

# Factors contributing to inaccurate diagnosis code in obstetric case in hospital

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## ABSTRACT

As the diagnostic code serves as the foundation for determining the cost of health services and formulating policy, its quality must be ensured. In some hospitals, the code is extremely inaccurate. If the patient's diagnosis code is not accurately coded, the level of data validation for the obtained information will be low. This will result in inaccurate reports, including outpatient morbidity reports, top ten disease reports, and Health Insurance (Jamkesmas) claims. This study aimed to examine the inaccuracy of the diagnostic code for obstetric cases in hospital. This study employs a Literature review methodology in which researchers will compile various scientific articles/journals into a scientific work. Based on the findings of the study, the percentage of inaccurate diagnosis codes for obstetric cases was greater than 50% in five journals, 50% in one journal, and less than 50% in three journals. The inaccuracy of the obstetric case diagnosis code is due to Man, Machine, Material, and Method factors. Thereby, it can be concluded that the percentage of inaccuracy of the diagnostic code for obstetric cases is quite high, and that the most common factor causing inaccuracy of the diagnostic code for obstetric cases is the Man factor, namely that the writing of the diagnosis is less clear, complete, and specific. Consequently, it is necessary to monitor and reevaluate medical officers, especially doctors and assistants, and to establish a policy stating that writing diagnoses is the responsibility of doctors and must adhere to ICD rules.

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## INTRODUCTION

The hospital places a high value on the medical record, which includes the diagnosis code as one of its components. Since the diagnostic code serves such an important purpose as the foundation upon which the cost of medical services (Jabbar et al., 2020) and the formulation of policy are based (Park et al., 2019), the quality of the code must be ensured. It is essential to examine the diagnosis code because a poor diagnostic code can be detrimental to the hospital (Isnaini et al., 2022). Evaluation of the diagnosis code can be done with several indicators including, accuracy (validity), completeness, consistency (reliability) and timeliness so that the implementation of diagnosis coding by coding officers must comply with the ICD-10 rules (Benova et al., 2020; Maryati et al., 2020).

According to Oktamianiza (2019) in (Arpit & Yulia, 2020), the precision and precision of diagnostic data is of utmost significance in the field of clinical data management, cost collection, and other health care as well as services-related issues. It is widely recognized that code accuracy is crucial for hospitals, especially BPJS hospitals (hospitals that in collaboration with BPJS program), yet some hospitals continue to struggle with poor coding practices. Errors in coding obstetric cases will certainly have a major impact on hospitals (Pilcher et al., 2022), precisely in financing the INA-CBG's system (Arpit & Yulia, 2020).

If the patient's diagnosis code is not coded accurately, the information obtained will have a low level of data validation. This will result in inaccurate reports, for example outpatient morbidity reports, reports of the top ten diseases or Jamkesmas claims (Hatta, 2011). It is vitally important that the diagnosis code be entered correctly into the corresponding section of the patient's medical record, because the quality of the hospital will suffer if the diagnosis code is incorrect (Arpit & Yulia, 2020). According to Maryati (2016), only 35.2% of obstetric cases at PKU Muhammadiyah Sukoharjo Hospital had correct diagnoses written down, while 64.8% had inaccurate diagnoses written down. Meanwhile, the accuracy of the diagnosis code for obstetric cases is 58% and the diagnostic code inaccuracy is 42% (Maryati, 2016).

In addition, according to research by Arimbawa et al. (2022) stated that as many as 45.6% of medical record files were incomplete in writing a diagnosis and 49% complete files in writing a diagnosis of obstetric cases in the third quarter of hospitalized patients at RSUD Premagana. A total of 78.9% of ICD-10 code files for third quarter obstetrics inpatients at Premagana General Hospital were inaccurate and 21.1% of ICD-10 code files were accurate (Arimbawa et al., 2022).

In light of the foregoing, the authors intend to conduct a literature review study titled the inaccuracy factor in the diagnosis code of obstetric cases at the hospital. This study aimed to examine the inaccuracy of the diagnostic code for obstetric cases in hospitals.

## RESEARCH METHOD

This study employs a Literature review methodology in which researchers will collect, evaluate, and select national scientific articles and journals to produce a scientific work. Researchers will analyze previous journals to identify similarities, after which they will express their own opinions and draw conclusions based on the journals they have read. Afterwards, the obtained journals are sorted according to the critical appraisal journal, and the remaining journals are chosen based on the results of the feasibility analysis.

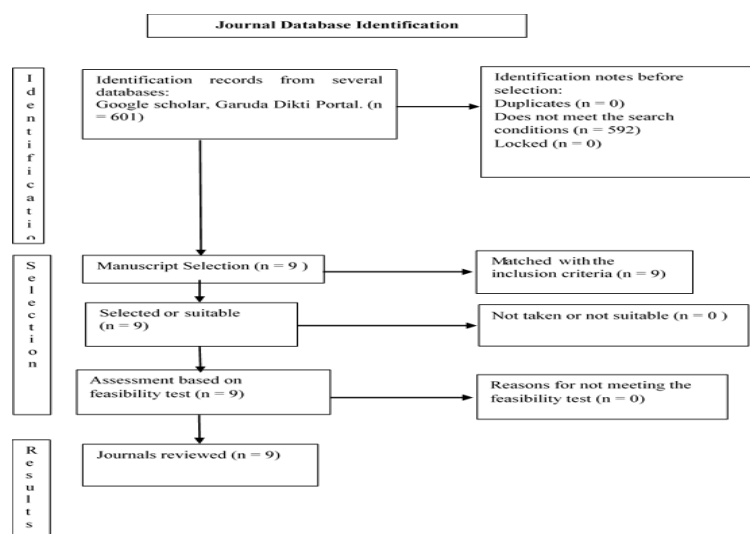


Figure 1. PRISMA Selection Flow Figure

The study was carried out in three distinct stages. The first stage involved identifying relevant articles from various databases such as Google Scholar and Garuda Dikti Portal. The initial search yielded a total of 601 articles. However, upon reviewing the articles, it was found that 592 of them did not meet the predetermined search conditions. Despite this, no duplicates or locked articles were identified, leaving a total of only 9 articles for further consideration.

In the second stage of the study, the 9 articles were subjected to a rigorous selection process, with inclusion criteria and a feasibility test being used to assess their suitability. After careful consideration, it was determined that all 9 articles met the necessary criteria and were therefore deemed suitable for further review.

The third and final stage of the study involved a comprehensive review of the 9 selected articles. This stage allowed the researchers to gain a deeper understanding of the research question, the methodology used, and the findings presented in each article. By conducting a thorough review of each article, the researchers were able to draw meaningful conclusions and insights that helped them to answer the research question in a more comprehensive and nuanced manner.

## RESULTS AND DISCUSSIONS

Based on the identification stage, there are 9 journals of identification of accuracy and inaccuracy of diagnostic codes for obstetric cases in hospital which will be reviewed as follows.

**Table 1.** identification of accuracy and inaccuracy of diagnostic codes for obstetric cases

| No | Researcher,<br>Year, Country  |  | Research Title   | Research design | Research Subject  | Research Result  |  |
|----|---|--|--|-----------------|---|--|--|
|    |   |  |  |                 |   | Accurate   | Inaccurate   |
| 1. | Andi Tenri<br>Nurrul Izzah<br>Alik, 2016,<br>Indonesia<br>(Alik, 2016)                      |  | The Relationship between the Accuracy of the Obstetric Diagnostic Code and the Smoothness of BPJS Claims at Sawerigading Hospital, Palopo City, South Sulawesi | Cross Sectional | Obstetric medical record                                  | The correct code were 17 medical records with a percentage of 38.6%. | Inaccurate obstetric diagnostic code were 27 medical records with a percentage of 61.4%. |
| 2. | Aurelius Anugerah<br>Harvey Pepo,<br>Noor Yulia, 2015,<br>Indonesia<br>(Pepo & Yulia, 2015) |  | Completeness of Writing a Diagnosis of a Medical Resume on Clinical Coding Accuracy Midwifery Case   | Cross sectional | Case patient medical record inpatient obstetrics in 2014. | 22 (50%) medical records with correct clinical coding                | 22 (50%) medical records were clinically coded incorrectly.                              |
| 3. | Febi Dyah Ayu Seruni,<br>Sri Sugjarsi, 2015,<br>Indonesia<br>(Seruni & Sugjarsi, 2015)      |  | Problem Solving Cycle SWOT Code Accuracy Diagnosis of Obstetric Cases on Entry and Exit Sheets (RM 1a) Inpatients at RSUD dr. Sayidima Magetan                 | Descriptive     | Medical record file                                       | Documents with accurate diagnosis of obstetric cases were 12 (27%)   | Documents that are inaccurate were 33 (73%).   |

| No | Researcher,<br>Year, Country   | Research Title  | Research<br>design                   | Research<br>Subject   | Research Result   |   |
|----|--|---|--------------------------------------|---|---|---|
|    |  |   |                                      |   | Accurate  | Inaccurate  |
| 4. | I Made Sudarma<br>Adiputra, Ni<br>Luh Putu Devhy,<br>Kadek Intan<br>Puspita Sari,<br>2020, Indonesia<br>(Adiputra et al.,<br>2020)         | Overview of<br>Icd-10 Code<br>Accuracy in<br>Quarter 1<br>Obstetric Cases<br>in Inpatients at<br>the Sanjiwani<br>Hospital,<br>Gianyar  | Quantitative<br>descriptive<br>study | Patient<br>medical<br>record  | The total<br>percentage<br>of the<br>accuracy of<br>the<br>diagnosis<br>code for<br>the first<br>quarter of<br>inpatient<br>obstetric<br>cases were<br>35 medical<br>records<br>with<br>percentage<br>of 40.23% | Incorrect<br>diagnosis<br>code were<br>medical<br>records with<br>percentage<br>of 59.77%.                        |
| 5. | I Wayan Gede<br>Arimbawa, Ni<br>Putu Linda<br>Yunawati, Ida<br>Ayu Putu Feby<br>Paramita, 2022,<br>Indonesia<br>(Arimbawa et al.,<br>2022) | The<br>Relationship of<br>Completeness of<br>Writing a<br>Diagnosis to the<br>Accuracy of<br>ICD-10 Code<br>Obstetric Cases<br>in the Third<br>Quarter of<br>Inpatients at<br>RSU Premagana | Descriptive                          | Inpatient<br>medical<br>records   | The results<br>of the<br>analysis of<br>90 medical<br>record files<br>were<br>21.1%<br>accurate<br>ICD-10<br>code file  | 78.9% of ICD-<br>10 code files<br>for third<br>quarter<br>obstetric<br>cases<br>inpatients<br>were<br>inaccurate. |
| 6. | Jennatul Illiyien,<br>2021, Indonesia<br>(Illiyien, 2021)  | Relationship of<br>Diagnostic<br>Writing<br>Suitability<br>of a Medical<br>Resume on<br>Accuracy<br>Obgyn Case<br>Coding<br>At Annamedika<br>Hospital<br>Madura                             | Quantitative                         | Medical<br>record file  | There were<br>29 correct<br>diagnostic<br>codes with<br>percentage<br>of 42.6%.   | There<br>were 39<br>incorrect<br>diagnostic<br>codes with<br>percentage<br>of 57.4%.                              |
| 7. | Ressa<br>Oashttamadea<br>SM, 2019,<br>Indonesia<br>(Oashttamadea<br>SM, 2019)  | Analysis of the<br>Coding<br>Accuracy of<br>Obstetric<br>Diagnosis at<br>Naili DBS<br>Padang Hospital   | Cross<br>sectional                   | Medical<br>record<br>documents<br>of obstetric<br>inpatients<br>during the<br>first<br>quarter of<br>2019 | 35 accurate<br>codes<br>(58%)   | 25<br>inaccurate<br>codes (42%)   |

| No | Researcher,<br>Year, Country  | Research Title  | Research<br>design | Research<br>Subject     | Research Result   |  |
|----|---|---|--------------------|-------------------------|---|--|
|    |   |   |                    |                         | Accurate  | Inaccurate   |
| 8. | Warsi Maryati,<br>2016, Indonesia<br>(Maryati, 2016)  | The Relationship Between The Accuracy Of Writing The Diagnosis With The Accuracy Of The Diagnostic Code Of Obstetric Cases At PKU Muhammadiyah Sukoharjo Hospital | Cross sectional    | Medical record document | The number of accurate obstetric case diagnosis codes were 145 (58%)      | Inaccurate diagnosis codes were 105 (42%).                                 |
| 9. | Warsi Maryati,<br>Indriyati Oktaviano,<br>Rahayuningrum,<br>Yohana Sulistyio<br>Wati, 2020,<br>Indonesia<br>(Maryati et al.,<br>2020) | Evaluation of the Quality of the Code for the Diagnosis of Premature Rupture of Membranes in Inpatients   | Cross sectional    | Medical record document | 126 accurate inpatient medical record documents with percentage of 58.60% | 89 inaccurate inpatient medical record documents with percentage of 41.40% |

### Identification of the accuracy and inaccuracy of the diagnosis code of obstetric cases in hospitals

It was discovered that 5 journals have an inaccuracy percentage of obstetric case diagnosis codes as high as more than 50%, implying that cases of inaccuracy in obstetric case diagnosis codes are quite common, with most hospitals having inaccurate diagnosis codes for obstetric cases.

The significance of providing an accurate diagnosis code affect hospital service quality as well as data and information. Currently, the JKN era, which utilizes INA-CBG's tariffs is used to pay for patient services. On the other hand, high rates of health services seem to make the hospital profit from the difference in rates to the detriment of patients and health insurance providers (White & Whaley, 2019). Meanwhile, low rates of health services will undoubtedly harm the hospital (Loren et al., 2020).

### Factor analysis of the inaccuracy of the diagnosis code for obstetric cases at hospital

From the analysis of several journals, it has been determined that 5 of them mention the inaccuracy factor in the diagnosis code of obstetric cases, namely: diagnostic writing is not clear, complete, and specific; writing of written diagnoses that are not in accordance with ICD-10; writing of diagnoses that still use non-medical language and non-medical abbreviations; use of Indonesian terms; and abbreviations that are not in accordance with standard abbreviations.

In accordance with the guidelines established by the Ministry of Health of the Republic of Indonesia in 2006, securing a diagnosis is inevitable, and a doctor's rights and responsibilities cannot be changed (Indonesian Ministry of Health, 2006). As a result, the diagnosis needs to be filled out precisely in accordance with the instructions provided by ICD-10 in the patient's medical record.

Based on the PERMENKES RI Number 269/MENKES/PER/III/2008 concerning medical records, it is stated in article 5 paragraph 1 that every doctor or dentist in carrying out medical practice is obliged to make medical records (Indonesian Ministry of Health, 2008). The contents of paragraph 2 that the medical record as referred to in paragraph (1) must be made immediately and completed after the patient receives the service. The contents of paragraph 3 that the making of medical records as referred to in paragraph (2) is carried out through recording and documenting the results of medical examinations, actions and other services that have been provided to patients. The content of paragraph 4 states that every entry into the medical record must be affixed with the name, time, and signature of a doctor, dentist, or certain health worker who provides health services

directly. Meanwhile, Article 6 states that doctors, dentists, and/or certain health workers are responsible for the records and/or documents made in the medical record. Hence, writing the right diagnosis is the responsibility of the examining doctor.

In addition, based on PERMENKES No. 55/MENKES/PER/III/2013 article 13, in carrying out the work of the medical recorder, it has the authority, which includes to carry out a system of classification and codification of diseases in accordance with medical terminology and carry out evaluations on the completeness of the contents of diagnoses and actions (Indonesian Ministry of Health, 2013). In line with research conducted by Tri Purnama Sari, Tesa Herta Pela (2017) which said the code inaccuracy factor was caused by coding officer which lack of understanding of medical terminology, clinical chemistry, pharmacology.

## CONCLUSION

Based on the results of the analysis, it can be concluded that The percentage of inaccuracy in the diagnosis code of obstetric cases is more than 50% in 5 journals, 50% percentage in 1 journal, while the percentage is less than 50% in 3 journals. Meanwhile, the most common factor causing the inaccuracy of the obstetric case diagnosis code is the man factor, which claimed by 5 journals that highlight less clear, complete and less specific writing.

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