The Translation Process of Pharmaceutical Care Network Europe v9.00 to Bahasa Indonesia: An Instrument to Detect Drug-Related Problem

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Abstract

Background: Drug-related problems (DRPs) remain a major health challenge in tertiary health services such as hospitals in Indonesia. These problems are detected and solved using classification systems such as Pharmaceutical Care Network Europe (PCNE). Therefore, this study aims to obtain a valid and reliable Bahasa Indonesia version of the PCNE.

Methods: A draft of the Bahasa Indonesia version of the PCNE v9.00 was discussed by four experts from May to August 2020 using the Delphi method. Furthermore, the instrument was assessed for its readability, clarity and comprehensiveness by 46 hospital pharmacists throughout Indonesia. In October 2020, two pharmacists from Haji General Hospital, Makassar, Indonesia carried out the inter-rater agreement to assess 20 cases where the proportion of coding matches between both raters were observed.

Results: The instrument was found to be valid after passing the face and content validity, and the Scale Content Validity Index (S-CVI) value for each PCNE domain was 0.91, 0.89, 0.93, 0.97 and 0.93, respectively. Moreover, there was a fair agreement between the two raters that ranged between 40%–90%. Also, kappa statistics showed a substantial agreement on the ‘Problems’ and ‘Causes’ domains.

Conclusion: The Bahasa Indonesia version of the PCNE v9.00 instrument passed face and content validity as well as inter-agreement to be used in hospital settings.

Keywords: drug-related problem, Pharmaceutical Care Network Europe, reliability, translation, validity

Introduction

Drug-related problems (DRP) are events or circumstances involving drug therapy that occur or potentially interfere with the achievement of desired health outcomes (1). Some of the factors that contribute to the emergence of DRP in patients include inappropriate prescription, ineffective treatment, underdose, non-compliance, etc (2). In Indonesia, DRP occurred in several chronic diseases such as diabetes (3), kidney (4) and heart failure (5). Therefore, there is an urgent need for understanding the importance of the pharmacist’s role in identifying, solving and reducing the incidence of DRP in patients (5).

Moreover, the documentation and classification of DRP can help pharmacists to identify and resolve DRP in a patient. Several classification systems, such as APS-Doc, Cipolle,
The study began with a forward translation of PCNE draft version 9.00 (English version) into Bahasa Indonesia by two independent sworn translators and the results were separately discussed. Furthermore, the translations were combined by paying attention to the excellent choice of words and pharmaceutical terms.

The instrument was again re-translated from Bahasa Indonesia to English by other translators. Similarly, the results were separately discussed.

The combined draft was then given to four experts, including hospital pharmacists and academicians with master and doctoral qualifications. This assisted in the critical review of the translation results and suggestions for improvements to make the instrument easier to use. The process to reach consensus among experts was carried out using the Delphi method (15), which ensures that the expert panels do not know each other and report only to the researcher.

A draft of the Bahasa Indonesia version of the PCNE was sent to the expert panels in parallel and they were given time to provide a critical review of the translation. All the critical reviews from each expert panel were then combined and the instrument was refined. The draft was then returned to each expert panel and the process was repeated until they reached a consensus.

This process involved a minimum of 20 clinical pharmacists who work in the hospital as respondents. They were asked to rate the criteria of readability, clarity and comprehensiveness of the instrument using a 5-point Likert scale. Furthermore, the Item Content Validity Index (I-CVI) and the Scale Content Validity Index (S-CVI) were calculated. The I-CVI compares the number of respondents that gave ratings of 3 and above with the total number of respondents. In contrast, the S-CVI is the average of the I-CVI values (16). The following formulae were used to calculate the I-CVI and S-CVI:

\[
I-CVI = \frac{N_{3+}}{N}
\]

\[
S-CVI = \frac{1}{k} \sum_{i=1}^{k} I-CVI_i
\]
Inter-Rater Agreement

The inter-rater agreement involved two pharmacists from the Haji Regional General Hospital, Makassar, who conducted a DRP assessment on 20 selected patient cases using validated instruments. These cases were taken from patient medical records using consecutive sampling methods, which met the following eligibility criteria:

i) Has undergone inpatient care at the hospital (recovered or died)
ii) Patients aged ≥ 18 years old
iii) Medical records are well documented

Before the test, the two raters were trained separately using five practice cases to familiarise them with the instrument. They were asked to provide a code in the 'Problem' and 'Cause' domains following the given patient’s DRP case using the Bahasa Indonesia version of PCNE. The coding consistency and chance agreement between the two raters were determined by calculating percentage agreement and kappa statistics. The percentage agreement is the ratio of the number of cases in which both raters gave the same code to the total number of cases. The formula below is used to calculate percentage agreement (18):

\[
\text{Percentage agreement} = \frac{\text{Number of concordant cases}}{\text{Total number of cases}} \times 100\%
\]

The kappa statistics were carried out using IBM SPSS® version 24 software and its interpretation is showed in Table 1 (18).

Results

The PCNE classification version 9.00 was translated into Bahasa Indonesia by two sworn translators that did not meet. Furthermore, a reconciliation process was conducted with each translator regarding the translation results, which were then combined. The draft of the translated instrument as shown in Appendix 1 were submitted to the experts for a critical review. After two sessions of discussion with the expert panels, the following changes were incorporated:

i) Addition of the conjunctions in the Penerimaan Intervensi and Status MTO domain. For example, the sentence *Intervensi tidak diterima: tidak layak* in domain A2.1 was changed to *Intervensi tidak diterima karena tidak dapat dilakukan*.

ii) Changes were made in the word structure of the subdomain to make the sentences easier to understand for the users. For example, the meaning of sentences, such as *Bentuk obat yang tidak sesuai (untuk pasien ini)* in domain C2.1 was changed to *Bentuk sediaan obat yang tidak sesuai dengan pasien*.

iii) Sentences were simplified to enable a more concise reading. For example, the sentence *Pada kasus tertentu ada efek samping obat merugikan yang (mungkin) terjadi* in domain P2.1 was changed to *Kejadian obat yang merugikan (mungkin) terjadi*.

A total of 46 hospital pharmacists (Table 2) were recruited from 17 provinces throughout Indonesia (Figure 1) in content validity. The majority of respondents filled 3 and 4 on a

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**Table 1.** Interpretation of kappa values

| Kappa values | Interpretation       |
|--------------|----------------------|
| < 0.00       | Poor                 |
| 0.00–0.20    | Slight               |
| 0.21–0.40    | Fair                 |
| 0.41–0.60    | Moderate             |
| 0.61–0.80    | Substantial          |
| 0.81–1.00    | Almost perfect       |

Note: Source: (10)
However, they are not familiar with PCNE instruments, therefore, they were trained using five practice cases.

After assessing the DRP cases of 20 patients, the percentage agreement was 90% higher in the ‘problems’ domain for both the primary and secondary domains, respectively. While in the ‘causes’ domain, it was much lower by 60% and 40% on the primary and secondary domains, respectively. Furthermore, kappa statistics were performed to calculate the chance agreement of two raters when identifying the DRP on a case using PCNE. The result showed a significant agreement between the two raters on ‘problems’ domain ($\kappa = 0.615$ [95% CI: 0.149, 1.081]; $P = 0.003$) and ‘Causes’ domain ($\kappa = 0.612$ [95% CI: 0.298, 0.910]; $P = 0.003$).

### Discussion

This study is the first to translate, validate and determine the inter-rater agreement of the translated PCNE into Bahasa Indonesia. After the forward (English-Bahasa Indonesia) and backward (Bahasa Indonesia-English) translations, some differences were noticed. These include the changes in word structure, especially in the ‘intervention acceptance’ domain, which is different from the original version because that of Bahasa Indonesia uses conjunctions to make the domain easier for users to understand. According to the suggestions from experts and respondents during the validation process, the changes in the number of word

| Variables        | $n$ (%) | Total (%) |
|------------------|---------|-----------|
| Gender           |         |           |
| Men              | 17 (37.0)| 46 (100) |
| Women            | 29 (63.0)|           |
| Education        |         |           |
| Profession       | 38 (82.6)| 46 (100) |
| Master           | 8 (17.4) |           |
| Work experience  |         |           |
| 0–5 years        | 26 (56.5)|           |
| 5–10 years       | 9 (19.5) | 46 (100)  |
| > 10 years       | 11 (24.0)|           |

Table 2. Demographics of respondents who participates in content validity

![Figure 1. Distribution of the content validity respondents throughout Indonesia](image-url)
The kappa statistics showed a high degree of agreement on both ‘problem’ and ‘causes’ domains. The value was higher compared to others such as DOCUMENT (0.53 versus 0.615) (19) and GSASA V2 (0.52 versus 0.615) (20), lower than APS-Doc (0.68 versus 0.615) (21) and similar with the classification developed by the Pharmaceutical Society of Singapore (ILTC DRP Classification System) (0.614 versus 0.615) (8). Furthermore, it is believed that the low value of kappa in this study is because the raters are not too familiar with the instrument. Therefore, using the instrument frequently may increase the value of kappa. This is influenced by the raters’ level of knowledge and experience.

This study has certain limitations. First, the instrument does not assess the inter-rater agreement on the ‘planned intervention,’ ‘intervention acceptance,’ and ‘status of DRP’ domains because only secondary data were used. Second, the inter-rater agreement is still limited to only two assessors due to the unfamiliarity of this instrument in daily pharmacy practices in Indonesian hospitals. Furthermore, construct validity, such as convergence to see the instrument’s reliability under different conditions (22), was not performed. Therefore, further studies are suggested to focus mainly on reliability testing by involving more pharmacists and performing the construct validity.

Table 3. I-CVI and S-CVI value on validity content

| Aspect                                                                 | I-CVI\(^a\) on the domain (\(n = 46\)) | S-CVI\(^b\) |
|------------------------------------------------------------------------|----------------------------------------|-------------|
| Problems                                                               | 0.96                                   | 0.90        |
| Causes                                                                 | 0.93                                   | 0.89        |
| Planned intervention                                                   | 0.96                                   | 0.89        |
| Intervention acceptance                                                | 0.96                                   | 0.93        |
| Status of DRP                                                            | 0.96                                   | 0.97        |

Notes: \(^a\)I-CVI = Item Content Validity Index; \(^b\)S-CVI = Scale Content Validity Index

There is also a high consistency in the ‘problems’ domain of the instrument on an inter-rater agreement study. However, the ‘causes’ domain has low consistency, which differs from the results of Koubaity et al. in 2019 and Schindler et al. in 2020 (12–13). Furthermore, these two studies yielded a percentage agreement between 59%–100% and 57.4%–77.3%, respectively. Several factors resulted in the low consistency between the two raters of the ‘causes’ domain. First, this study used a small sample of pharmacists compared to Schindler et al. (13) which considered a total of 32 pharmacists. Second, the variety of codes and the ability to code the case summaries led to different perspectives between the two raters, causing the domain to have low consistency (12). Finally, the raters admitted that it was quite challenging to choose the correct code for a patient’s case, especially in the ‘causes’ domain. Moreover, the two previous studies reported that the raters had difficulty determining the correct code for a given case (13).

The structure compared to the original version before the translation were influenced by the changes in the word structure in Bahasa Indonesia. However, the translation does not differ significantly in the interpretation of the main point of the sentence.

Furthermore, the I-CVI and S-CVI values have a high content validity level because they passed Shrotryia and Dhanda’s content validity levels of ≥ 0.78 and 0.8, respectively. However, this value is different from the value reported by Koubaity et al. (12) on the validation of PCNE French. Also, the values of I-CVI and S-CVI were in the range of 0.9–1.0 versus 0.85–0.97 in previous studies.

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Conclusion

The PCNE v9.00, Bahasa Indonesia version has passed content validity and inter-agreement for use in pharmacy practice in both hospitals and academic settings. Further study is suggested to focus mainly on inter-rater reliability tests using more pharmacists to measure the validity of the instruments in various conditions in hospital settings.

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Ethics of Study

This study was ethically approved by the Health Research Ethics Committee of the Faculty of Medicine, University of Indonesia [KET-516/UN2.F1/ETIK/PPM.00.02.2020] and it was used to collect data for the inter-rater agreement study. To protect the patient’s data and privacy, anonymity was maintained while collecting data and presenting them to raters during the inter-rater agreement study.

Conflict of Interest

None.

Funds

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Authors’ Contributors

Conception and design: MAS, RA, SS
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Drafting of the article: MAS
Critical revision of the article for important intellectual content: RA, SS
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**Appendix 1. Bahasa Indonesia version of Pharmaceutical Care Network Europe (PCNE) (after translation)**

### Pharmaceutical Care Network Europe v9.00 versi Indonesia

| Kode | Domain Primer | Domain Sekunder |
|------|---------------|-----------------|
| P1   | Efektivitas pengobatan | P1.1 Tidak ada efek dari pengobatan  
P1.2 Pengaruh terapi obat tidak optimal  
P1.3 Gejala atau indikasi yang tidak diobati |
|      | Terdapat (potensial) masalah dengan (kurangnya) efek farmakoterapi |
| P2   | Keamanan pengobatan | P2.1 Pada kasus tertentu ada efek samping obat merugikan yang (mungkin) terjadi |
|      | Pasien menderita, atau bisa menderita, akibat suatu kejadian obat yang merugikan |
| P3   | Lainnya | P3.1 Masalah dengan efektivitas biaya pengobatan  
P3.2 Pengobatan yang tidak perlu  
P3.3 Masalah / keluhan yang tidak jelas. Diperlukan klarifikasi lebih lanjut (harap gunakan hanya sebagai alternatif) |
| C1   | Pemilihan obat | C1.1 Obat yang tidak sesuai dengan pedoman / formularium  
P1.2 Obat yang tidak sesuai (sesuai pedoman tetapi dinyatakan bertentangan)  
P1.3 Tidak ada indikasi untuk obat  
P1.4 Kombinasi obat-obatan yang tidak tepat, atau obat-obatan dan herbal, atau obat-obatan dan suplemen makanan  
P1.5 Duplicasi yang tidak tepat dari kelompok terapeutik atau bahan aktif  
P1.6 Pengobatan yang tidak ada atau tidak lengkap terlepas dari indikasi yang ada  
P1.7 Terlalu banyak obat yang diresepkan untuk indikasi |
|      | Penyebab DRP terkait dengan pemilihan obat |
| C2   | Bentuk obat | C2.1 Bentuk obat yang tidak sesuai (untuk pasien ini) |
|      | Penyebab DRP dapat terkait dengan pemilihan bentuk obat |
| C3   | Pemilihan dosis | C3.1 Dosis obat terlalu rendah  
P3.2 Dosis obat terlalu tinggi  
P3.3 Regimen dosis tidak cukup sering  
P3.4 Regimen dosis terlalu sering  
P3.5 Instruksi waktu dosis salah, tidak jelas atau hilang |
|      | Penyebab DRP dapat terkait dengan pemilihan jadwal dosis |
| C4   | Durasi pengobatan | C4.1 Durasi pengobatan terlalu singkat  
P4.2 Durasi pengobatan terlalu lama |
|      | Penyebab DRP dapat terkait dengan durasi pengobatan |
| C5   | Penyiapan obat | C5.1 Obat yang diresepkan tidak tersedia  
P5.2 Informasi yang diperlukan tidak tersedia  
P5.3 Obat yang salah, kekuatan sediaan atau dosis yang disarankan (OTC)  
P5.4 Obat atau kekuatan sediaan yang salah disiapkan |
|      | Penyebab DRP dapat terkait dengan logistik proses peresepan dan penyiapan obat |
| C6   | Proses penggunaan obat | C6.1 Waktu pemberian atau interval pemberian dosis yang tidak tepat  
P6.2 Obat yang diberikan kurang  
P6.3 Obat berlebihan  
P6.4 Obat tidak diberikan sama sekali  
P6.5 Obat yang diberikan salah  
P6.6 Obat diberikan melalui rute yang salah |
|      | Penyebab DRP dapat terkait dengan cara pasien mendapatkan obat yang diberikan oleh tenaga kesehatan atau pengasuh, terlepas dari instruksi yang tepat (pada label) |
| Kode | Domain Primer | Domain Sekunder |
|------|---------------|-----------------|
| C7   | Terkait pasien | C7.1 Pasien menggunakan / mengambil obat yang lebih sedikit dari yang diresepkan atau tidak menggunakan obat sama sekali  |
|      |               | C7.2 Pasien menggunakan / mengambil lebih banyak obat daripada yang diresepkan  |
|      |               | C7.3 Pasien menyalahgunakan obat (penggunaan berlebihan yang tidak diatur)  |
|      |               | C7.4 Pasien menggunakan obat yang tidak perlu  |
|      |               | C7.5 Pasien memakai makanan yang berinteraksi  |
|      |               | C7.6 Pasien menyimpan obat secara tidak tepat  |
|      |               | C7.7 Waktu atau interval pemberian dosis yang tidak tepat  |
|      |               | C7.8 Pasien memberkan / menggunakan obat dengan cara yang salah  |
|      |               | C7.9 Pasien tidak dapat menggunakan obat / bentuk sesuai petunjuk  |
|      |               | C7.10 Pasien tidak dapat memahami instruksi dengan benar  |
|      | Terkait transfer pasien | C8.1 Tidak ada rekonsiliasi obat saat transfer pasien  |
|      |               | C8.2 Tidak ada daftar obat terbaru yang tersedia.  |
|      |               | C8.3 Informasi pengeluaran / transfer tentang obat-obatan tidak lengkap atau hilang  |
|      |               | C8.4 Informasi klinis yang tidak memadai tentang pasien.  |
|      |               | C8.5 Pasien belum menerima obat yang diperlukan saat pemulangan  |
|      | C9 Lainnya | C9.1 Tidak terdapat hasil pemantauan yang sesuai (termasuk TDM)  |
|      |               | C9.2 Penyebab lain; sebutkan  |
|      |               | C9.3 Tidak ada penyebab yang jelas  |
| Io   | Tidak ada intervensi | Io.1 Tanpa Intervensi  |
| I1   | Pada tingkat penulis resep | I1.1 Penulis resep hanya menginformasikan  |
|      |               | I1.2 Penulis resep meminta informasi  |
|      |               | I1.3 Intervensi diusulkan kepada penulis resep  |
|      |               | I1.4 Intervensi dibahas dengan penulis resep  |
| I2   | Pada tingkat pasien | I2.1 Konseling (obat) pasien  |
|      |               | I2.2 Informasi yang tersedia (hanya) tertulis  |
|      |               | I2.3 Pasien telah dirujuk ke dokter tersebut  |
|      |               | I2.4 Disampaikan kepada anggota keluarga / pengasuh  |
| I3   | Pada tingkat obat | I3.1 Obat diubah menjadi ...  |
|      |               | I3.2 Dosis diubah menjadi ...  |
|      |               | I3.3 Formulasi diubah menjadi ...  |
|      |               | I3.4 Petunjuk penggunaan diubah menjadi...  |
|      |               | I3.5 Obat ditunda atau dihentikan  |
|      |               | I3.6 Obat dimulai  |
| I4   | Lainnya | I4.1 Intervensi lainnya (sebutkan)  |
|      |               | I4.2 Efek samping dilaporkan ke pihak berwenang  |
| A1   | Intervensi diterima | A1.1 Intervensi diterima dan diimplementasikan sepenuhnya  |
|      |               | A1.2 Intervensi diterima, dilaksanakan sebagian  |
|      |               | A1.3 Intervensi diterima tetapi tidak diterapkan  |
|      |               | A1.4 Intervensi diterima, implementasi tidak diketahui  |
| A2   | Intervensi tidak diterima | A2.1 Intervensi tidak diterima: tidak layak  |
|      |               | A2.2 Intervensi tidak diterima: tidak ada kesepakatan  |
|      |               | A2.3 Intervensi tidak diterima: alasan lain (sebutkan)  |
|      |               | A2.4 Intervensi tidak diterima: alasan tidak diketahui  |
| A3   | Lainnya | A3.1 Intervensi diusulkan, penerimaan tidak diketahui  |
|      |               | A3.2 Intervensi tidak diusulkan  |
### Kode Domain Primer | Domain Sekunder
---|---
O0 | Tidak diketahui | O0.1 | Status masalah tidak diketahui
O1 | Terselesaikan | O1.1 | Masalah terselesaikan sepenuhnya
O2 | Sebagian diselesaikan | O2.1 | Masalah diselesaikan sebagian
O3 | Tidak terselesaikan | O3.1 | Masalah tidak terselesaikan, kurangnya kerjasama dengan pasien
|  |  | O3.2 | Masalah tidak terselesaikan, kurangnya kerja sama dengan penulis resep
|  |  | O3.3 | Masalah tidak terselesaikan, intervensi tidak efektif
|  |  | O3.4 | Tidak perlu atau kemungkinan untuk menyelesaikan masalah

### Status DRP
- **O0**: Tidak diketahui
- **O1**: Terselesaikan
- **O2**: Sebagian diselesaikan
- **O3**: Tidak terselesaikan

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### appendix 2. Bahasa Indonesia version of Pharmaceutical Care Network Europe (PCNE) (after validity test)

**Pharmaceutical Care Network Europe v9.00 versi Indonesia**

| Kode | Domain Primer | Domain Sekunder |
|------|---------------|-----------------|
| P1   | Efektivitas pengobatan | P1.1 | Tidak ada efek dari terapi obat |
|      | Terdapat masalah yang berpotensi mengurangi efek farmakoterapi | P1.2 | Efek terapi obat tidak optimal |
|      |  | P1.3 | Gejala atau indikasi yang tidak diobati |
| P2   | Keamanan pengobatan | P2.1 | Kejadian obat yang merugikan (mungkin) terjadi |
|      | Pasien mengalami, atau dapat mengalami efek obat yang merugikan |
| P3   | Lainnya | P3.1 | Masalah pengobatan yang berkaitan dengan efektivitas biaya |
|      |  | P3.2 | Pengobatan yang tidak diperlukan |
|      |  | P3.3 | Masalah terkait obat yang tidak jelas, sehingga memerlukan klarifikasi lebih lanjut (harap gunakan hanya sebagai alternatif) |
| C1   | Pemilihan obat | C1.1 | Obat tidak sesuai dengan pedoman / formularium |
|      | Masalah Terkait Obat (MTO) terjadi karena pemilihan obat | C1.2 | Obat sesuai pedoman, namun terdapat kontraindikasi |
|      |  | C1.3 | Tidak ada indikasi untuk obat |
|      |  | C1.4 | Kombinasi tidak tepat misalnya obat-obat, obat-herbal, atau obat-suplemen |
|      |  | C1.5 | Duplicasi dari kelompok terapeutik atau bahan aktif yang tidak tepat |
|      |  | C1.6 | Pengobatan tidak diberikan atau tidak lengkap walaupun terdapat indikasi |
|      |  | C1.7 | Terlalu banyak obat yang diresepkan untuk satu indikasi |
| C2   | Bentuk obat | C2.1 | Bentuk sediaan obat yang tidak sesuai dengan pasien |
|      | Masalah Terkait Obat (MTO) terjadi karena pemilihan bentuk sediaan obat |
| C3   | Pemilihan dosis | C3.1 | Dosis obat terlalu rendah |
|      | Masalah Terkait Obat (MTO) terjadi karena pemilihan dosis obat | C3.2 | Dosis obat terlalu tinggi |
|      |  | C3.3 | Regimen dosis kurang |
|      |  | C3.4 | Regimen dosis terlalu sering |
|      |  | C3.5 | Instruksi waktu pemberian dosis salah, tidak jelas atau tidak ada |
| C4   | Durasi pengobatan | C4.1 | Durasi pengobatan terlalu singkat |
|      | Masalah Terkait Obat (MTO) terjadi karena durasi pengobatan | C4.2 | Durasi pengobatan terlalu lama |

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**Pharmaceutical Care Network Europe v9.00 versi Indonesia**

### Kode Domain Primer | Domain Sekunder
---|---
C1.1 | Obat tidak sesuai dengan pedoman / formularium
C1.2 | Obat sesuai pedoman, namun terdapat kontraindikasi
C1.3 | Tidak ada indikasi untuk obat
C1.4 | Kombinasi tidak tepat misalnya obat-obat, obat-herbal, atau obat-suplemen
C1.5 | Duplicasi dari kelompok terapeutik atau bahan aktif yang tidak tepat
C1.6 | Pengobatan tidak diberikan atau tidak lengkap walaupun terdapat indikasi
C1.7 | Terlalu banyak obat yang diresepkan untuk satu indikasi
C2.1 | Bentuk sediaan obat yang tidak sesuai dengan pasien
C3.1 | Dosis obat terlalu rendah
C3.2 | Dosis obat terlalu tinggi
C3.3 | Regimen dosis kurang
C3.4 | Regimen dosis terlalu sering
C3.5 | Instruksi waktu pemberian dosis salah, tidak jelas atau tidak ada
C4.1 | Durasi pengobatan terlalu singkat
C4.2 | Durasi pengobatan terlalu lama
| Kode | Domain Primer | Domain Sekunder |
|------|---------------|-----------------|
| C5   | Penyiapan obat | C5.1 Obat yang diresepkan tidak tersedia |
|      | Masalah Terkait Obat (MTO) | C5.2 Informasi yang diperlukan tidak tersedia |
|      | terjadi karena proses ketersediaan obat yang diresepkan dan proses penyiapan obat | C5.3 Salah obat, kekuatan sediaan atau regimen dosis yang disarankan (khusus OTC/obat bebas) |
|      | | C5.4 Salah penyiapan obat atau kekuatan dosis |
| C6   | Proses penggunaan obat | C6.1 Waktu pemberian obat atau interval dosis tidak tepat |
|      | Masalah Terkait Obat (MTO) | C6.2 Obat yang diberikan kurang |
|      | terjadi karena penggunaan obat pasien terlepas dari instruksi yang tepat (pada label) oleh tenaga medis atau perawat | C6.3 Obat yang diberikan berlebih |
|      | | C6.4 Obat tidak diberikan sama sekali |
|      | | C6.5 Obat yang diberikan salah |
|      | | C6.6 Obat diberikan melalui rute yang salah |
| C7   | Terkait pasien | C7.1 Pasien menggunakan obat lebih sedikit dari yang diresepkan atau tidak menggunakan obat sama sekali |
|      | Masalah Terkait Obat (MTO) | C7.2 Pasien menggunakan obat lebih banyak dari yang diresepkan |
|      | terjadi karena pasien dan perilakunya (sengaja atau tidak sengaja) | C7.3 Pasien menyalahgunakan obat (tidak sesuai anjuran) |
|      | | C7.4 Pasien menggunakan obat yang tidak perlu |
|      | | C7.5 Pasien mengonsumsi makanan yang menyebabkan interaksi obat |
|      | | C7.6 Pasien menyimpan obat secara tidak tepat |
|      | | C7.7 Waktu atau interval pemberian dosis yang tidak tepat |
|      | | C7.8 Pasien menggunakan obat dengan cara yang salah |
|      | | C7.9 Pasien tidak dapat menggunakan obat / bentuk sediaan sesuai petunjuk |
|      | | C7.10 Pasien tidak dapat memahami instruksi dengan benar |
| C8   | Terkait transfer pasien | C8.1 Tidak ada rekonsiliasi obat saat pasien dipindahkan |
|      | Masalah Terkait Obat (MTO) | C8.2 Tidak ada daftar obat terbaru yang tersedia |
|      | terkait dengan perpindahan pasien antara perawatan primer, sekunder, dan tersier, atau dalam satu ruang perawatan | C8.3 Informasi tentang obat-obatan pada saat pemulangan/transfer tidak lengkap atau hilang |
|      | | C8.4 Informasi klinis tentang pasien tidak memadai |
|      | | C8.5 Pasien belum menerima obat yang diperlukan saat pemulangan |
| C9   | Lainnya | C9.1 Tidak terdapat hasil pemantauan terapi obat yang sesuai (termasuk TDM/Therapeutic Drug Monitoring) |
|      | | C9.2 Penyebab lain; sebutkan....... |
|      | | C9.3 Tidak ada penyebab yang jelas |

| Rencana Intervensi | Tidak ada intervensi | Intervensi |
|-------------------|----------------------|-------------|
| I0                | I0.1 Tanpa Intervensi |             |
| I1                | I1.1 Dokter penulis resep hanya diinformasikan |             |
|                   | I1.2 Dokter penulis resep meminta informasi |             |
|                   | I1.3 Intervensi diusulkan kepada dokter penulis resep |             |
|                   | I1.4 Intervensi dibahas dengan dokter penulis resep |             |
| I2                | I2.1 Konferring kepada pasien terkait obat |             |
|                   | I2.2 Tersedia informasi tertulis |             |
|                   | I2.3 Pasien disarankan kembali ke dokter |             |
|                   | I2.4 Menyampaikan kepada anggota keluarga / pengasuh |             |
| I3                | I3.1 Obat diubah menjadi ... |             |
|                   | I3.2 Dosis diubah menjadi ... |             |
|                   | I3.3 Formulasi diubah menjadi ... |             |
|                   | I3.4 Petunjuk penggunaan diubah menjadi... |             |
|                   | I3.5 Obat ditunda atau dihentikan |             |
|                   | I3.6 Obat dimulai |             |
| I4                | I4.1 Intervensi lainnya (sebutkan) |             |
|                   | I4.2 Efek samping dilaporkan ke pihak berwenang |             |
| Kode | Domain Primer       | Domain Sekunder                                                                 |
|------|---------------------|---------------------------------------------------------------------------------|
| A1   | Intervensi diterima| A1.1 Intervensi diterima dan diimplementasikan sepenuhnya                      |
|      |                     | A1.2 Intervensi diterima namun hanya diimplementasikan sebagian                 |
|      |                     | A1.3 Intervensi diterima namun tidak diimplementasikan                          |
|      |                     | A1.4 Intervensi diterima namun implementasi tidak diketahui                     |
| A2   | Intervensi tidak diterima | A2.1 Intervensi tidak diterima karena tidak dapat dilakukan                    |
|      |                     | A2.2 Intervensi tidak diterima karena tidak disetujui                           |
|      |                     | A2.3 Intervensi tidak diterima karena alasan lain (sebutkan)                   |
|      |                     | A2.4 Intervensi tidak diterima karena alasan tidak diketahui                    |
| A3   | Lainnya             | A3.1 Intervensi diusulkan namun penerimaan tidak diketahui                      |
|      |                     | A3.2 Intervensi tidak diusulkan                                                 |
| O0   | Tidak diketahui     | O0.1 Status masalah tidak diketahui                                            |
| O1   | Terselesaikan       | O1.1 Masalah terselesaikan sepenuhnya                                           |
| O2   | Sebagian diselesaikan | O2.1 Masalah diselesaikan sebagian                                               |
| O3   | Tidak terselesaikan | O3.1 Masalah tidak terselesaikan karena kurangnya kerjasama dengan pasien       |
|      |                     | O3.2 Masalah tidak terselesaikan karena kurangnya kerja sama dengan penulis resep|
|      |                     | O3.3 Masalah tidak terselesaikan karena intervensi tidak efektif                |
|      |                     | O3.4 Tidak perlu atau tidak memungkinkan untuk menyelesaikan masalah             |