FACTORS THAT AFFECTING THE ACCURACY OF CODING DIAGNOSIS AND MEDICAL PROCEDURES OF INPATIENT HEALTH RECORDS IN 1ST SEMESTER 2013 AT PUBLIC HOSPITAL (RSUD) OF SEMARANG DISTRICT

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ABSTRACT

Since the implementation of Prospective Payment Systems with Case-mix Classification based on Diagnosis Related Gmts (DRG's) all over the World, the coding of main diagnosis and medical procedures has played an important role in health care reimbursement. The accuracy of coding has becoming primary conditions In claim reimbursement Many hospitals suffered loss in reimbursement due to inaccuracy of coding diagnosis and procedures. In Indonesia, the same problems occurred in many government hospitals served for Jamkesmas. One of those is RSUD Kota Semarang.

In coding process, there are many factors that have roles in producing accurate codes; roles of medical staff (doctors), health information management (HIM) staff, completeness of medical records, facilities and infrastructures, and last is management policies. This research is aimed to analyze those factors affecting the accuracy of coding main diagnosis and medical procedures in health record of inpatlents during 1 semester of 2013 at RSUD (Public Hospital) Semarang District. Research is conducted quantitatively to get the status of coding accuracy. and qualltatively to know which factors affecting the coding accuracy through Focused Groups Discussion. Subjects of research are; coder specialized In handling Jamkesmas claims, head of HIM department, medical staff (doctors) as the person responsible of the main diagnosis and medical procedures written in the records. Besides, observation to completeness of the records, facilities and Infrastructure, and also management policies related to coding procedures are also obtained.

The results are as follows ; Quantitatively. the status of coding accuracy are qulte good, with 37% accurate for main diagnosis codes, and 50% for medical procedure codes. Qualitative datas revealed for the factors affecting the accuracy status of coding main diagnosis an medical procedures are ; (a) The main diagnosis assigned by the doctors are not in accordance to the morbidity rules in ICD- 10. that made the coders have to do deep analysis through the records to be able to assign the right codes. But this can lead into coding error when the coders has mistakenly assuming the diagnosis or couldn't got the appropriate infomation. (b) Despite of the educational backgrounds in HIM, coders do not have sufficient knowledge about procedures In medicine, so they may picked up the wrong codes (C) Lack of completeness of health records has contributed in the wrong assignment of codes. But (d) All facilities and infrastructures and also management policies related to Coding Procedures have been supportively enhance the coding process, only that dissemination and implementation of the policy must be re-evaluated in the aspects of discipline and enforcement.

In Conclusion, improvement of coding quality in RSUD Kota Semarang must involved all doctors responsible for determining the main diagnosis and medical procedures. coders and also improvement in the quality of health records. to produce more highly status of coding accuracy of main diagnosis and medical procedures

Keywords: *coding accuracy, inpatient health records, factors.*

INTRODUCTION

Ever since the mplementation of Prospective Payment Systems with Case-Mix Classification based on Diagnosis Related Groups (DRG's) in many countries all over the world, the accuracy of clinical data codes has become vital in hospitals financing. Health Care Reimbursement is highly dependent to the accuracy of clinical data which has transfomed into DRG. that determine

the rates of healthcare services reimbursed to the hospital. [1,2,3,4]

In Indonesia, health care reimbursement using case-mix classification based on Indonesian DRG (INA DRG) had been implemented in National Security Health Service for the Poor (Jaminan Kasehatan Masyarakat Misicin JAMKESMAS) in several pilot protect's hospital since year 2006, arid was developed then. INA-DRG has then developed until became the so called NA CBGs right now And the implementation has spread into hundreds of government hospital, serving for JAMKESMAS and JAMPERSAL (National Security Maternal Health Service for the Poor). And now the government has launched the National Social Security Systems, initialed with providing National Health Care Security (Jaminan Kesehatan Nasional;JKN) managed by the BOD of National Security (Baden Pengelola Jaminan Sosial ; BPJS) since 2014. Accordingly, the Implementation of health care financing using case-mix classification will be disseminated all over the country. [5,6]

Alongwith the implementation of Case- mix Classification for reimbursement, there is a significant change in the management of health information, particularly in Chnical Data Coding. Health Care Reimbursement based on DRG Is highly influenced by Clinical Data (especially Main Diagnosis and Medical Procedures Codes) entered Into the software for grouping process. The amount of claim reimbursed depend on DRG codes produced by the software Deficiency in quantity and quality of coding diagnosis and procedures will bring about significant effect to the hospital's earning.

In sorne researches, there are some hospitals which suffer loss due to Imbalance between unit cost spent by the hospital and the amount of claim reimbursed (Junadi, 2010)[7]. There are even unpayable or rejected claims because the software systems can not process 'grouping' DRG. And based on research, this is mainly caused by the inaccuracy of diagnosis and medical procedures codes (Danuri, 2009).[8]

Accuracy of coding diagnosis and medical procedures is affected by several factors. The main factor, of course, Is a coder which assigned diagnosis and medical procedures codes based on data in medical records. Coder's characteristics that affecting the codes' accuracy are; educational background, experience arid working-time, and also trainings related to coding. Other factor are doctor who wrote diagnosis and medical procedures completeness of medical records; facilities ard infrastructures; and hospital policy In coding [4,9,10]

In Indonesia, many researches about the coding accuracy of diagnosis and medical procedures have done, but only as diploma III student's scientific paper, and rarely found in journals. Some research in journals show that the level of coding accuracy of diagnosis and medical procedures have been increasing from time to time. but the average accuracy level Is still between 30. 70% only [4,11,12,13,14] And research about the factors affecting the accuracy of diagnosis and medical procedures codes haven't done much From sorne student's research it is known that factors affecting clinical data code's accuracy are : specification of diagnosis written by the doctor, and completeness of medical records.[14,15] Another research by Dyah Ernawati (2012) had found that there are lack 01 doctors's knowledge about ICD-10, and lack of leadership made the appropriateness of diagnosis written in medical records compared Lo ICD-10 is still unoptirnzed.[16]

Considering the importance of clnical data coding accuracy in medical records, and the benefits In various aspects: from hospital management and planning, clinical research and development of health policy by the Local Government, this research is aimed to find out the level al coding accuracy In diagnosis and medical procedures in hospital alongwith affecting factors, including ; coders, doctors, facilities and infrastructures and also hospital policies.

RSUD Kota Semarang is a type B hospital in the district of SernarangThe medical record unit in the hospital is coordinated by head of department and subordinate several coders, divided into inpatient and outpatient coding, and also Jamkesmas Functioning as teaching hospital has brought RSUD Kota Sernarang into practical fields for co-assistance (Bachelor of medicine that goes through clerkship for medical doctor) and residences (medical doctor who goes through residenceship for specialist). This made the fillng of medical records have been under these students responsibility Even though all doctors responsible For the medical records have been trained and have direct supervision from doctors in charge in the hospital, but sometimes the diagnosis and medical procedures written in the records have brought dificulties for coders in assigning the correct codes.

And despite of no problems in Jamkesmas claims at RSUD Kota Semarang, but during pleminary studies, there are still obstacles in obtaining case mix coding of diagnosis and procedures by coders. [17]

RESEARCH GOALS

This research is conduced to analyze factors affecting the accuracy of coding diagnosis and medical procedures in medical records for inpatient of RSUD Kota Semarang during first Semester 2013

RESULT

1. Coding Accuracy Of Main Diagnosis

Observation upon 383 samples of medical records which had done on last October 2013, result as follows:

Table 3.1.1
Coding Accuracy Of Main Diagnosis Of Inpatient Health Records in RSUD Kota Semarang During 1st Semester 2013

Coding Accuracy	Number Of Codes of Main Diagnosis
Accurate	304
Inaccurate	79
Total sum	383

Based on such observation, it is known that the numbe of accurate codes exceeded the inaccurate. Belows this is the levels of accuracy of those codes:

Table 3.1.2
Levels of Coding Accuracy Of Main Doiagnosis Of Inpatient Health Records In RSUD Kota Semarang During 1st Semester 2013

Subject	Number Of Codes	Levels Accuracy (%)
Accurate	304	79,37
Inaccurate	79	20,63
Total sum	382	100

Based on analysis on coding accuracy of diagnosis that was assigned by the coder at RSUD Kota Semarang, there are several factors that caused inaccuracy of coding of coding diagnosis, includes;

1. The diagnosis written by doctors are not suitable to the criteria of main diagnosis according to Rules Of Morbidity Coding in ICD-10

2. Unthoroughness of Coder in assigning codes according to the specification available in ICD-10 categories
3. Lack of Coder's Knowledge about medical terminology written by doctors
4. On Cases which need multiple cause analysis such as Deliveries, Coders do not write complete codes of diagnosis
5. In Assigning Codes Of Sectio Caesarean Deliveries, Coder seemed not knowing the difference between Elective and Emergency

Other factors that are found during observations includes;

1. Incompleteness of supporting data from assigning codes, such as; Brain CT Scan on Stroke, or Operation Report on Acute Laboratory Report of Pathology in Neoplasm
2. Doctors tend to write diagnosis not in a right sequence; starting from main diagnosis, other or additional diagnosis, and complications, all of which still unsuitable to morbidity Coding Rules in ICD-10. This has forced the coder to read thoroughly the cocument to make sure which condition is dominant and suiable to be coded as the diagnosis.

2. Coding Accuracy of Medical Procedures

As for medical procedures coding accuracy the result are as follows :

Table 3.2.1
Coding Accuracy Of Medical Procedures Of Inpatient Health Records in Rsud Kota Semarang During 1st Semester 2013

Coding Accuracy	Number Of Codes of M Diagnosis
Accurate	53
Inaccurate	53
Total sum	106

Based on such observation, it is known that the number of accurate codes are equals to the inaccurate. Below this is the levels of accuracy of those codes:

Table 3.2.2
Levels of Coding Accuracy Of Medical Procedures
Of Inpatient Health Records In RSUD
Kota Semarang During 1st Semester 2013

Subject	Number Of Codes	Levels Accuracy (%)
Accurate	53	50
Inaccurate	59	50
Total sum	106	100

Based on analysis towards the accuracy of medical procedures codes assigned by the coder of RSUD Kota Semarang, there are several factors which affecting inaccuracy of codes, such as :

1. Coder only give one code to the main procedures only, while in some cases there are more than single procedures, it is advised to cde all procedures (multiple coding).
2. Coder tend to upcoding, give more codes of procedures, even doctor do not stated it on the records. For examples, in a few cases, doctors only wrote spontaneous delivery, but coder gave assited delivery code, made it inaccurate code.
3. Coder give a less-specific procedures code, because the doctors do not specify more about the procedures. For example, in soft tissue tumor's excision do not specify which part of the soft tissue excised, made it coded less specific.
4. Coder gave inaccurate codes because of lack of knowledge about the procedures and besides the doctors didn't give sufficient description, so coder just give general code. For example, coder had assigned code for Ultraviolet Light Therapy as Phototherapy, because the doctor wrote it so. While actually it was Ultraviolet Light Therapy for icteric babies with hyperbillirubinernia.
5. Lack of thoroughness and precision from Coder In assigning codes.

3. Factors Affecting Coding Accuracy

According to the Focus Froup Discusions held by the RSUD Kota Semarang on November 12th, 2013 and attended by coding stakeholders such as doctors, coders, head of HIM Dept, there were discovered some fact as follow:

1. The RSUD Kota Semarang has made particular policy about how to decide main diagnosis and assigning codes of main diagnosis in a form os SOP (standard Operating Procedures), which had been socialized and disseminated. But doctors often hard to get the information comprehensively due to tight-scheduled and dutles.
2. There have been several trainings done for coders, but unlikely for the doctors.
3. Steps and procedures of coding have been well-conducted by the coders, including analysis of health records documents, re-confirmation to doctors, and this leads to better level of coding accuracy (>70%)
4. Doctors still don't understand Steps and Procedures of Coding, particularly Morbidity Coding rules of ICD-10, so that sometimes the main diagnosis written in the column didn't match to the main problems handled in the patient, However, coder with high skills proved to be good In assigning the codes.
5. Communications between coder-doctor have been good mediated by the medical commite, so coders felt helped In assigning the right codes.
6. Medical audit has been done by the commite but has never involved HIM Dept or coders, while coding Audit has never been done, either by Dept or Commite.
7. Problems that were discovered either by doctors or coders or even the head of HIM Dept is the difference criteria of main diagnosis, between Morbidity Coding Rules and INA CBGs standard so it would affect the doctor's or hospital profiling, especially in determining the most cases or in research. This is unavoidable considering the government rules that makes changes.
8. Some things that need to be improved, from the point of view of doctors or coders, that is the ability of coder in comprehending and resuming all health care services rendered by going through all documents thoroughly to finally be able to assign the accurate codes.

DISCUSSION

As we know, coding main diagnosis or medical procedures is a process that can be affected by many factors such as :

1. Medical Doctors :

Doctors are the one who's responsible to diagnosis the patient illness and justifying the

health care services and management based on main problems or diagnosis. Doctors needs to know what the coders do to gain information about the care services and management, in order to assign the correct code. So that doctors may write sufficient, necessary information to help coders making the accurate codes.

But the facts are that doctors in RSUD Kota Semarang has never get particular training about coding, and mostly do not really know about procedures of coding. That explain why the diagnosis and procedures written are still not suitable to the rules of ICD-10

2. Coders

The role of coder are very significant in assuring the levels of coding accuracy, educational backgrounds, trainings, and length of work or experience would be benefical for their performances. Good knowledge about coding procedures and rules would make coders made high accuracy in coding.

And based on the result, coders of RSUD Kota Semarang has got the expected qualifications, which are ; Graduated from Diploma III of Health Information management, have underwent several trainings in coding. These are supporting factors of good performance.

This is shown by the good levels of coding accuracy,particularly coding main diagnosis which is more than 70 %. Inafct if we see the way doctors wrote diagnoses I health records, we might say thet coder skills in digging information is very demanding to make accurate codes.

3. The document completeness

Incompleteness of the documents will affect the quality of health records, which also reflected the quality of health care services. Incomplete document will prevent the coder from finding the right information to make accurate codes.

Based on observation towards samples of health records, it was found that there were many incompleteness of the supporting examination such a CT Scans, Operation Reports or Pathology Lab Reports, while actually that information is needed by coder to assign the correct codes.

4. Policies;

Hospital policies in written is very crucial as the foundation of operation and as the guidance of health information management services. Hospital policy can be stated in a form of BOD (Board of Directors) Statements, or SOP (Standard Operating Procedures), that will enforce all staf involved in health records documentary to fulfill the task according to rules and laws prevail.

Due to the result of PGD, it is foud that RSUD Kota Semarang have already had and ruled policy about how to write and determine diagnosis and procedures. But during dissemination and socialization there seemed many doctors have not been well informed. These made doctors attitude give less support in coding procedures.

5. Facilities and Infrastructures;

Based on observation, it is found that the facilities and infractructures in the RSUD Kota Semarang has been sufficient.

CONCLUSION

1. Levels of Coding Accuracy of Main Diagnosis in Inpatient Health Records Documents of RSUD Kota Semarang in 1th Semester of 2013 is 79,37 %
2. Levels of Coding Accuracy of Medical Procedures in Inpatient Health Records Document of RSUD Kota Semarang in 1st Semester of 2013 is 50 %
3. Factors affecting the levels of coding accuracy are as follow:
   a. Lack of doctors knowledge about coding procedures and coding rules of ICD-10 has made them less care about the accuracy of codes. The writings of the main diagnosis by doctors are still not comply to Coding Morbidity Rules of ICD-10, that forced coders to do further analysis to the documens to be able to assigned the correct code. But this also can bring the coder's mistake due to lack of information or knowledge about the diagnosis and procedures.
   b. Even though coders have sufficient qualification regarding educational background and trainings, but their less

knowledge about kinds of procedures, together with incompleteness of documents, had contributed to inaccuracy of coding.

c. Incompleteness of Health Records to obtain sufficient information for assigning codes correctly.

d. Hospital polices, also facilities and infrastructures needed for coding procedures have been good in supporting coding accuracy. Only that the socialization and implementation are indiscipined.

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