

COMMUNITY HEALTH CENTRES AS THE PHARMACEUTICAL SERVICES SUPPORT SYSTEM IN HEALTHY INDONESIA PROGRAM: AN OBSERVATIONAL STUDY IN WEST JAVA INDONESIA

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ABSTRACT

Objective: The Healthy Indonesia Programme with a family approach strategy was launched by the Indonesian government in 2015. Pharmaceutical service, including drug supply management and clinical pharmacy, is one of the essential components for the program implementation. This study was aimed to evaluate the pharmaceutical services support in the Healthy Indonesia Programme in West Java Indonesia.

Methods: This was a cross-sectional study observed on pharmaceutical services under the family approach programme description. A self-completed questionnaire was distributed to 39 accredited community health centres (CHCs) in West Java, Indonesia. Several indicators of the Standard Pharmacy Services were assessed.

Results: Thirty-nine CHCs were involved in this study. Most of the CHCs were accredited as intermediate (59%) and have applied good pharmaceuticals and consumables inventory management. The online system and more training will give room for improvement. A big gap was found in human resources number and competencies, impact on clinical pharmacy standard services including counselling services (23.1%) and home visit (7.7%).

Conclusion: Applying an online system is needed to improve the inventory management system in CHCs. The quality of clinical pharmacy standard services in CHCs can be improved by fulfilling the minimum numbers and competencies of human resources.

Keywords: Clinical pharmacy, Family approach, Pharmaceutical management system

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INTRODUCTION

Community Health Centres (CHC) are the first line of curative, promotive, and preventive healthcare services facility for population on subdistrict level. In Indonesia, the number of CHC keeps increasing, and up to date, there are 10,134 units of CHCs around the country [1, 2]. In 2015, as the translation of the Indonesian government's program for Healthy Indonesia Program, a family approach strategy called 'Program Indonesia Sehat-Pendekatan Keluarga' (PIS-PK) was launched to enhance the quality of Indonesian public health. This program is implemented via the CHCs, and each CHC was assigned to make home visits in their working area [3, 4].

To assess the effectiveness of this program implementation, twelve main indicators were determined as the family health status, and one of the essential components is the pharmaceutical service [5]. Pharmaceutical service in CHCs involves two main activities, namely drug supply management and clinical pharmacy. But besides these two activities, it is also necessary to pay attention to the pharmaceutical human resources and their competencies [2, 6, 7]. Pharmaceutical services are expected to ensure the effectiveness, safety and efficiency of drugs and make sure that they are easily accessible for the public.

Even though the program has been conducted for more than five years, however, there are no comprehensive assessments for the pharmaceutical services in the CHCs during the PIS-PK implementation [2, 6]. This study was aimed to evaluate the pharmaceutical services support during PIS-PK implementation in the West Java Province, Indonesia.

MATERIALS AND METHODS

Study design

This was a cross-sectional study observed on pharmaceutical services under the PIS-PK program description. The study was

conducted using a self-completed questionnaire (Supplement 1) which evaluated several indicators including the availability of pharmacists or pharmacy technicians, drug supply management, clinical pharmacy services and the availability of drugs, represent the Standard Pharmacy Services at Health Centres published by the Ministry of Health [2], which should be applied by CHCs. The questionnaire was validated through a workshop conducted in the Ministry of Health Training Centre, Jakarta, before the study started.

Respondent's recruitments

From a total of 1,054 CHCs in West Java, we only included accredited CHCs that have previously completed the PIS-PK training program conducted by the Training Units of the Indonesian Ministry of Health. Forty CHCs from Majalengka, Indramayu, Tasikmalaya, Cianjur, Sukabumi districts and Sukabumi city, West Java, Indonesia, were participated in this study.

Data collection

The data collection in this study was conducted in the Health Training Centre, Bandung. The questionnaires were answered by the representative respondents who were responsible for drug supply management services and/or clinical pharmacy service of each CHC, including the pharmacist, pharmacy technician, human resources personnel, or other staffs CHC staff. One respondent represented by either the pharmacist or pharmacy technician was sent by each CHC to fill in the questionnaire and joined the Focus Group Discussion.

Statistical analysis

Data were analysed by the Statistical Package for Social Scientists (SPSS) v.22 (IBM Corporation, Armonk, NY, USA). Frequency analysis was performed, and the data were presented in n (%).

RESULTS

From all 40 CHCs, one was excluded due to the accreditation criteria. The general characteristics of CHC respondents is shown in table 1.

Most of the CHCs in West Java were accredited as Intermediate (59%), while the others were accredited as Basic (33.3%) and Primary (7.7%). Inpatient CHCs were mostly located in rural areas

(38.5%), while outpatient CHCs were most located in urban areas (33.3%). Neither inpatient nor outpatient CHCs was located in the remote and very remote area.

Table 1: The general characterization of CHCs and its representative

Respondent's characteristic	N	%
Gender		
Male	10	26
Female	29	74
Educational background		
Pharmacy Highschool	4	10
Highschool	1	2
Pharmacy Diploma	14	36
Bachelor in Pharmacy	19	49
Magister in Pharmacy	2	3
CHC Area		
Cianjur District	4	10.26
Tasikmalaya District	3	7.69
Majalengka District	11	28.21
Sukabumi City	7	17.95
Indramayu District	6	15.38
Sukabumi District	8	20.51
CHC Accreditation		
Plenary	0	0
Primary	4	7.7
Intermediate	23	59
Basic	12	33.3
Unaccredited	0	0
CHC Treatment Type		
Inpatient CHC for urban area	3	7.7
Inpatient CHC for rural area	15	38.5
Inpatient CHC for remote and very remote area	0	0
Outpatient CHC for urban area	13	33.3
Outpatient CHC for rural area	8	20.5
Outpatient CHC for remote and very remote area	0	0
Total	39	100

Besides the two main activities, drug supply management and clinical pharmacy services, we also assessed the CHCs' human resources and competencies. The quality of CHCs' services is shown in table 2.

Table 2: Questionnaire assessment to the CHC's quality in supporting PIS-PK program

Indicators	Yes		No	
	N	%	N	%
Human Resources and Competencies				
• There are a minimum of 2 pharmacy technicians for inpatients CHC for an urban area, and a minimum 1 pharmacy technicians for other CHCs.	13	33.3	26	66.6
• The pharmacist and pharmacy technicians get any competency improvement training.	8	20.5	31	79.5
• The pharmacist and pharmacy technicians performed PIS-PK in the CHC.	30	76.9	9	23.1
Drugs supply management				
• CHC uses Healthy Family Index Data from PIS-PK in their logistic data plan.	11	28.5	28	71.5
• Stock planning was determined by the previous data record for the number and type of diseases, or both.	37	94.9	2	5.1
• The drug selection based on National Formulary and National Essential Medicine List published by the Ministry of Health.	35	89.7	4	10.3
• The stakeholders were involved in logistic data planning.	39	100	0	0
• The CHC performs document checking on drugs received.	39	100	0	0
• The CHCs perform organoleptic quality checks on received drugs.	29	74.6	10	25.4
• The CHC has procedures for filing the objection if there are any differences in the quantity and quality of drugs received.	37	94.9	2	5.1
• The need for drugs is not fully met by the Public Health Office.	39	100	0	0
• The CHC received the drugs regularly.	37	94.9	2	5.1
• The CHC received the drugs from the Public Health Office.	33	84.6	6	15.4
• CHC understands the standard pharmaceutical storage requirements.	37	94.9	2	5.1
• The CHC has qualified pharmaceutical storage.	14	35.7	25	64.3
• CHC distributes the drugs to their sub-units	39	100	0	0
• CHC distributes the drugs to the external sub-units based on floor-stock	34	87.7	5	12.3
• CHC uses the DURRS form to report to the District Pharmacy Installation.	39	100	0	0
• The sub-unit uses DURRS to report to CHC.	39	100	0	0
• Pharmaceutical supply was reported regularly.	38	97.4	1	2.6

Indicators	Yes		No	
	N	%	N	%
• The CHC has a team who is responsible for drug removal.	7	17.9	32	82.1
• CHC understands the regulation for drug removal.	30	76.9	9	23.1
• CHC understands the regulation of lost or damaged drugs.	36	92.6	3	7.4
• CHC performs the drugs inventory management.	37	94.9	2	5.1
Clinical pharmacy services				
• Prescription was assessed before the drugs were dispensed.	28	71.8	11	28.2
• The prescription was made by physicians or dentists.	12	30.8	27	69.2
• Counselling services	9	23.1	30	76.9
• Home visit	3	7.7	36	92.3

Abbreviations: DURRS: Drug Usage Report and Request Sheet.

In this study, 5.12% of the CHCs do not have any pharmacist and pharmacy technicians. To enhance pharmacy service quality, competent human resources were needed. Training becomes one of the strategies to empower the pharmacist competencies. However, only 20.5% of pharmacists in this study have attended the training.

A number of PIS-PK indicators involve pharmacists and pharmacy technicians, including family planning, vaccination for babies, toddler's growth monitoring, tuberculosis patient treatments, hypertensive patient's treatments, and patients with mental disorders treatments. From the data, it was found that as much as 76.5% of pharmacists and pharmacy technicians have been involved in the implementation of the PIS-PK program.

As much as 94.9% CHCs in West Java Province has applied the Healthy Family Index Data system for drug stock planning, completed with previous data of drug consumption and pattern of diseases. The National Formulary and National Essential Medicine List published by the Ministry of Health was also used to determine the standard drugs for 89.7% CHC. The data showed that even though the Public Health Office regularly sends the drugs needed for the CHCs, the drug needs cannot be wholly fulfilled. Thus, CHCs utilised the capitation funds to fill the gap. Data from this study showed that almost all CHCs understand the principle of drug storage, and the concept of First Expire First Out (FEFO) and First In First Out (FIFO). However, only 35.7% CHCs have a qualified storage system (light, air circulation, humidity, volume, etc).

The CHCs have actively distributed pharmaceuticals and consumables to their sub-units according to the prescriptions and floor stock principles. Drug Usage Report and Request Sheet (DURRS) was used as a standard reporting system in CHCs. It records the initial stock, received drugs, distributed drugs, optimal drugs stock number, and the requested drugs for the next month. In this study, we found that only 17.9% CHCs have a team who is responsible for drug removal. The team was important to verify that the drugs indeed had to be removed. Nevertheless, most of the CHCs understand and apply the principles of lost or damaged drug management. As much as 94.9% CHCs have a good management of their drug stock, to keep the optimum stock to avoid drugs stockpile, regularly do the stock checking and drugs expired date checking.

The prescription assessment was performed in 71.8% CHCs by the pharmacist or pharmacy technicians. Almost all the CHCs (94.7%) prepared drugs in accordance with the prescriptions and deliver information on the regiments to the patients. The concern is that only 30.8% of the prescriptions were written by doctors or dentists, while the rest were written either by nurses or midwives, who were not listed in the health law. The counselling (23.1%) and home visit (7.7%) as part of clinical pharmacy services for supporting the PIS-PK program have low performances in this study.

DISCUSSION

West Java is the most populous province in Indonesia, thus having the most number of accredited CHCs. There are about 10,134 units of CHCs all over Indonesia, and most of them are located in West Java Province, which counted about 1,069 CHCs units [1]. As the support systems for the PIS-PK program, the CHCs need some details to be improved, especially in the pharmaceutical information management system, and the number and competencies of human resources.

Most of CHCs in the sampling area has been accredited to guarantee the quality of their services. Inpatient CHCs were most located in rural areas (38.5%) while outpatients CHCs were most located in urban areas (33.3%), as there are not many hospitals in rural areas thus, the CHCs became the primary services for inpatients.

The competencies of pharmacists and pharmacy technicians will affect the CHC's pharmacy services significantly [8]. However, from this study, it was found that only 33% of the CHCs were qualified with the minimum number of pharmacy technicians. This lack of human resources happened due to financial limitations. To provide good pharmaceutical and clinical pharmacy services, professional human resources must be available. Another strategy to enhance a good quality service is by increasing human resources' competency, such as by training [8]. However, the data showed only 20.5% of pharmacists get chances for attending the training. The amount of in-house training should be added as the solution for human resource problems. Webinar and e-learning can be utilised. Staff-exchanges between health centres, and internship programmes were also recommended. The lack of training programmes will affect not only on the human resources competency but also the inadequate credits for the Pharmacist Registration Certificate renewal, which is needed for the pharmacist work permit [9].

The pharmaceuticals and consumables inventory management includes stock planning, stock demand, stock receiving, storage, stock distribution, stock rotation and expiry monitoring, stock removal, and stock reporting [10, 11]. The result of the study showed that most of the CHCs have good inventory management, except for the storage system. A good drug storage system should have good lighting, air circulation, humidity, volume, etc [6]. Minimum fund support becomes the main reason for this unqualified facility.

When this study was conducted, the DURRS was recorded on a paper-based system. The paper-based system has several weaknesses such as time consuming; lack of accuracy, not real time, delay in making decisions on distribution; cannot detect the expiry date of medicine [11].

An efficient Pharmaceutical Management Information Systems (PMIS) will be able to continuously analyse large amounts of data from the pharmaceutical operation process, and help the management in managing the inventories, decision making, and activities documentation. In other words, the system will improve the whole units' performances [12]. In 2013, Tanzania introduced a national web-based electronic logistics management information system (eLMIS) to support the aggregating, reporting and visualising of data collected from the paper-based system. The system implemented in Tanzania succeeds in improving their data access and usage, visibility and transparency, better planning, management and monitoring, especially to forecast the supply need. The same system was also applied in Zambia and decreased the pharmaceutical vacancy rate from 15% to 0%. Internet-based PMIS helps in reducing storage costs and maintenance, faster decisions in pharmaceuticals distribution, as well as multi-site data access, including the stocks' expired dates [11]. An online reporting system together with appropriate training is recommended to be applied to Indonesia CHCs, to improve and integrate the data report in real time. Perhaps this will give benefits for long-term efficiency and budget-saving, as well as solving the human resources problem.

For decades, pharmacists have broadened their scope beyond traditional distributive and dispensing roles. Pharmacists' interventions and good interaction between pharmacists, physicians, and the patients themselves helped optimize the quality of medication and disease management, referred to as clinical pharmacy services [13]. Currently, the clinical pharmacy services have expanded both in terms of skills and areas of services. While traditionally, the services stay in hospitals to reduce the length of stay and mortality, now a home-visit service is recognised for outpatient settings, especially those with chronic diseases or need long-term monitoring [14, 15].

In the PIS-PK program, CHCs do the pharmacy home services, especially for patients with tuberculosis, hypertension and mental health diseases who received long-term treatments. The data showed that only a few CHCs performed home visits due to the burden of administrative tasks for the pharmacist. The three PIS-PK-focused diseases need regular counselling to ensure patient compliance to their treatments, monitor the side effects and prevent the spread for patients with tuberculosis [3]. This study also found that the availability of tuberculosis, hypertension and mental health diseases drugs is low, and not fulfilled by the public health office. Thus, the CHCs strive for it independently to guarantee continuity in their patients' treatment. The availability of medicine, especially tuberculosis medicine, is critical to avoid drug resistance. Having adequate medicines for a year will eliminate the risk of drug resistance for the patients with tuberculosis [19].

Many factors were needed to perform a good home visit program, such as human resources competencies, and the patients adhere to the activities during a home visit. Thus, training, education, and qualification improvements for pharmacists and pharmacy technicians must be sought. A good collaboration between pharmacists and other healthcare professionals supported with qualified technology will be expected [14, 15].

The limitation of this study is the minimal sampling area focusing only on West Java using self-reported observation data. The representation data should be improved and validated to generalize the findings into the West Java area in the future study.

CONCLUSION

As the main facility for the PIS-PK program, most CHCs in West Java Province have applied good pharmaceuticals and consumables inventory management, although this can be improved by developing an online PMIS, so real-time data can be obtained and the management system can be integrated. The minimum requirement for human resources in number and competencies must be fulfilled, by increasing the training opportunities, to improve the quality of clinical pharmacy standard services, especially in counselling services and home visit for three focused diseases. E-learning and internship programmes at CHCs can be considered, and government contribution in funding support is needed.

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AUTHORS CONTRIBUTIONS

All the authors contributed equally.

CONFLICT OF INTERESTS

Declared none

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