Analysis of the Antimicrobial Stewardship Program Policy on Inpatients Antibiotics Use

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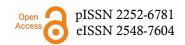
Article Info

Abstract

The Exploration of Antimicrobial Consumption to Identify Targets for Quality Improvement in Indonesian Hospitals showed that 97% of the use of empirical antibiotics was 81% empiric therapy, 12% medical prophylaxis, 4% surgical prophylaxis, and 16% without clear indications. The most common diagnoses are typhoid, pneumonia, and dengue fever. The Antimicrobial Stewardship Programme (ASP) Team supports the national program to reduce the use of irrational antibiotics. This study aims to analyse the ASP policy implementation on the use of antibiotics at the Royal Taruma Hospital. A secondary data on the use of Defined Daily Dose (DDD)/100 patient-days for the quarterly months of February, May, and August 2020. The 14 key informants' perceptions, opinions, and oughts are the primary data of qualitative research on the use of antibiotics during the ASP policy implementation. The three most antibiotics used were Ceftriaxone (64.7%), Levofloxacin (20.1%), and Meropenem (6.9%), which belong to the broad-spectrum antibiotic class. The total use of antibiotics was 1206.59 DDD/100 patient-days. The implementation of ASP policies has not been running optimally. It is necessary to formulate a pattern of germs and antimicrobial resistance, not only in the intensive room but also in the care ward to achieve ASP quality indicators.

INTRODUCTION

WHO states that the criteria for rational drug use are as follows in which according to the patient's disease indication; based on anamnesis of the condition and the results of an accurate physical examination of the patient; dosage calculation based on age, body weight, and disease course; the right way of giving; timely interval of administration; exact duration of administration; for certain cases provided within a certain period; the quality of the drug is guaranteed and effective; according to the patient's condition and does not expire; available and affordable; the price is relatively low and not hard to come by; allergies and minimal drug side effects. There are two strategies to prevent the increase in resistant bacteria, i.e., for the selection of pressure to be controlled wisely in the use of antibiotics (prudent use of antibiotics); while the spread of resistant microbes across the plasmid is prevented by applying standard precautions (universal precaution) (Indonesia, 2015; Meriyani et al., 2021).

There were around 480,000 cases of antibiotic-resistant diseases in 2013. Because anti-

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biotic-resistant infections impact both developed and developing countries equally, it is critical to monitor antibiotic resistance globally. Although reliable estimates of drug resistance are tough to obtain it is estimated that antimicrobial-resistant infections would cause roughly 10 million deaths per year by 2050, with a total GDP loss of $100.2 trillion if proper actions are not implemented. In the United States and Europe, methicillin-resistant Staphylococcus aureus (MRSA) kills approximately 50,000 people each year, with many more dying in other places (Murray et al., 2022; Nataraj & Mallappa, 2021). According to the Antimicrobial Resistance in Indonesia study, conducted on 2494 people in the community between 2000 and 2005, up to 43% of Escherichia coli are resistant to the antibiotics ampicillin (34%), cotrimoxazole (29%), and chloramphenicol (25%) (Indonesia, 2015). Antibiotic resistance is linked to poorer health outcomes, longer hospital stays, increased costs for both the patient and the government, and increased death (Ahmed et al., 2015).

Antibiotic resistance reduction efforts have been carried out all over the world, including in Indonesia. The Antimicrobial Resistance Control Program (ARCP) has become one of the national programs in the National Hospital Accreditation Standard. As of January 1, 2018, the Hospital Accreditation Committee has determined ARCP as one of the mandatory programs involved in the assessment component (KARS, 2017). A survey on the use of antimicrobials was conducted as part of the Exploration of Antimicrobial Consumption to Identify Targets for Quality Improvement in Indonesian Hospitals (EXPLAIN) study in all inpatient wards of the Royal Taruma Hospital in 2019 with a total of 100 patients (unpublished report). There were 75 patients (75%) who received at least one antibiotic, consisting of 5 ICU (Intensive Care Unit) patients and 70 ward patients (including intermediate care). The most prescribed antibiotics were Ceftriaxone (45%), Levofloxacin (13%), and Meropenem (6.5%). The number of patients who received antibiotics for surgical prophylaxis was four people, of which 3 out of 4 patients (75%) received prophylactic antibiotics for more than 24 hours (prolonged prophylaxis). The use of antibiotics as definitive therapy based on culture results was as much as 3%. The use of empiric antibiotics was 97%, consisting of 81% for empiric therapy, 12% for medical prophylaxis, and 4% for surgical prophylaxis. The top three diagnoses for antibiotics were typhoid fever (23%), pneumonia (13%), and dengue fever (10%). T16% patients received antibiotics without clear indication (Explain, 2019).

The high antimicrobial resistance is caused by the irresponsible and wise use of antimicrobials, and the spread of resistant microorganisms through the patient to the environment, which is due to the inadequate implementation of infection control and prevention. To control resistant microorganisms in hospitals, it is necessary to strive for a program to be able to control the use of antimicrobials in hospitals (KARS, 2018). Therefore, the government, in this case, the Ministry of Health, created a new National Program, one of which is the Antimicrobial Stewardship Programme (ASP), to control the use of irrational antibiotics in health care facilities. In November 2018, Royal Taruma Hospital formed an ASP Team to support the national program and reduce the use of irrational antibiotics. Previously, a Pharmacy and Therapeutics Committee was formed to improve the quality and achievement of pharmaceutical services at the hospital as a reference for pharmacists in monitoring therapy, supporting the ASP Team in implementing its program.

The ASP team has prepared Guidelines for the use of antibiotics based on the agreement of the clinician of each Functional Medical Staff. The six diagnosis groups have been compiled, i.e. soft tissue infections (soft tissue infections), pneumonia, intra-abdominal infections, urinary tract infections, sepsis, and adult preoperative prophylaxis. Since the formation of the ASP Team, there has never been an analysis of the ASP Team's policies and work programs to reduce the use of irrational antibiotics. This research aims to determine the implementation of ASP policies on antibiotic use. Analysis of the implementation of policies and work programs of the ASP Team will be carried out using a systems approach, covering all units involved in providing health services at the Royal Taruma Hospital.

METHOD

This research method was a descriptive-analytic qualitative study using a retrospective approach, located at the Royal Taruma Hospital, Special Capital District of Jakarta. A qualitative primary data through structured in-depth interviews found out the perceptions, opinions, and thoughts of related parties regarding the use of antibiotics and their relation to the implementation of ASP policies. The researcher asked open-ended questions were asked by using interview guidelines that have been prepared in advance, with embedded and adjustable probes to prompt further discussion and lead the conversation in the right direction. There were 14 informants

such as the irector of Royal Taruma Hospital, Head of Medical Support Division, Head of Department of Medical Services, Hospital Medical Committee, ASP Team Leader, ASP Team Member, Pharmacy and Therapeutics Committee, Medical Doctor in Charge (five people from Internal Medicine, Surgery, Children, Lung, and Obsgyn), Head of Nursing Department, and Head of Nursing ward. The criteria for informants were selected based on the principles of adequacy and appropriateness as the basis for making decisions. In-depth interviews were conducted from November-December 2020 by applying health protocols. All in-depth interviews were conducted either at the working unit of the informant or at a convenient place in the Royal Taruma Hospital as preferred by participants. If a face-to-face interview was not possible, the interviews were conducted virtually via Whatsapp video call. In-depth interviews were done in the local language (Indonesia) and were led by the researcher (ERM) who is fluent in the local language of use. Participants did not receive any prizes/souvenirs from this research by the statement in the informed consent. Data were mainly collected by one researcher (ERM), a medical doctor ,and the Head of the Medical Services Division of the Royal Taruma Hospital. In-depth interviews lasted 30 minutes to 1 hour. There was no one else in the room apart from the interviewer and the participants.

Secondary data were obtained from a review of policy documents, standard operating procedures of medical service standards related to the implementation of ASP policies regarding the use of antibiotics, and the use of antibiotics used Defined Daily Dose (DDD)/100 patient-days, periodically taken in February, May, and August 2020, with a total of 1206.6 DDD/100 patient-days. It took the evaluation of every quarter with the consideration that the ASP policies had just taken effect in November 2019. The inclusion criteria for DDD data taken were patients treated in the nursing ward, received antibiotic injection therapy, records of antibiotic use in the patient's complete medical record, rand ecorded in hospital pharmaceutical drug transactions. At the same time, the criteria for the exclusion of DDD data were taking oral antibiotics. From these results, an overview of the rationality of the use of antibiotics used in the nursing ward will be obtained, then confirmed by data from in-depth interviews with 14 informants. Data processing is carried out through data collection, data reduction, data transcripts (recording the data without making conclusions), data sorting by grouping data into subtopics or variables, presentation of data summaries in the form of tables or graphs, and data analysis on the use of antibiotics in inpatients. Drawing conclusions and verification is done by presenting data in the form of preliminary conclusions. Lastly, it is classified ASP policy regarding antibiotics, human resources, hospital facilities, and infrastructure, including laboratories and Hospital Management Information System (HMIS), and budget as Input, the guideline on antibiotic use, ASP activities, monitor, audit and feedback, and evaluation as Process, and the rational use of antibiotics as Output. A validity test is carried out by triangulating data and sources to maintain data validity to strengthen the validity and minimize bias of data and information.

Ethics is carried out by requesting research informed consent from respondents, is anonymous or respondents who do not include names on the questionnaire sheet and do not mention names during in-depth interviews. All information collected will remain confidential. After obtaining research permission from the hospital and a letter of ethical review approval from the IRB at Universitas Indonesia, this research was conducted with the ethical review number:883/UN2. F10.D11/PPM.00.02/2020.

RESULT AND DISCUSSION
Input

Input in the form of ASP policies was assessed from document review and in-depth interviews, which included rational use of antibiotics, antibiotic resistance, availability of antibiotic drugs, empowerment of P & T Committee and the implementation of Clinical Practice Guideline (CPG). Our study showed that the ASP policy has not run optimally because there is no understanding between the Medical Doctor in Charge (MDiC) on the policy of using antibiotics, even though the understanding of rational antibiotics, antibiotic resistance, availability of antibiotic drugs, Pharmacy and Therapeutics (P&T) committee, empowerment is in line with ASP. Still, most of the MDiC prefer to use guidance from their respective colleges or their empirical experience than CPG. The human resources involved in ASP activities such as MDiC, ASP Team, P & T Committee, Infection Prevention ,and Control Nurse (IPCN) Team, Clinical Microbiology, and Medical Committee, have an important and supportive role in implementing ASP policies, but their respective roles are each still needs to be improved. Internal coordination needs to be improved among the members of the ASP Team which consists of various parts so that they can follow up with each other. The hospital facilities

and infrastructure in laboratory facilities were adequate. At the same time, HMIS was not optimal because currently there was still a lot of manual work, but currently the bridging process to the electronic process. For the budget, no specific funding has been proposed for the ASP programs and activities. If there are internal and external activities such as training, the hospital will facilitate them

Rational use of antibiotics by the clinical condition of the patient, supporting examination, according to the dose, duration, and time of administration, be aware of side effects (Informants 1, 4-14); *not fixated on certain drug manufacturers* (Informant 2); *by the applicable guidelines* (Informant 3).

Factors that cause antibiotic resistance are an appropriate use of antibiotics (Informants 2,10); *MDiC's experience* (Informant 8); *other factors from the pharmacy and patient encouragement* (Informant 9); *there is no pattern of hospital germs* (Informants 11, 12).

Barriers to the availability of antibiotic drugs, namely the absence of these drugs in the hospital formulary, and having to take a special route (Informant 7); *having to buy outside the hospital because cases are rare* (Informant 9); *the drug methyldopa is not available* (Informant 12); *sudden demand in large quantities* (Informant 14).

Routine activities carried out by P & T Committee in discussing the problem of using the drug formulary include regulating the availability of drugs and the hospital formulary (Informants 5,8,10,11,12); *monitor, collect data* (Informant 6); *quality and cost control, activities are carried out every 6 months for reviews, new drug proposals, drug deletion, new drug information* (Informant 7).

Implementation of the CPG related to the use of antibiotics is not appropriate (Informants 3,4); *MDiC does not yet know what specialization CPG is* (Informants 8-12).

Table 1 shows the pattern of antibiotic use in hospital ward based on DDD/100 patient-days data from the ASP Team. The pattern of antibiotic use is mostly broad-spectrum. In accordance with the results of in-depth interviews, MDiC did not want to get a bad assessment and blamed by the patient, because the disease does not heal quickly or has complications, so they prefer the type of broad-spectrum antibiotic. Although the first choice of antibiotics for this case should be another class, MDiC still provides broad-spectrum antibiotics because from the empirical experience, it is safer.

Other studies in Makassar, Jakarta, Surabaya, Bandung, and Bali also found similar results that the socialization of ASP activities has not been going well, in terms of socialization of regulations, implementation of guidelines, supervision, auditing and feedback (Handayani et al., 2017; Bramardipa et al., 2019; Rukmini et al., 2019). The socialization of an organization is a process of delivering information to all related departments so that each person from that division gets information required to generate commitment and participate in activities. Thus, the socialization of activities is an important matter that must be a concern so that the ASP Team can increase its frequency, intensity, and quality to support the progress of its program, especially during the current Covid-19 pandemic, such as by utilizing various information media, such as the WA group, virtual meetings even with the dissemination of information via leaflets.

Several factors influence the implementation of ASP in controlling antimicrobial resistance, among others: effective communication between the ASP Team and the target group, which can be seen from the dissemination, clarity, and consistency of the information conveyed, can be a measure of achievement; resources, including

Table 1. Pattern of Antibiotic Use in Hospital Ward based on Antibiotic Group and Spectrum

Antibiotics	DDD/100 Patient-Days	%	Spectrum
Cephalosporin	836	69,29	Wide
Quinolone	250,4	20,75	Broad
Carbapenem	87	7,21	Broad
Phosphonate Acid	15,5	1,28	Broad
Penicillin	10,7	0,89	Broad
Aminoglycoside	3,5	0,29	Narrow
Glycopeptide	1,8	0,15	Broad
Tetracyclin	1,7	0,14	Broad
Total Use	1206,6	100,00	

human resources, budgets, facilities, and authorities; disposition, which are characteristics of the ASP Team such as commitment, honesty, and democracy; organizational structure (Indriana & Adisasmito, 2018).

Process

The process was the guideline on antibiotic use and the ASP Team of hospital activities, which were also carried out by processing secondary data and in-depth interviews. The guideline on antibiotic use has not been running optimally because not all sections have the guideline on antibiotic use. The understanding of the MDiC still refers to the guidelines from their respective colleges. As for the activities of the ASP Team, among others, the supervision has been carried out by filling out an antibiotic request form by the MDiC, and then the data is collected and recapitulated, which will be presented in front of the hospital leadership and other relevant departments each year. Because the strategy is chosen by the ASP Team and the hospital leadership was the back-end strategy, antibiotics that are included in the restricted or reserved criteria are still given and will be evaluated in the annual report. The evaluation of antibiotic use that the ASP Team has carried out is a quantitative evaluation of DDD/100 patient-days, while the qualitative evaluation is still in the process of collecting data in the nursing ward. From the results of DDD evaluation, it was found that the pattern of antibiotic use was not by the guideline on antibiotic use, seen from the large variety of antibiotics given, the 90% drug utilization segment consisting of Ceftriaxone, Levofloxacin, and Meropenem, which are broad-spectrum antibiotics. Likewise, from medical record data regarding the top ten diagnoses in hospitalized patients in February, May, and August 2020, there are several viral infections which are self-limited diseases, and there are also non-cases of infection. Meanwhile, the suggestion or feedback obtained is that there is a need for further socialization with various methods, given the Covid-19 pandemic and the preparation of germ patterns and antimicrobial resistance, so that it can be a reference for the MDiC in choosing the type of antibiotic to be used.

Regarding the activities of the ASP team, we have had regular meetings by inviting other sections, conducting socialization, collecting data on antibiotic requests in the treatment room (Informants 1-5).

As a result, Meropemen prescriptions were slightly decreased (Informant 7); more monitored use of antibiotics (Informant 13); MDiC started to give antibiotics gradually from low (Informant 14).

Not all MDiCs have implemented the guidelines on antibiotic use due to different understandings (Informants 5-7, 14); MDiC has considerations in the selection of antibiotics such as empirical experience, guidelines from specialized associations (Informants 8-12).

Lack of socialization and dissemination of information about the activities and policies of ASP hospitals, such as the guideline on antibiotic use, has caused the implementation of policies on the use of antibiotics in hospitals is not also going well. An increase in the rationality of using antibiotics after the guideline on antibiotic use was implemented, has also been found in Pekanbaru (Rosdiana et al., 2018). To increase the understanding of health workers, especially MDiC, about the wise use of antibiotics, it is necessary to increase the socialization and dissemination of information so that clinicians' awareness of the use of wise antibiotics will increase and start conducting culture examinations for patients who are going to get antibiotics or refer to the guideline on antibiotic use or CPG.

The monitoring, auditing, and feedback carried out by the ASP Team has been carried out but has not been optimal. Reporting of evaluation results and feedback has not been reported in writing to the Hospital Director but is presented in routine meetings of the ASP Team. Instead, it is necessary to make a written report to the Director of the Hospital as material for evaluation and consideration of the Director of the Hospital in preparing programs and further activities of the ASP Team on an ongoing basis. Meanwhile, the supervision of implementing the policy of rational antibiotic use at the Persahabatan Hospital had been carried out in the form of a pilot project in the Lung, Perina, Internal Medicine and ICU sections. The audit that has been carried out is in the form of an audit of the use of antibiotics according to the results of culture, formulary, and generic drugs (Dirga et al., 2021).

The obstacles encountered at PMI Hospital in implementing ASP included ineffective communication, limited human resources, limited budget, lack of authority, unavailability of the guideline on antibiotic use, while in Persahabatan Hospital there was a lack of coordination between divisions, lack of supervision from government, and the Health Office, lack of coordination between government, hospitals and stakeholders, and lack of motivation for implementing these policies (Indriana & Adisasmito, 2018).

From the evaluation of antibiotic use with

DDD/100 patient-days, it was found that a pattern of antibiotic use was still not in line with the policy of using antibiotics. The pattern of antibiotic use from the six wards in February, May, and August 2020 that was most often used and included in DU 90% were broad-spectrum antibiotics, such as Ceftriaxone (64.7%), Levofloxacin (20.1%), and Meropenem (6.9%). A similar study result was also found at a private hospital in Bandung, where the antibiotic groups included in DU 90% were Cephalosporin, Quinolone, Penicillin, and other antibiotics (Pradipta et al., 2012). In a study in the Surgery ward of Airlangga University Hospital, Surabaya, prophylactic antibiotics included in DU 90% were Cefazolin and Ceftriaxon, while therapeutic antibiotics were Ceftriaxone, Metronidazole and Cefazolin (Pratama et al., 2019). Meanwhile, the results in the Internal Medicine ward at Pamekasan, antibiotics that are included in DU 90% are Ceftriaxone, Ciprofloxacin, and Levofloxacin (Ridwan et al., 2019). From several studies in some of these areas, the trend of antibiotic uses most often used in hospital inpatient wards is the antibiotic class Cephalosporin and Quinolone, which are broad-spectrum antibiotics.

The principle of using antibiotics wisely should be to use narrow-spectrum antibiotics, with precise indications, dosage, interval, and duration of administration; the implementation of a restriction policy on the use of antibiotics with the guideline on antibiotic use and prioritizing the use of first choice antibiotics; based on the patient's condition and the results of supporting examinations such as microbiology, serology, and others; not given in cases of viral infection or disease that can heal itself (self-limited); selection of antibiotic types based on the results of culture and sensitivity patterns of microorganisms (Indonesia, 2015; Meriyani et al., 2021_ENREF_9). The DDD value does not indicate the recommended daily dose, but by calculating DDD, the segmentation of antibiotic use of 90% Drug Utilization can be calculated by sorting the most frequently used antibiotics, from the largest to the smallest, and then the 90% segmentation of the largest use. From this 90% DU, the most frequently used antibiotics in a health institution are the 90% segmentation of the most frequently used antibiotics. This 90% DU value can indicate the quality of prescription writing and adherence to antibiotic guidelines and formularies at related institutions (Hadi et al., 2013; Indonesia, 2015; Khoiriyah et al., 2020). Calculating the DDD value can also be used as a basis for evaluating with the Gyssens method, so that anticipation can be

done immediately to prevent antibiotic resistance (Pratama et al., 2019).

The value of DDD is directly proportional to the frequency of antibiotic use. The greater the value of DDD, the less selective the use of antibiotics will be and does not follow the principles of using wise antibiotics (Khoiriyah et al., 2020). It is said that the evaluation of antibiotic use can be done quantitatively by counting DDD/100 patient-days or qualitatively by using the Gyssens method, DDD/100 patient-days is the average adult antibiotic dose compared with WHO standard DDD and length of patient care. The benefits of using DDD/100 patient-days can be used as a comparison with other health facilities even at the international level; can document the intensity of therapy with various groups; can evaluate treatment changes, regulatory effects, and the effect of the intervention on prescribing patterns. After obtaining the Anatomical Therapeutic Chemical (ATC)/DDD value, it is appropriate to continue with a qualitative evaluation with the Gyssens method. The antibiotic category used is known, whether it is following the policy rules for antibiotic use or not.

The ASP team has evaluated the use of quantitative antibiotics by calculating the ATC/DDD of the antibiotic. Unfortunately it has not been followed up with the Gyssens method (Yuniar et al., 2016; Rosdiana et al., 2018). Currently, the ASP Team is only starting the evaluation of Gyssens from patients who are treated in the intensive care unit. Likewise, examinations for new microorganism cultures are carried out routinely in the intensive care room, have not been routinely carried out in the wards, and have not been routinely instructed by the MDiC to be carried out on new patients admitted to hospitalization for various reasons, including new culture results. Release within 3-4 days, the examination fee is quite expensive, so that the patient objected. As a result, the germ pattern and mapping are only in the intensive room, while there is no one for the care ward. This condition causes the MDiC to have no guidance in determining antibiotics and their resistance in the nursing ward. It is often the reason for the MDiC to prefer the type of antibiotic recommended by its colleague compared to that in the guideline on antibiotic use.

The feedback or suggestions obtained are for the socialization of ASP Team activities to be further enhanced by using various kinds of media, not relying on routine meetings alone, especially during the Covid-19 pandemic, where activities and coordination between divisions are temporarily stopped. To anticipate this, so that

ASP activities can continue, it is better to consider social media to communicate between the ASP Team and related departments in the hospital. The suggestions given by the informant included the understanding of all medical staff of the use of antibiotics. Therefore, it is necessary to hold education and training related to the use of antibiotics, especially for health workers in ASP Team; commitment of hospital leaders and staff in overseeing the implementation of ASP policies so that they can run consistently and accordingly, socialization and coordination between divisions need to be further intensified, and there are sanctions from the hospital leadership; revised ASP policies and guidelines related to the use of antibiotics.

Likewise, the important thing to be improved is the understanding, knowledge, and skills of human resources related to antimicrobial resistance and the use of antibiotics by scheduling education and training both internally and externally; communication between the ASP Team and related divisions is more improved and coordinated; support and commitment from the Hospital Director and his staff in overseeing and facilitating ASP Team policies; as well as consistency in the implementation of ASP policies.

Output

The output is obtained from the quantitative evaluation of DDD/100 patient-days. The pattern of antibiotic use on the ward for infectious and non-infectious cases was not a significant difference. The most frequently used antibiotic was a broad-spectrum antibiotic, even Meropenem was the second-largest antibiotic used in the Children's ward. After looking at the medical record data regarding the top ten diagnoses both overall and in the Children's ward in February,

May, and August 2020, several diagnoses do not indicate antibiotic therapy. The rational use of antibiotics is not optimal yet. It is necessary to search further medical records to assess whether there are other accompanying symptoms or diseases so that Meropenem or other considerations are given.

Based on the medical record data of the Royal Taruma Hospital, from the ten most diagnoses of hospitalized patients in February, May, and August 2020, several diagnoses should not receive antibiotic therapy, such as dyspepsia syndrome, it is necessary to investigate further whether there are other symptoms that accompany this dyspepsia syndrome so that MDiC decided to give antibiotic therapy or because MDiC's understanding of antibiotics is still not by the ASP Hospital policy. Likewise, with Dengue Fever, it is known that the cause is the Dengue virus which should not require antibiotics because it is a self-limited disease. But again, it is necessary to conduct further medical record studies, on whether there are other accompanying symptoms so that antibiotic therapy is given or not. This can be an input for the ASP Team to conduct further research on the evaluation of antibiotic therapy for a diagnosis that is not indicated for antibiotics (Table 2).

The large variety of antibiotics used in the nursing ward (> 20 types of antibiotics), the high use of broad-spectrum antibiotics, and the frequent use of third-generation antibiotics (Meropenem), especially in the children's ward, increase the occurrence of resistance to the antibiotics used. For this reason, a policy on limiting the use of antibiotics is necessary, as is the strategy taken by the ASP Team, which is still using the back-end strategy, so after running for two yea-

Table 2. The Ten Most Diagnoses of Inpatients

Diagnosis	The Number of Patients
Syndrome Dyspepsia*	114
Gastroenteritis	101
Typhoid Fever	97
Dengue Fever*	84
ISPA	80
Diabetes Mellitus*	70
Bronchopneumonia	69
Hypertension*	66
Covid-19	45
Cephalgia*	37
Total	763

*Case of viral infection or not cases of infection

rs, the ASP Team needs to consider changing its strategy to a front-end strategy, so that the use of antibiotics is not wise can be suppressed. Limiting the use of antibiotics can be done by compiling guidelines for treatment management prepared by hospitals based on evidence-based medicine and germ and antimicrobial resistance patterns.

The implementation and evaluation of rational drug use in hospitals have not been carried out due to different perceptions among the team regarding rational drug use. Almost the same as what was experienced by the ASP Team where coordination between sections was not optimal and still needs to be improved, especially in preparation for the National Hospital Accreditation Standards, where ASP is a national program surveyed in hospital accreditation. Therefore, it is only natural for the ASP Team to start preparing all matters related to the assessment carried out in hospital accreditation.

CONCLUSION

From the ASP quality indicators, the implementation of the ASP policy on the use of antibiotics has not been optimal. Factors that become obstacles in implementing ASP policies include lack of socialization and coordination between the ASP Team and related sections such as MDiC, Medical Committee, P&T committee, and IPCN, so it is necessary to consider other ways of socialization and coordination, such as through social media or information leaflets. Supporting factors in implementing ASP policies include: the guideline on antibiotic use has been prepared for 6 disease groups and CPG for each Functional Medical Staff, hospital laboratory facilities support supporting examinations including microorganism culture and sensitivity, support from hospital leaders such as facilitating educational activities and training ASP Team members, and regular meetings. Hospital management needs to bring in experts through round table discussions or internal workshops or encourage MDiC to attend regular education and training. In addition, it is necessary to change the ASP strategy approach from a back-end strategy to a front-end strategy.

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