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Implementation of performance-based capitation payment at public health centers in Denpasar, Bali, Indonesia

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ABSTRACT

Background and purpose: The National Health Insurance System has implemented a performance-based capitation (PBC) norm in primary health care facilities (PHCF). PBC has three indicators: contact rate, non-specialist referral ratio (NSRR), and controlled chronic diseases control program (*Prolanis)* participant ratio (CPPR). This study aims to explore the implementation of PBC payment at public health centers in Denpasar, Bali, Indonesia.

Methods: This study utilizes an explanatory sequential mixed method design. Data collection was conducted from February to March 2023. In the first phase, quantitative data were gathered through documentation studies on PBC achievements. The second phase involved qualitative data collection through in-depth interviews with 11 informants, who were selected purposively. Thematic analysis was employed to identify internal and external factors hindering and driving PBC fulfillment.

Results: Among the 11 public health centers in Denpasar, two met the PBC target in 2020, three in 2021, and seven in 2022. During 2020 to 2022, the NSRR and contact rate targets were achieved by all public health centers, except for the contact rate in 2021. The CPPR was the indicator with the lowest achievement, but shows an increasing trend. Strengths contributed to PBC's achievement including sufficient human resources and service facilities, an active *Prolanis* club, and a supportive Primary Care (P-Care*)*. Weaknesses include the absence of planning documents, lack of capitation service reward, insufficient availability of medicines, and inadequate features of *e-Puskesmas*. Threats were suboptimal condition of *Prolanis* participants, the COVID-19 pandemic, non-specialist referral demands from patients, and increased number of target population.

Conclusion: The achievement of PBC at public health centers in Denpasar from 2020 to 2022 was suboptimal. The emergence of various factors namely strengths, weaknesses, opportunities and threats, can be utilized in strategic formulation to optimize PBC in Denpasar public health centers.

Keywords: *performance-based capitation, public health centers, National Health Insurance*

INTRODUCTION

Improvement of the quality of basic healthcare services is a prerequisite for achieving universal health coverage. Healthcare provider payment mechanisms regulation will enhance basic healthcare service quality. In the era of National Health Insurance Program (JKN), healthcare services quality is highly crucial, which includes the implementation of the performance-based capitation (PBC) norm, aiming to elevate the quality of primary health care facilities (PHCF).[1]

The PBC was established in 2019, formerly known as the commitment-based service capitation (CBSC), retaining two similar indicators: the contact rate and the non-specialist referral ratio (NSRR). The third indicator, the ratio of routine *Prolanis* participants visiting (RRPPV), transformed into the controlled chronic diseases control program (*Prolanis*) participant ratio (CPPR). Capitation payments received by PHCF are determined based on the achievement of PBC. PHCF will obtain full capitation payment upon achieving all three indicator targets.[1,2] However, notable challenges, such as the community's lack of enthusiasm in participating in *Prolanis* activities at PHCF, resulted in low achievements. This new set of indicators presents an even greater challenge as it relies on *Prolanis* participants maintaining controlled blood sugar and blood pressure levels according to professional organizational regulations.[2]

The national achievement of the CBSC indicators in 2018 did not meet targets, especially in the contact rate indicator at 106.97 per thousand and the RRPPV at 34.32%. However, the NSRR indicator reached the target of 1.22%.[3] Implementation of CSBC has been problematic, with many PHCFs in Java and beyond facing difficulties meeting the set targets.[4,5] Studies have shown that the indicators, contact rate and RRPPV, often remain unmet due to factors involving internal PHCF human resources and the *Prolanis* group's lack of enthusiasm for utilizing PHCF *Prolanis* services.[4,6] Regarding the contact rate indicator, it is determined by the success of PHCF in inputting patient service data, both sick and healthy contacts, into the P-Care application system. This becomes a burden for PHCF amidst human resource limitations to act as P-Care operators.[7,8] Health centers in Wajo Regency have yet to reach the contact rate and RRPPV indicator targets[8], while the NSRR indicator has already been met.[9,10]

In Denpasar City, PHCF that provide services for JKN participants include public health centers, private primary healthcare clinics, and individual practicing doctors. An initial study revealed that eight of eleven public health centers (72.72%) did not meet the CSBC targets in 2021.[11] Consequently, there were deductions in health center capitation payments. These deductions impacted the decrease in one public health center's financial resources, where 60% of the funds were used for service payment and 40% for supporting public health center operations (procurement of health equipment, medicine, consumables, and capital goods).[12]

One approach used to analyze the environmental situation in achieving PBC is a SWOT analysis which consists of strengths, weaknesses, opportunities and threats domains. This is to evaluate internal factors (strengths and weaknesses) and external factors (opportunities and threats) of the health center. Understanding these factors is very important in developing optimal PBC strategies in public health centers.[13-16] An optimal internal environment is a strength, while a suboptimal internal environment becomes a weakness. A supportive external environment presents opportunities, whereas an unsupportive external environment poses threats.[16]

Research related to CSBC achievement and underlying factors have been conducted extensively, yet there remains limited research concerning one of the PBC indicators, namely, the CPPR. Based on practical and theoretical gaps previously discussed, researchers aim to explore the PBC achievement at public health centers in Denpasar and identify the internal and external environmental factors hindering and facilitating PBC fulfillment in these health centers. The outcomes of this research can serve as a basis for developing strategies to optimize the PBC of public health centers.

METHOD

This study employed the explanatory sequential mixed method which was conducted from February to March 2023. Initially, a quantitative research method using documentation studies was performed to get an overview of the fulfillment of PBC payments in Denpasar public health centers from 2020 to 2022. Data sources included documents detailing the achievement of PBC in Denpasar public health centers from 2020 to 2022 sourced from *BPJS Kesehatan*. Descriptive data analysis was conducted to compare the monthly PBC achievement figures per public health center in Denpasar against predefined targets. Subsequently, the average achievement per public health center and the overall across all public health centers throughout the year were calculated. The variables collected included contact rate indicators, NSRR indicators, CPPR indicators, and PBC.

Contact rate represents the number of registered participants who accessed for PHCF's services over the total number of registered participants in PHCF multiplied by 1,000. NSRR shows the percentage of non-specialist referral over the total number of referrals by PHCF. The CPPR consists of the CPPR for diabetes mellitus and hypertension, hence, both values were added then divided by two. CPPR diabetes mellitus is the percentage of *Prolanis* participants with diabetes mellitus who have controlled fasting blood sugar levels over the total number of *Prolanis* participants with diabetes mellitus registered in the PHCF; while, the CPPR hypertension is the percentage of *Prolanis* participants with hypertension who have controlled blood pressure over the total number of *Prolanis* participants with hypertension registered in PHCF.[2]

The second phase of the study was the SWOT analysis which involved qualitative exploratory research to uncover and identify internal and external environmental factors that act as impediments or drivers in achieving PBC in Denpasar public health centers. The selection of informants was purposive, chosen based on the research objectives while considering sufficiency and relevance principles.[14] In-depth interviews were conducted with 11 selected informants, including head of public health centers, contact rate supervisors, attending physicians, *Prolanis* supervisors, and referral personnel involved in patient care. These informants were chosen from two health centers with high PBC and two health centers with low PBC.

The qualitative research instruments included the researcher, interview guidelines prepared by the researcher, audio recording devices, and cameras for documentation. The interview guidelines encompassed aspects outlined in the WHO's six building blocks health system framework, covering six pillars: healthcare service, healthcare workforce, health information system, medical equipment/vaccines/technology, health financing, and leadership and government.[17] The thematic analysis involved data review, coding, data

reduction, code arrangement, data categorization (organization), theme identification, data interpretation, presentation, conclusion, and verification. Informants and methods triangulation were utilized to enhance data quality.[18] Additionally, member checking aimed to confirm differing or unclear data, while peer debriefing involved discussions with academic mentors. Ethical approval was obtained from the Ethics Commission of the Faculty of Medicine, Udayana University, under No: 260/UNl4.2.2 VII.l4/LT/2023, dated February 7, 2023.

RESULT

The PBC fulfillment of Denpasar public health centers

The quantitative research results encompass the achievement of PBC, including indicators such as contact rate, non-specialist referral ratio, and controlled *Prolanis* participant ratio among the 11 health centers in Denpasar City.

Table 1. PBC Achievement of Public Health Centers in Denpasar, Year 2020-2022

Indicator	Achievement target	Number of health centers that achieved the target			Mean of achievement		
		2020	2021	2022	2020	2021	2022
Contact Rate	≥150 $^{0}/_{00}$	11	10	11	144$^{0}/_{00}$	141$^{0}/_{00}$	155$^{0}/_{00}$
NSRR	≤2%	11	11	11	0,22%	0,11%	0,05%
CPPR	≥5%	2	3	7	1,20%	2,05%	3,35%
PBC	100%	2	3	7	93%	93%	95%

NSRR: non-specialist referral ratio, CPPR: controlled *Prolanis* participant ratio, PBC: performance-based capitation

Achievement of Contact Rate Indicator

The target of the contact rate indicator was ≥150 per 1,000 which was reached by all public health centers in 2020 and 2022, while in 2021, one public health center did not reach the target. The lowest mean achievement in 2021 was 141 per 1,000 (below the target), and the highest achievement in 2022 was 155 per 1,000 (meeting the target). There is an upward trend in the average achievement from 2021 to 2022 (Table 1).

Achievement of Non-Specialist Referral Ratio (NSRR) Indicator

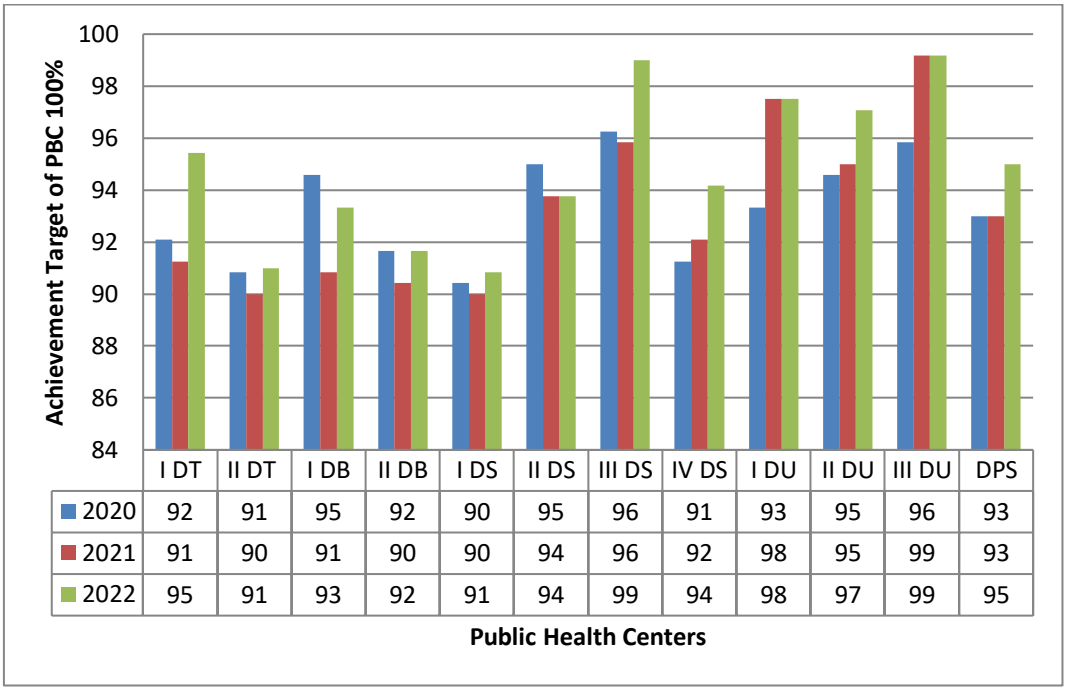
The target achievement for the non-specialist referral ratio indicator was ≤2%. From 2020 to 2022, all public health centers in Denpasar had already met the target. The highest NSSR was 0.22% in 2020, while the lowest was 0.03% in 2022. There is a positive trend in achievement from 2020 to 2022 (Table 1).

Achievement of Controlled *Prolanis* Participant Ratio (CPPR) Indicator

The target achievement for the controlled *Prolanis* participant ratio indicator was ≥5%. Table 1 shows only two health centers reached the CPPR indicator target in 2020, three in 2021, and seven in 2022. The average achievement of the CPPR indicator from 2020 to 2022 has not yet met the target, with the lowest achievement being 1.2% in 2020 and the highest being 3.35% in 2022. However, there is an increasing trend in achievement from 2020 to 2022.

PBC Achievement

The PBC achievement depends on the achievement of its three indicators, where the PBC target is 100%. According to Table 1, out of the eleven health centers studied, only two achieved the PBC target in 2020, three in 2021, and seven in 2022 (Table 1)



	I DT	II DT	I DB	II DB	I DS	II DS	III DS	IV DS	I DU	II DU	III DU	DPS
2020	92	91	95	92	90	95	96	91	93	95	96	93
2021	91	90	91	90	90	94	96	92	98	95	99	93
2022	95	91	93	92	91	94	99	94	98	97	99	95

Figure 1. PBC achievement of public health centers in Denpasar from 2020 to 2022.

(DT: Denpasar Timur, DB: Denpasar Barat, DS: Denpasar Selatan, DU: Denpasar Utara, DPS: Denpasar)

Figure 1 shows that the average PBC achievement per health center in Denpasar City from 2020 to 2022 fluctuates, with an increase observed in 2022. Number of health center achieved full PBC throughout the year, evidenced by the average PBC achievement ranging from the highest at 99% to the lowest at 90%. On average, the PBC in Denpasar public health centers remained unfulfilled throughout 2020-2022. The III Denpasar Selatan Health Centers (III DS) and The III Denpasar Utara (III DU) had the highest average PBC achievement. In contrast, The I Denpasar Selatan Health Centers (I DS) and The II Denpasar Timur (II DT) had the lowest.

According to Table 1, the more consistently achieved indicator was the non-specialist referral ratio (NSRR), which was met by all health centers in Denpasar City from 2020 to 2022. Conversely, the indicator that proved challenging to achieve was the controlled *Prolanis* participant ratio (CPPR). The number of health centers achieving the CPPR indicator target was the same as those meeting the PBC target. The average achievements of the CPPR indicator and the PBC in Denpasar public health centers also did not meet the targets from 2020 to 2022. While most health centers reached the contact rate indicator target, the overall average of contact rate across all health center was below the target in 2020-2021, but in 2022 has reached the target.

Characteristics of informants

Table 2 shows the characteristics of the informants participating in the in-depth interviews, who came from four public health centers in Denpasar. The majority of respondents were female (72.7%), medical doctors (72.7%) with experience in PBC team range from a half year to 8 years and position as head of health center and PBC indicator supervisors.

Table 2. Characteristics of informants

Informant code	Gender	Position	Type of Health Profession	Join the PBC team (year)
IKP01	Male	Head of Health Center	Medical Doctor	0,5
IKP02	Male	Head of Health Center	Medical Doctor	8
IKP03	Female	Head of Health Center	Dentist	6
IKP04	Female	Head of Health Center	Medical Doctor	2
IAK01	Female	Contact Rate Supervisor	Health Administrator	8
IAK02	Female	Contact Rate Supervisor	Medical Doctor	1
IKPR01	Female	Supervisor of Contact Rate, *Prolanis*, and Referrals	Nurse	8
IKPR02	Male	Supervisor of Contact Rate, *Prolanis*, and Referrals	Medical Doctor	8
IPR01	Female	Supervisor of *Prolanis*, and Referrals	Medical Doctor	3
IPR02	Female	Supervisor of *Prolanis*, and Referrals	Medical Doctor	8
IPR03	Female	Supervisor of *Prolanis*, and Referrals	Medical Doctor	6

Overview of internal and external factors influencing PBC achievement of public health centers

Based on in-depth interviews conducted with 11 informants, a subsequent analysis of the internal and external environment factors, identifying strengths, weaknesses, opportunities, and threats regarding the

achievement of PBC in Denpasar public health centers, yielded the following results (Table 3).

Table 3. Themes dan sub-themes of PBC achievement in Denpasar public health centers

Sub-Themes	Themes
• Adequate human resources (in terms of quantity, PBC knowledge, competencies) • Adequate service facilities • Active *Prolanis* club • Supportive *P-Care* BPJS web system	Strengths
• Absence of PBC planning documents • Lack of commitment from health workers to input healthy visit data into P-Care BPJS web system • Capitation service rewards under JKN do not motivate the PBC team • Insufficient availability of medications • Inadequate features of the *e-Puskesmas* web system	Weaknesses
• Referral Back Program (RBP) for patients with chronic disease	Opportunities
• Suboptimal condition of *Prolanis* participants • COVID-19 Pandemic • Increase in non-specialist referral requests from patients • A rise in health center capitation participants & *Prolanis* participants	Threats

Strengths in achieving PBC target

a. Human resources

Human resources in public health centers have adequate knowledge of contact rate NSRR, and CPPR indicators. They are also competent to support the achievement of PBC. Activities to achieve healthy contact rates are carried out through home visits by larva monitoring staff (*Jumantik*). Most informants said that the number of human resources is sufficient.

"Yes, that's enough [human resources]. There is no problem in terms of human resources in our public health center. There is person in charge for each PBC indicator. It supports the efforts to increase PBC achievements." (IPR02)

b. Service facilities in public health centers are adequate to support healthcare delivery. Computer devices, internet networks, medical equipment, laboratory consumables, and wound care consumables are sufficient. Thus, it can support the achievement of PBC.

"The medical equipment facilities at the public health center are sufficient." (IKP01)

c. Having an active *Prolanis* club in public health centers supported PBC achievements.

> *"The Prolanis club has gymnastics activities every Saturday. They come, they are enthusiastic about coming and meet their instructors. We just facilitate the venue and sound system."* (IKP04)

d. The P-Care web system is perceived as supporting factor for the achievement of PBC. For example, if the disease referred to hospital is a non-specialist case, the time, age, complication and comorbidity (TACC) warnings will appear on the P-Care website. Moreover, the P-Care web system enables public health centers to monitor contact rate, NSRR, and RRPT achievement.

> *"P-Care is still supportive, in BPJS P-Care regarding PBC achievements you can monitor the number of contacts, referrals, and Prolanis."* (IKPR02)

Weaknesses in achieving PBC target

a. There are no planning documents such as a proposed activity plan (PAP), activity implementation plan (AIP), activity framework (AF), or standard operational procedure (SOP) related to PBC as guidelines and document material for evaluating PBC achievements. This inhibits the achievement of PBC. Based on the results of the interview, here is the quote:

> *"If we look at the planning, perhaps the inhibiting factor is that there is no special planning for Prolanis management, no SOP or service flow, and the unavailability of PAP and AIP. This is because we prioritize the provision of services over the administrative process." (IPR02)*

b. The lack of commitment of data entry officers to input healthy visit data in the *P-Care* BPJS web system inhibits the achievement of PBC. This is in accordance with the following quote:

> *"Data input is often late. It's delayed until the next month and this kind of thing is repeated every month so the target of contact rate is not achieved. (IKP02)*

c. The fulfillment of PBC does not bring a significant increase in the financial incentives received by health center staff so that they become less motivated to carry out efforts to optimize PBC. Moreover, the incentives from JKN capitation funds do not motivate the PBC team to complete their responsibilities because there is no difference in points for the PBC team and other employees who are not from the PBC team. Based on the results of the interview, with the following quote:

> *"So their motivation to achieve that [PBC] is lacking because it is considered to have only a small impact [on the incentives they receive]." (IPR02)*

d. Stockout of medicines happened in public health centers could hinder the access of hypertension and diabetes mellitus patients to the medication and could consequently lead to poor control of blood pressure and blood sugar. This hinders the achievement of PBC. Most of the informants said that the health center's medicines were lacking. Here is the quote:

"The problem is often with medication because when the medication run out, it was not arrived on time, it's delayed, so the medication isn't all available" (IKP04)

e. The *e-Puskesmas* web system, such as *Prolanis* patient markers in *e-Puskesmas*, does not exist, so it takes time to complete the controlled *Prolanis* achievement in the *P-Care* web system. This hinders the achievement of PBC. Based on the results of the interview, the following is an excerpt:

"So the monitoring is still conducted through P-Care, because the Prolanis data has not yet been bridging to e-Puskesmas." (IPR01)

Opportunities in achieving PBC target

The referral back program (RBP), as one of the *BPJS Kesehatan*'s program, supports the achievement of PBC. RBP enables patients with chronic diseases, including hypertension and diabetes mellitus, to access for treatment in public health centers that improves the accessibility of health services. Moreover, RPB improves contact rate due to the increase in number of hypertension and diabetes mellitus patients visits to public health centers.

"One of the BPJS programs, referral back program is very good for patients and also public health centers, right? Patients don't have to queue at the hospital. They just go to the health center for a check-up." (IPR03)

Threats in achieving PBC target

a. Sub-optimal condition of *Prolanis* participants, such as lack of family support and irregular control of blood pressure and blood sugar, hinder the achievement of PBC.

"In fact, there are many obstacles from external parties, from patients. Patients often have no one to take them [to health center]. Their mobility is limited so it is difficult. If no one takes them, they don't get checked. They don't understand that they have to take medication regularly every day, and have regular check-ups." (IPR03).

b. The COVID-19 pandemic has reduced patient visits to public health centers and health worker visits to the community, thereby hampering the achievement of PBC. Based on the results of the interview, the following is an excerpt:

"Yes, there is a decrease in visits. We couldn't reach the contact rate. I feel that in 2020, people didn't want to be visited." (IKP02)

c. Requests for non-specialist referrals from patients lead to an increase in non-specialist cases being referred. This hampers the achievement of PBC. According to the following interview excerpt:

"There are still many patients who ask for referrals with various reasons. Even though the disease they suffer from is mild. Mild diseases like that cannot be referred, they can be treated at the health center." (IPR03)

d. Increased capitation participants of hypertension and diabetes mellitus *Prolanis* in health centers has increased the target number of contacts and controlled *Prolanis* that could potentially hinder the achievement of PBC. According to the following quote:

> *"If there is an increase in capitation participants in the health center, it is also accompanied by an increase in the number of Prolanis participants who have high blood pressure or diabetes mellitus. That is because we cannot choose whether the participants are young or old." (IKP02)*

DISCUSSION

The PBC achievements depend on the achievements of its three indicators. Among the 11 public health centers in Denpasar, two met the PBC target in 2020, three in 2021, and seven in 2022. None of the health centers achieved full PBC for a whole year. During 2020 to 2022, the target of NSRR and contact rate targets were achieved by all public health centers, except for the contact rate in 2021. The CPPR was the indicator with the lowest achievement, but showed an increasing trend. The results of this research is in line with a study at the public health center in Jember District, which found the contact rate target was not met, but the NSRR target was successfully achieved. The failure to achieve the CPPR indicator at the Denpasar public health center is also in line with research at the Temanggung Public Health Center, where the achievement of the CPPR indicator was still low, namely 0.1%.[19]

Strengths in achieving PBC targets

The availability of human resources at public health centers in Denpasar is considered adequate in terms of quantity knowledge, and competence. Public health centers with good PBC have better strategies for optimizing their human resources. Activities to achieve healthy contact rates are carried out through home visits by larva monitoring staff (*Jumantik*). This strategy is appropriate since during home visit for larva monitoring, the Jumantik is in contact with the household member which are public health center capitation participants. The results of the home visit are then input into the P-Care web system by a special worker committed to entering health visit data. Increasing the achievement of CPPR indicators is carried out by the person in charge of CPPR by collecting data and mapping *Prolanis* for hypertension and diabetes mellitus participants who tend to have their blood pressure and blood sugar under control, then entering them into the P-Care system as a database for *Prolanis* for hypertension and diabetes mellitus at public health centers and being asked to have regular check-ups at the public health center and also monitors CPPR achievement data in the P-Care system periodically every week.

The head of the public health center evaluates the results of the PBC indicator achievements once a week and shared the achievement figures on the public health center's WhatsApp group. Evaluation of achievements is also carried out during mini workshops every month. These findings align with research at the Semarang public health center in 2019, that the human resources involved are adequate in supporting the implementation of CBSC.[8] In line with other research at the North Tapanuli Public Health Center, the availability of human resources in implementing CSBC is quite adequate.[5]

As providers of public services, public health centers need to consider the availability of facilities and infrastructure that can support health services. The availability of service infrastructure, including medical equipment, consumables, computer facilities and internet networks, etc, are adequate at the Denpasar public health centers. Similar to finding at a North Tapanuli public health center study with adequate supporting facilities for implementing CBSC.[5]

An active *Prolanis* club makes it easier for officers to monitor health conditions and drug availability for *Prolanis* participants, especially monitoring blood pressure on hypertension and fasting blood sugar on diabetes mellitus. A study conducted at the Ngaliyan Public Health Center, Semarang City, suggested necessary to increase optimization in the implementation of *Prolanis* so that the achievement of CPPR indicators can meet targets.[20]

All public health centers in Denpasar City have stable internet network access, so when operating the P-Care System, network problems are rare. Maintenance is usually carried out in the middle of the night not to disrupt patient service time. In contrary to this finding, unstable internet connection was encountered in public health centers in Palembang which influence the data input to P-Care System.[21]

Weaknesses in achieving PBC targets

The achievement of the contact rate indicator depends on the commitment of health visit entry officers to the *P-Care* BPJS web system. A person's involvement in work will provide satisfaction with the job and will be committed to the company.[22] The results of this research show that the public health center has sufficient resources. There is a division of tasks, but the commitment of officers to complete the activity of inputting the results of home visits is still lacking. As a result, the achievement of contact rate indicator has not been optimal. Similar finding was observed in a study at Pekanbaru public health centers that human resource commitment has an impact on achieving the CBSC indicator.[15]

The lack of achievement of the contact rate and CPPR indicators is also because of the JKN capitation service rewards do not motivate the PBC team. The incentive system links compensation to performance since reward was based on performance and is usually given as a reward for individual work behavior.[23] This result indicates that services sourced from JKN capitation funds do not motivate the PBC team to complete their responsibilities because there is no difference in reward points for the PBC team and other employees, meaning the service earnings are the same.

The planning function navigates the public health center management to determine the goals and develop strategies to achieve these goals. We found the preparation of activity planning as part of strategy is still limited to setting targets and routine activities, not followed by evidence of detailed steps to achieve the targets that have been set. The public health centers do not produce written documents planning for PBC, and no records of PBC activities that have been carried out, such as a proposed activity plan (PAP), activity implementation plan (AIP), activity framework (AF), or standard operational procedure (SOP) documents of the PBC. As a result, the public health centers yet have an appropriate strategy, nor it has developed a structured pattern or integration of the public health center program in PBC planning. Similar findings from research at Langkat Public Health Center, where written planning documents are still lacking.[7] In line with other research at the Pekanbaru public health center, where unclear, unstructured, and unsystematic strategies with no SOPs influence the achievement of the CBSC indicators.[15]

Medicines are not always available in Denpasar public health centers. There is excess stock in certain drugs, but drug shortages often occur. Sometimes, the medicine stocks run out before the new order of medication arrived. The late arrival of medicines leads to underutilisation until the expiration date arrives. The medicine not timely availability disrupts the healthcare services. However, patients are not encouraged to buy medications from pharmacies because patients already charged for JKN contribution monthly. Moreover, when the shortage of medicine occurred, health centers cannot refer the patients to other facilities since it will increase non-specialist referrals.

Public health centers have JKN capitation funds for drug procurement, but the procedure is complex. The drug planning carried out previously is not fully in accordance with the current conditions of drug needs. Moreover, Denpasar public health centers have not yet being regional public service institution (BLUD), so there was lack of flexibility to allocate their funding to adapt with unanticipated needs, including the needs of medicine supply. This aligns with a study in Depok City, where expired medicines and drug shortages can impact pharmaceutical services at public health centers.[24]

Every health provider should have an information system to support health management. The Denpasar public health centers use the *e-Puskesmas* web system, while the PBC achievement uses the *P-Care* BPJS web system. These two systems became an obstacle because the *e-Puskesmas* web system was yet fully integrated with *P-Care* web, hence it influences the efficiency of the data management. Similar observation was made at the Padang public health centers where the bridging between *e-Puskesmas* and *P-care* system hampered the data management process.[25]

Opportunities in achieving PBC targets

The Refer-Back Program (RBP) is one of the programs dedicated to JKN participants with chronic diseases in a stable condition who still require further care or treatment. Patients who were previously treated in the hospital will be referred back to the PHCF to receive further treatment. Therefore, the optimalization of RBP will lead to an increase in contact rate due to the increase in the number of patients with chronic diseases visiting public health centers. Moreover, RBP could also contribute to the achievement of CPPR by improving the control of blood pressure and fasting blood sugar of *Prolanis* participants.[26]

Threats in achieving PBC targets

CPPR is the indicator with low achievement which is associated with external factors beyond the control of public health centers. These factors include accessibility, family support, and the role of community health workers to encourage *Prolanis* participant visits.[27] Lack of family support will have a major influence on the utilization of chronic disease management programs.[28] The majority of the *Prolanis* participants are elderly who usually need family support to take them to the health center. In the absence of family support, *Prolanis* elderly participants will not be able to routinely attend the health centers. Hence, their access to medication will also be disrupted, resulting in irregularities in taking medicine, which lead to uncontrolled blood pressure among hypertensive patients and fasting blood sugar among diabetes mellitus patients. Similar finding from a study by Rosdiana (2017), that age was one of the obstacles to implementing *Prolanis*.[29] Another study at the Waai Health Center, Central Maluku, also found a relationship between accessibility and family support with *Prolanis* visits.[30]

The COVID-19 pandemic that began in March 2020, which followed by restricted social movement policy to prevent transmission has caused reduction in number of visitors and frequency of visit to PHCF.[31] People were also afraid to visit public health center for fear of getting COVID-19 infection. This caused decreased health centers' visits, both healthy and sick visits. This is also reflected in the BPJS Kesehatan 2020 data that during the COVID-19 pandemic, that February compared to May 2020 data showed a decrease in the fulfilment of CPPR indicators by almost 50% throughout Indonesia. This was due to a decrease in the contact rate of JKN participants to PHCF by 42%.[32]

The limitation of this study is that it did not involve external informants such as JKN patients using public health center services, including hypertension and diabetes mellitus patients, *Prolanis* participants, BPJS Kesehatan, and the Denpasar District Health Office. Therefore, the internal and external environmental factors of PBC achievement only reflects the perspective of public health centers. This should be considered to be explored in future studies.

CONCLUSION

The PBC achievement of public health centers in Denpasar from 2020 to 2022 have not been optimal, with 100% PBC payments not yet being fulfilled in most public health centers. The CPPR and some contact number indicators have not been achieved. Internal factors that support the achievement of PBC were adequate human resources, adequate service infrastructure other than medicine, an active *Prolanis* club, and a supportive P-Care web system, while the weaknesses were no PBC planning documents, lack of commitment from health visit entry officers in the P-Care web system, improper rewards system, medicines supply, and bridging between information system. The opportunity to improve PBC was the *Prolanis* referral back program, while threats were patients' social conditions, the COVID-19 pandemic, and requests for non-specialist patient referral.

Public health centers should accommodate the strength and opportunities to improve PBC achievement and found strategies to minimise threat and overcome the weaknesses. The transformation of public health center as regional public service institution (BLUD) is also essential in overcoming weaknesses by enabling flexibility in funding allocation to accommodate unanticipated needs, including the need of medicine supply. Future study should also accommodate perspective of other stakeholders including JKN participants and BPJS to gain a more comprehensive understanding.

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AUTHOR CONTRIBUTION

AR, designed the research, carried out data collection, data analysis, wrote the first draft and edited the

manuscript. PPJ and NMSN, critically reviewed the study design, provided feedback on data analysis and edited the manuscript

CONFLICT OF INTEREST

All authors declare no conflict of interest.

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