to determine the influence of completeness of supporting examination results and procedure in discharge summary to suitability of severity level determination in tertiary referral hospital.

METHODS

This was an analytical study with cross-sectional design. The study was conducted at Dr. Soetomo Regional General Hospital, Surabaya. The population was the medical record files of the inpatients discharge summary in October 2018 as many as 4102 files, November 2018 as many as 4492 files, and December 2018 as many as 4008 files. The data were collected from observation towards inpatient's discharge summary. Sampling was taken used simple random sampling technique, and 99 samples were obtained (October 33 samples, November 35 samples, and December 31 samples) using Slovin formula calculation.

Data collection was conducted an observation towards discharge summary using an instrument to determine its completeness. For the aspect that had been completed and fulfilled, the guideline of medical record's documentation would be given score 1, while the aspect that did not fulfill it would be given score 0. To determine the seamlessness 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. However, it was specially used for the indications aspects of supporting examination results, procedures, and secondary diagnoses. The data containing severity level was collected from the data processed by txt data and the current result of INA-CBG's grouping on National Case-mix (NCC) Center software in the Ministry of Health of Indonesia.

The completeness aspect was collected by looking at overall information needed and the seamlessness aspect between the diagnoses while the determinant factors were collected by observing the seamlessness of indication of supporting examination result, secondary diagnoses, and procedures. Those data were analyzed descriptively and analytically used a regression statistical test on SPSS Software version 21.0.

RESULTS

Out of 99 samples 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 shown in **Table 1**. Out of 99 samples observed, the level of supporting examination and procedure can be seen in **Table 1**.

The completeness of supporting examination filling was 60.15%, and the completeness of procedure filling in discharge summary was 81.40%. **Table 2** shows that the results of the supporting examination results are still relatively low.

Of the 99 samples, it was taken the processed txt data that had been input into National Case-mix Center software. Thus, the frequency data of the established severity level was obtained. The percentage of severity level in inpatient's case can be shown in **Table 2**. The

Table 1. The Frequency of the Percentage of the Completeness of Discharge Summary Filling, Supporting Examinations and Procedure in Inpatient's Medical Records at Dr. Soetomo Regional Public Hospital within October-December 2018

Aspects	October	November	December	Fourth Quarter
Completeness	82.96	83.19	74.03	80.3
Supporting Examination	59.49	70.53	49.43	60.15
Procedure	87.23	95.24	60.00	81.40

Source: The Report of Medical Record of Completeness Study at Dr. Soetomo Regional Public Hospital, 2018

Table 2. The Percentage of Severity Levels and Suitability of Severity Levels towards Inpatient Case in Inpatient's Case at Dr. Soetomo Regional Public Hospital within October-December 2018

Severity Levels	I	II	III
Percentage	43.44 %	34.34 %	22.22 %
Suitability	39 (90.7%)	29 (85.3%)	22 (100.0%)
Unsuitability	4 (9.3%)	5 (14.7%)	0 (0.0%)

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

percentage of severity level I was 43.44%, and the percentage of severity level III was 22.22%.

To know the seamlessness of severity level, the data processing from the samples was taken using txt data of NCC E-Claim, and the results are shown in **Table 2**. The results of the statistical influence test in the form of a logistic regression test indicate the effect of supporting examination on the severity level (p-value = 0.035). There is no effect of the procedure on the severity level (p-value = 0.973). There is no effect of secondary diagnoses on severity level (p-value = 0.320). Meanwhile, the results of the statistical significance test showed that the congruity between the supporting examination results and procedures (p<0.0001) and the completeness of secondary diagnosis in discharge summary (p<0.0001) had an influence on the suitability of severity levels.

DISCUSSION

Medical records function as data storage and information on patient services. This is useful to assist doctors in making decisions in taking action and determining the diagnosis of patients (Gosanti & Ernawaty 2018). Filling the supporting examination completely and suitability of the procedure is very important to do. Analysis of this problem is very necessary in order to achieve the quality of health services. Discharge summary is an important communication tool to introduce to a wide audience regarding the safety, quality, and sustainability of care. This allows for efficient dissemination of information between health professionals in primary and secondary care settings and is a permanent patient record (Mehta, et al. 2017). One of the main functions of the discharge summary is the delivery of accurate diagnostic information by identifying the main reason for entry (primary diagnosis), and other linear diagnoses, including comorbidity (secondary diagnosis) (van Walraven, et al. 2002). Inaccurate or incomplete diagnoses lead to incorrect clinical determinations, improper management, poor quality of care, and high risk of readmission. Inaccuracies in the list of diagnoses recorded in the discharge summary will have a wider

impact on key processes, including clinical coding, research, supervision, clinical audit, quality improvement, and hospital financial remuneration (Russell, Hewage, and Thompson 2014).

Each diagnosis and intervention procedure written in the discharge summary would be given a coding based on ICD 9 CM and ICD 10 issued by the WHO. The determination of this coding should be based on coding guideline if there are multiple diagnoses(O'Malley, et al. 2005). This determination of severity level is based on the input in NCC software after grouping has been conducted (Thygesen, et al. 2011). Writing an incorrect diagnosis will affect the amount of the tariff, pending claims, and will slow down the process of claiming the cost of treatment for patients. This is because an incorrect INA CBG's verification file will not be claimed (Kripalani, et al. 2007). The incompleteness of writing a medical record, especially writing a diagnosis on a medical resume will have an impact on under coding. Several factors can affect inaccurate codes of diagnosis and procedure, among others, are incomplete administrative documentation, the physicians do not assign the codes, unreadable handwriting, the use abbreviations, coding training, workload, infrastructure, and complexity of diseases (Hussein, et al. 2018). The completeness of supporting examination results and procedure in discharge summary shows that it is still relatively low. This may be influenced by the types of cases handled by the hospital that are more complex. It requires more than one medical examination and multidisciplinary health care services (Kind & Smith 2008).

Doctors with good medical record knowledge can correctly fill out disposal summaries, and vice versa. However, knowledge is not the only factor influencing the completeness of the discharge summary or medical record. There are other factors, namely workload, training, compensation, and monitoring (Ludwick & Doucette 2009). Patients are external customers who need a cure process for their disease, as a result of the service, but also sensed and evaluated care during their service process. The determinants of service quality are measurement, control, and improvement of customer

service quality (Tuami, et al. 2018). Writing for a secondary diagnosis is good. The results of this study are not in line with other research, stating that writing a secondary diagnosis in the discharge summary is the highest proportion for medical record mismatches. In addition, another research states that the incompleteness of the secondary diagnosis is caused by a secondary diagnosis that is not written in the return summary. Documentation secondary diagnosis of missing or comorbidities can cause code errors or under coding. In some cases, comorbid misdiagnosis decreases the severity of the disease resulting in lower hospital claims. Under coding in patients with complications or comorbidities can occur more often than over coding, resulting in less claim payments (Bauer, et al. 2014).

Based on the Regulation of Indonesian Ministry of Health of Indonesia Number 76 of 2016 on the INA-CBG's Guideline in the National Health Insurance Implementation, the severity level of inpatients in INA-CBG's is divided into three levels in that the determination depends on the coding result and the completeness of the available supporting medical examinations. There are Severity Level I, II, and III. Severity Level I is a mild level of severity without any complication and comorbidity, where the primary diagnosis is a single diagnosis without requiring any supporting medical examination or therapy. Severity level II is a moderate level of severity with complication and comorbidity following the primary diagnosis. In this case, the intervention procedure is optional. Severity level III is a high level of severity with major complication and comorbidity (Departemen, 2014).

Efforts that can be made to avoid mistakes in determining the severity of patients is that the doctor must be complete and correct in writing the diagnosis, the patient's diagnosis code, the selection of the primary diagnosis and secondary diagnosis, complications and comorbidities must be precise. Therefore, there will be no error in determining the severity of the patient (Amin & Nasharuddin 2013).

CONCLUSION

The completeness of secondary diagnosis coding, procedure, and supporting examination results in discharge summary influences in advanced severity level.

ACKNOWLEDGEMENT

REFERENCES

Amin, M., & Nasharuddin, S. Z. (2013). Hospital service quality and its effects on patient satisfaction and behavioural intention. Clinical Governance: An International Journal.

Bauer, K., Schwarzkopf, L., Graessel, E., & Holle, R. (2014). A claims data-based comparison of comorbidity in individuals with and without dementia. BMC geriatrics, 14(1), 10.

Departemen K. R.I. (2006). "Pedoman Penyelenggaraan Dan Prosedur Rekam Medis Rumah Sakit Di Indonesia Revisi II Tahun 2006." Depkes RI 13–15.

Departemen Kesehatan Republik Indonesia. (2014). "Peraturan Menteri Kesehatan Republik Indonesia Nomor 27 Tahun 2014 Tentang Petunjuk Teknis Sistem Indonesian Case Base Groups (INA-CBGs)." 50.

Dewi, C.K. (2017). "Information Quality Assessment of Outpatient Medical Reord Document." Indonesian Journal of Health Administration 5(1).

Gosanti, A. Z., & Ernawaty, E. (2017). Analisis Kelengkapan Penulisan Soap, Kie, dan Icd X pada Rekam Medis di Poli Umum dan Kia-Kb Puskesmas X Surabaya. Jurnal Administrasi Kesehatan Indonesia, 5(2), 139-144.

Hussein, R. A., Majeed, A. A., Mahmoud, R. A., Saihoud, S. A., & Al-Hamadi, N. Q. (2018). Assessment of the documentation completeness level of the medical records in Basrah General Hospital. The Medical Journal of Basrah University, 36(2), 50-59.

Indonesia, R. (2008). Peraturan Menteri Kesehatan Republik Indonesia Nomor 269/Menkes/Per/III/2008 tentang Rekam Medis. Jakarta: Kementerian Kesehatan Republik Indonesia.

Kind, A. J., & Smith, M. A. (2008). Documentation of mandated discharge summary components in transitions from acute to subacute care. In Advances in patient safety: New directions and alternative approaches (vol. 2: Culture and redesign). Agency for Healthcare Research and Quality (US).

Kripalani, S., LeFevre, F., Phillips, C. O., Williams, M. V., Basaviah, P., & Baker, D. W. (2007). Deficits in communication and information transfer between hospital-based and primary care physicians: implications for patient safety and continuity of care. Jama, 297(8), 831-841.

Lærum, H., Ellingsen, G., & Faxvaag, A. (2001). Doctors' use of electronic medical records systems in hospitals: cross sectional survey. Bmj, 323(7325), 1344-1348.

Ludwick, D. A., & Doucette, J. (2009). Adopting electronic medical records in primary care: lessons learned from health information systems implementation experience in seven countries. International journal of medical informatics, 78(1), 22-31.

Mehta, R. L., Baxendale, B., Roth, K., Caswell, V., Le Jeune, I., Hawkins, J., ... & Avery, A. J. (2017). Assessing the impact of the introduction of an electronic hospital discharge system on the completeness and timeliness of discharge communication: a before and after study. BMC Health Services Research, 17(1), 1-10.

O'Malley, Kimberly J., Karon F. Cook, Matt D. Price, Kimberly Raiford Wildes, John F. Hurdle, and Carol M. Ashton.(2005). "Measuring Diagnoses: ICD Code Accuracy." Health Services Research 40(5 II):1620–39.

Peabody, J. W., Luck, J., Jain, S., Bertenthal, D., & Glassman, P. (2004). Assessing the accuracy of administrative data in health information systems. Medical care, 1066-1072.

Russell, P., Hewage, U., & Thompson, C. (2014). Method for improving the quality of discharge summaries written by a general medical team. Internal Medicine Journal, 44(3), 298-301.

Samad, R., Akbar, F. H., Pasiga, B. D., Pratiwi, R., Anwar, A. I., Djamaluddin, N., & Afiyah, N. (2018). Evaluation of patient satisfaction on quality of public dental health service from different dimensions in Indonesia. Pesquisa Brasileira em Odontopediatria e Clinica Integrada, 18(1), 4033.

Sammer, C. E., Lykens, K., Singh, K. P., Mains, D. A., & Lackan, N. A. (2010). What is patient safety culture? A review of the literature. Journal of Nursing Scholarship, 42(2), 156-165.

Simamora, R. H.(2019). "Documentation of Patient Identification into the Electronic System to Improve the Quality of Nursing Services." International Journal of Scientific and Technology Research 8(9):1884–86.

Siregar, I. (2019). "Application Quality Function Deployment to Improve Quality of Patient Service in Hemodialysis Installation." IOP Conference Series: Materials Science and Engineering 598(1).

Thygesen, Sandra K., Christian F. Christiansen, Timothy L. Lash, Steffen Christensen, & Henrik T. Sørensen. (2011). "Predictive Value of Coding of Diagnoses in the Charlson Comorbidity Index in the Danish National Registry of Patients." BMC Med Res Methodol. 11(83):2–7.

Tuami, Hadijah, A. Indahwaty Sidin, & Andi Zulkifli. (2018). "The Analysis Service Quality Based on Patient Expectation and Assessment at Mamuju Regecy Local Public Hospital 2016." ACM International Conference Proceeding Series 226–31.

Van Walraven, C., Seth, R., Austin, P. C., & Laupacis, A. (2002). Effect of discharge summary availability during post-discharge visits on hospital readmission. Journal of general internal medicine, 17(3), 186-192.

Zegers, M., de Bruijne, M. C., Spreeuwenberg, P., Wagner, C., Groenewegen, P. P., & van der Wal, G. (2011). Quality of patient record keeping: an indicator of the quality of care?. BMJ quality & safety, 20(4), 314-318.

The influence of completeness supporting examination and discharge summary

5   Pujo Broto Iriawan Putra, Yuly Peristiowati, Indasah Indasah. "Analysis of the Accuracy of Ina-Cbg's Cost Based on the Type of Disease and Influencing Factors in the Inpatient Installation of RSUD dr. Soegiri Lamongan", JOURNAL FOR QUALITY IN PUBLIC HEALTH, 2018
Publication

1%

6   Destanul Aulia, Sri Fajar Ayu, Nur Hidayah Nasution. "Analisis Upaya Rumah Sakit dalam Menutupi Kekurangan Biaya Klaim Indonesia Case Base Group (INA-CBGs) Yang Dihitung dengan Metode Activities Base Costing pada Rumah Sakit Swasta Kelas C di Kota Medan Tahun 2017", Jurnal Ekonomi Kesehatan Indonesia, 2017
Publication

1%

7   Manuel Mocholi-Arce, Ramon Sala-Garrido, Maria Molinos-Senante, Alexandros Maziotis. "Performance assessment of water companies: A metafrontier approach accounting for quality of service and group heterogeneities", Socio-Economic Planning Sciences, 2020
Publication

1%

8   www.researchgate.net
Internet Source

<1%

9 ecommons.luc.edu
Internet Source

<1%

10 Jade Singleton, Chengxi Li, Peter D. Akpunonu, Erin L. Abner, Anna M. Kucharska-Newton. "Using natural language processing to identify opioid use disorder in electronic health record data", International Journal of Medical Informatics, 2023
Publication

<1%

Exclude quotes	Off	Exclude matches	Off
Exclude bibliography	On		

The influence of completeness supporting examination and discharge summary

FINAL GRADE

/100

GENERAL COMMENTS

Instructor