

OPTIMIZING MEDICAL TERMINOLOGY INTERPRETATION AND ICD-10 CODING SKILLS FOR SURGICAL CASES AT RSKB ROPANASURI PADANG

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Abstract

This community service activity focused on improving the understanding of medical terminology and ICD-10 coding accuracy for surgical cases at RSKB Ropanasuri Padang. The main problem identified was the difficulty medical record officers faced in correctly interpreting medical terminology used by doctors, especially in surgical diagnoses. This often led to inaccurate coding, impacting the hospital's data and finances. The solution provided was a comprehensive training session, which included socialization, case studies, and discussions to enhance participants' understanding of medical terminology and improve their ICD-10 coding skills. The results showed significant improvement in participants' ability to interpret diagnoses and apply the correct ICD-10 codes, with pretest scores increasing by 71.43% after the training. This study emphasizes the importance of standardized medical terminology and continuous training for improving diagnostic coding accuracy in healthcare settings. Further training on diverse medical cases is recommended to enhance coding proficiency.

Keywords: Medical Terminology, ICD-10 Coding, Training, Diagnostic Accuracy

INTRODUCTION

Medical records are documents containing information about patient identity, medical history, procedures performed, and results obtained during the treatment process. These records are crucial for ensuring the continuity of medical treatment, hospital administration, and health policy planning at the national level. One key aspect of medical record management is the accurate coding of diagnoses, which must adhere to international standards. Accurate diagnosis coding ensures the validity of data used for compiling health reports and for determining hospital cost claims (Saputro, 2016; Sari, Trisna and Trisna, 2019).

However, many medical record officers still face difficulties in coding diagnoses quickly and accurately. According to research conducted in several hospitals, it was found that approximately 65% of hospitals in Indonesia have not made complete and clear diagnoses according to the ICD-10 standards, and coding is often inaccurate (Oktamianiza, 2013).

Furthermore, other studies have shown that medical record officers who lack sufficient knowledge of medical terminology are at risk of making errors in coding, which can affect the accuracy of health reports and statistics (Rosita and Wiqoyah, 2018; Suhariyono, Priskusanti and Rusdi, 2023).

A study conducted by Khumaira and Wahyuni (2024) found that the rate of inaccuracy in surgical diagnosis coding is still significant, at 26.19%, while accurate coding reached 73.81%. Factors contributing to these inaccuracies include insufficient understanding of benign and malignant pathogenesis in neoplasms, incorrect code determination, and failure to verify additional information in the medical record files. Additionally, discrepancies between the terminology used by doctors and the terminology recorded in ICD-10 contribute to this issue.

Similarly, research conducted at RS PKU Muhammadiyah Yogyakarta found that medical record officers' understanding of medical terminology is directly related to the accuracy of diagnosis coding. This study also highlighted the importance of continuous training to enhance their understanding of international standards like ICD-10 (Saputro, 2016). A similar study at RS Muslimat Malang revealed that inaccuracies in using medical terminology impacted the accuracy of diagnosis coding (Suhariyono, Priskusanti and Rusdi, 2023). To improve the quality of diagnosis coding, the proposed PKM focuses on optimizing the skills of coders through socialization and training. Socialization will introduce materials related to diagnostic terminology written by doctors for surgical cases in 2024, focusing on ensuring that diagnoses align with ICD-10 standards (Putra *et al.*, 2022; Bagus Kuntoadi *et al.*, 2024). The training will also focus on teaching medical record officers how to accurately code diagnoses based on doctors' diagnoses, ensuring correct identification of every diagnosis.

The Minister of Health of the Republic of Indonesia Decree No. HK.01.07/MENKES/312/2020 regarding the Professional Standards of Medical Recorders and Health Information emphasizes that one of the core competencies for medical record officers is the ability to perform clinical classification, disease coding, and other health-related issues, including clinical procedures. This competency involves the ability to use medical terminology correctly when determining clinical classification and disease coding according to ICD (International Classification of Diseases). This competency is essential for supporting effective and efficient healthcare services. Given the lack of similar training at RSKB Ropanasuri Padang, the title of the PKM is "Optimizing Medical Terminology Interpretation and ICD-10 Coding Skills for Surgical Cases at RSKB Ropanasuri Padang".

IMPLEMENTATION METHOD

1. Materials for The PKM

The PKM materials will be based on an analysis of the conformity between medical terminology used by doctors and ICD-10 in the medical records of surgical cases at RSKB Ropanasuri in 2024. The materials will include:

- Detailed explanations of common surgical cases and the corresponding diagnoses written by doctors.
- Selection of the correct ICD-10 codes for these diagnoses.
- Understanding of special notes and specific rules related to those diagnoses.

2. Procedure

- **Preparation Phase:**

Development of the PKM proposal, which will be submitted to RSKB Ropanasuri, with Medical Record Officers as the target audience. Obtaining necessary permits and approvals from the Director of RSKB Ropanasuri.

- **Execution Phase:**

The training will be conducted in August 2025, which will involve socialization, discussion, and training on medical terminology interpretation and ICD-10 coding for selected surgical cases.

- **Mentoring Phase:**

Follow-up mentoring after the training to ensure that the Medical Record Officers can effectively apply the knowledge gained during the training.

3. Data Collection Techniques

- **Interviews:** Conducted with the Medical Record Officers who are responsible for classification and coding tasks to assess their current understanding and challenges in interpreting medical terminology and applying ICD-10 codes.
- **Observation:** Direct observation of the process by which Medical Record Officers interpret medical terminology and perform classification and coding of surgical cases in the medical records at RSKB Ropanasuri.

4. Evaluation Techniques

The evaluation will be based on the comparison of pre-test and post-test results. This will help to determine whether the training objectives have been met and to what extent the participant's knowledge has improved regarding medical terminology and ICD-10 coding.

RESULTS AND DISCUSSION

Results of PKM Implementation

The PKM was carried out with 12 participants, consisting of medical record staff and case-mix personnel. The training focused on understanding medical terminology and correctly applying ICD-10 coding for surgical cases. Participants showed high enthusiasm throughout the training, actively engaging in discussions and case studies. After the training, all participants reported an increased ability to interpret medical diagnoses and apply the appropriate ICD-10 codes, particularly for challenging cases. However, some participants still struggled with understanding medical terminology related to surgery and anatomy, which was a challenge even after the training.

Pretest and Posttest Results

The pretest and posttest, administered using the Kahoot platform, revealed a significant improvement in participant's understanding. The average pretest score was 35, while the average posttest score increased to 60, showing a 71.43% improvement. This result indicates that the training was effective in enhancing participant's knowledge and skills in medical terminology interpretation and ICD-10 coding.

Changes in Coding Skills

While the procedure for ICD-10 coding remained unchanged, the training emphasized the importance of understanding medical terminology before selecting the correct code. Participants were encouraged to not just rely on what was written in the medical records, but to first ensure they understood the terminology to accurately apply the corresponding ICD-10 code. This approach led to improved accuracy in coding, particularly for more complex or "tricky" cases. Participants became more meticulous in their coding, especially in identifying the correct codes for cases that were previously challenging.

Training on Surgical Case Studies

The training covered several important types of surgical cases, which required participants to deeply understand both the terminology used by doctors and the ICD-10 classification:

- **Neoplasm Cases:** For neoplasm cases, the medical diagnoses often did not clarify whether the neoplasm was benign or malignant. However, ICD-10 classifies neoplasms into several categories: benign, malignant, in situ, uncertain/unknown, and unspecified. Therefore, to determine the correct code, it was essential to first obtain pathology results to properly classify the neoplasm.
- **Cyst with Infection:** Doctors often write "infected cyst" as the diagnosis, but ICD-10 does not have a combination code for cysts and infections. In such cases, participants were taught to apply two separate codes: one for the cyst and one for the infection.
- **Anatomy Terminology:** In surgical cases, understanding anatomy is crucial because the anatomical terms used by doctors are often not the same as those in ICD-10, even though they refer to the same structures. This discrepancy requires careful interpretation to ensure the correct anatomical terminology is used for coding.

- **Impact of Incorrect Terminology Interpretation:** The training emphasized that errors in interpreting medical terminology can lead to incorrect ICD-10 codes, which could result in significant financial losses for the hospital due to inaccurate billing and reporting.

Comparison with Previous Studies

The results of this PKM activity are consistent with previous research, including Heltiani, Manalu and Anggita (2022) study on the relationship between the accuracy of medical terminology and the precision of ICD-10 coding. Heltiani found that accurate medical terminology directly contributed to accurate coding, whereas errors in terminology led to misclassification of diagnosis codes. Similarly, Agustine and Pratiwi (2017) examined the correlation between the correctness of medical terminology and the accuracy of diagnosis coding in outpatient services at Puskesmas Bambanglipuro Bantul. His study revealed that inaccurate medical terminology increased the likelihood of coding errors by 1.7 times compared to accurate terminology. These findings underscore the critical role of precise medical terminology in ensuring correct diagnostic coding and minimizing potential errors that could impact both health data integrity and hospital finances

Evaluation and Recommendations

Participants evaluated the training as highly beneficial and relevant to their roles. They expressed the desire for continued support and mentoring post-training. They recommended that future training sessions cover more diverse and complex cases beyond surgical diagnoses, including "tricky codes" in other medical fields. This would help broaden their knowledge and improve their coding accuracy across a wider range of cases.



Figure 1. PKM team and participants from RSKB Ropanasuri Padang

Source : RSKB Ropanasuri Padang



Figure 2. Training and socialization session by the speaker, dr. NF Khumaira, M.Kes
 Source : Photo taken by Iris Team



Figure 3. Q&A session with training participants
 Source : Photo taken by Iris Team



Figure 4. Awarding the prize to the participant with the highest pretest and posttest scores

Source : Photo taken by Iris Team

CONCLUSION

The PKM training on medical terminology interpretation and ICD-10 coding for surgical cases at RSKB Ropanasuri Padang successfully enhanced the participants' understanding and skills. The significant improvement in pretest and posttest scores demonstrated the effectiveness of the training. Despite challenges with medical terminology, particularly abbreviations and anatomical terms, the participants showed increased accuracy in coding, particularly for complex cases. The findings support the importance of continuous training and standardization in medical terminology for improving diagnostic coding accuracy. Further training on diverse and challenging cases is recommended to ensure ongoing improvements in coding skills.

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