

# Delphi Approach to explore ways to optimize case manager services in inpatient wards of Sanglah General Hospital



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## ABSTRACT

**Background and purpose:** Case manager services in inpatient rooms have gained popularity in many hospitals in Indonesia, however there are challenges in its implementation. This study aims to explore ways to optimize the characteristics of the case manager, case management practice and outcome of the case manager in cases in inpatient wards based on the Sanglah Hospital standards.

**Methods:** The study utilized a two-stage Delphi study design, started with a qualitative data collection and followed by a quantitative survey. Data collection was done in May-June 2020 based on the concept of case manager characteristics, practice and outcomes. The qualitative data collection through in-depth interviews involved 9 key informants. It aimed to explore case manager services based on qualifications, competencies, ethical standards, workload, hierarchy and guidelines, implementation of case management and indicators of effectiveness of case management at Sanglah General Hospital. The results of the in-depth interviews with thematic analysis informed the Delphi survey instrument development. The Delphi survey aimed to

generate agreement on the characteristic of the case manager, case management practice and outcome of the case manager among 21 expert panelists (case managers) in the inpatient wards of Sanglah Hospital. This Delphi survey was conducted in 3 rounds, the results were analyzed based on the median value and quartile deviation (QD).

**Results:** The three rounds of the Delphi survey showed that there was an agreement regarding the qualifications of the case manager, competency development, mechanism for appointment and placement of case managers, case manager guidelines, organizational structure, job descriptions and authorities, information of the presence and role of case managers, screening indicators according to characteristics of inpatient cases, case management target measurement tools, case manager service evaluation indicators as well as the activity feedback loop.

**Conclusion:** Optimization of the case manager service should focus on aspects of human resources, developing guidelines and work systems as well as evaluation indicators and feedback mechanism.

**Keywords:** Case manager, case management implementation, person-centered care, delphi

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## INTRODUCTION

The current health care paradigm has been grounded on the patient centered care. This perspective emphasizes on the active role of patients and their families in the decision-making process related to their health.<sup>4</sup> To enable the effective team work between patients, their family and professional care providers (PCP), there is a need for a care model that ensure coordination and integration of care, one of such is the case manager.<sup>1-5</sup> Case manager functions as a coordinator, facilitator, advocate (negotiator), financial manager, planning manager, problem solver, counselor and educator in providing inpatient care.<sup>5,6</sup> The patient centered care will improve the quality of services and lower the burden of health care service facilities with the help from effective case manager.<sup>6</sup>

Sanglah Hospital as one of the referral centers has had case manager services since 2017, in

accordance with the demands from the Hospital Accreditation Committee (*Komite Akreditasi Rumah Sakit* (KARS)). The role of the case manager is to provide continuous service and improve the quality of service by ensuring that the patient care process in the inpatient room until their discharge from the hospital is in accordance to the hospital's standards. In short, the case manager is a quality and cost control team that maintain the overall health care service quality.<sup>3,5,7-9</sup>

The implementation of case management by case managers in the inpatient room of Sanglah Hospital is currently based on the general case manager guidelines from KARS. The manual does not specifically describe how case management should be implemented in each inpatient room with different case characteristics. As found in a study conducted in Los Angeles, it was shown that case management in palliative care has a high degree of variability in regards to the choice of case

management practices.<sup>10</sup> In Indonesia, research related to the implementation of case management shows the role of case managers are limited to the patients' clinical condition and care. This was indicated by the use of Clinical Pathways (CP) as monitoring instrument in the provision of therapy by specialist doctors at Koja Hospital Jakarta, in different cases such as stroke, cesarean section, surgery without complications and typhoid. The case manager uses the CP to monitor doctor compliance in filling the CP as well as to determine variations in therapy.<sup>11</sup> The same was found in Anutapura Hospital Palu where the case managers used the CP to reduce variations in handling of stroke patients they monitored.<sup>12</sup>

Our preliminary study found in regards to their competency, only three of the 21 case managers had received a case manager workshop. In addition, the Sanglah Hospital has not established any indicators to determine the effectiveness of case management services because there has been no formal reporting system on the results of case management from the case managers.

Outcome of case management will depend on the personal case manager's abilities both from their personal competencies, the ability to carry out their roles as well as their functions as case managers and the existence of evaluation system. A study in Jakarta showed that non-optimal function of competency planning and evaluation of case manager outcomes will affect the case management implementation.<sup>13</sup>

Sanglah General Hospital continues to strive to improve their case management services by increasing the role of case managers such as multidisciplinary coordination in team meetings but the aspects affecting the implementation and outcome of case management have been overlooked. Against this backdrop, a study was conducted to explore development of a case manager service system that would be applied in the inpatient wards according to the standards of Sanglah Hospital. This study also explored on solving the problems faced in order to optimize case manager services in the inpatient wards of Sanglah Hospital based on the characteristics, practices and outcomes of case management in accordance with the standards of Sanglah Hospital. The agreement was obtained from the expert panels, in this case the case managers in the Sanglah Hospital through a Delphi Survey.

## METHODS

### Conceptual framework for case management

This study refers to the framework of the case management from The British Association of Brain Injury and Complex Case Management (BABICM)

which focuses on the systematization of characteristics and case management practices to influence case manager outcomes. The characteristics component is influenced by professional practice and code of ethics. While, the professional practice component consists of the competence and workload of the case manager. The case manager code of ethics is the ethical and legal boundaries that the case manager has in accordance to their authority and job descriptions as written in the guidelines and organizational structure.<sup>14,15</sup>

The professional practice of case managers encompasses communication and negotiation of care to PCP and patients, assessment based on screening and risk identification, priority and goal target setting, managing cases as well as implementing management principles and leadership functions. The case manager is also obliged to document the activities from screening until the case management is considered complete. In addition, the case managers also need to monitor and evaluate the results.<sup>2,5,6</sup> Therefore, in order to assess the effectiveness of the case manager services, hospital must establish indicators to measure the impact on patients or their families as well as the hospital. These indicators can be reflected on the patient's clinical condition or outcome and their health care cost or hospital billing.<sup>8,9,15,16</sup>

### Study design and data collection

The study utilized a two-stage Delphi study design with the data collection conducted in May-June 2020 at Sanglah General Hospital. This Delphi was preceded by a qualitative research in the inpatient wards that treat acute and chronic patients to explore case management implementation in the inpatient wards that cater different case characteristics. Acute patients ward serves patients who enter through the emergency department and are treated in rooms that require close observation (the MS room). While the chronic patients ward serves cancer patients (Angsoka 2).

There were 9 key informants participated in the qualitative research and they were selected purposively. The inclusion criteria for the informants were: aware of and understand the case management services and engaging with case managers in the inpatient wards. The key informants in this stage were case managers, the medical service division, the chief of wards, the doctors who were responsible for the patient's care and the patient's family. The indepth interview guideline for the medical service division and the chief of wards explored themes on the background information, competency, ethical standards, workload, hierarchy and guidelines, implementation of case management, indicators

used to assess the impact of case management implementation. Whereas for the doctors who were responsible for the patient and the patient's family, the interview guide contains the implementation and impact of case management.

Subsequent to the qualitative study, three rounds of Delphi survey were conducted. The respondents for this survey were all case managers in all inpatient wards of Sanglah Hospital. In total of 21 respondents were recruited for this study. The inclusion criteria were the case manager who is in charge of the inpatient wards and has been appointed by the director of Sanglah Hospital based on the 2019 Decree (SK) and has been working more than 3 months as a case manager and willing to take part in this study for the entire round.

The survey aimed to obtain agreement on the characteristics of the case manager, practice and outcome of case management in all inpatient rooms of Sanglah Hospital. The Delphi questionnaire was developed based on the results of qualitative interview. The Delphi questionnaire used a Likert scale 1 to 5 on each statement from strongly disagree (score 1) to strongly agree (score 5). The Delphi survey contains statements regarding the concept of characteristics, practices and outcomes of case management. The characteristic aspects consist of qualifications based on educational background, competence, mechanism of case manager appointment, availability of human resources, concurrent positions, assignment area, case load and case manager guidelines. Aspects of management practice consist of information on the role of the case manager, authority, targets and screening indicators. While the output aspects include of indicators for case management results evaluation for patients and hospitals and feedback on case manager services. Prior to the second and third rounds of Delphi, expert panelists were given feedback on the results of the first and second rounds of Delphi. Likewise, in the third round, the expert panelists received feedback on the final agreement resulted from the third round.

### Data analysis

Thematic analysis was conducted for results from the in-depth interviews. Predetermined codes were established based on themes related to characteristics, practices and outcomes of case management. Further analysis was carried out to find the relationship between themes and sub-themes. The results of the analysis of qualitative data were utilized to develop the Delphi survey instrument. Meanwhile, results from the quantitative study were analyzed using IBM SPSS version 20.0 software to obtain the median (Md) and interquartile range

(IQR). The Delphi survey analysis used the median value and quartile deviation (QD) to determine agreement. Quartile Deviation (QD) was obtained by calculating it manually using the formula:

$$\text{Quartile Deviation (QD)} = \text{Interquartile range}/2.$$

A value of  $QD \leq 0.5$  indicates high agreement,  $QD > 0.5$  or  $QD < 1$  moderate agreement and  $QD \geq 1$  indicates no agreement. The median value  $\geq 4$  indicated high level of importance of the statement and conversely the median  $\leq 3.5$  indicates low level of importance of the statement for the case managers.<sup>17</sup>

### Research ethics

This research has received an ethical approval from the Research Ethics Committee of the Faculty of Medicine, Udayana University/Sanglah General Hospital Denpasar with Number: 606/UN/14.2.2.VII.14/LT/2020 dated March 13, 2020 as well as research permission from the Director of the Sanglah General Hospital Number: LB.02.01/XIV.2.2.1/13716/2020 dated April 16, 2020. Before each data collection, the researcher had provided an informed consent form to the key informants and respondents of the Delphi survey. The research results are kept confidential.

## RESULTS

### Indepth interviews

Interviews were conducted with nine informants from three groups namely the case managers, informants related to case managers in selected inpatient wards (PCP, chief of wards, head of outpatient division) as well as the patient and the patient's family. The patient was chosen from the chronic care ward of Angsoka, while the patient's family was chosen from the acute care ward of MS room. The age range of the informants was 30-49 years old, with the highest education level being magister level and the lowest being elementary school level. Details of the key informants' characteristics are presented in [Table 1](#).

### Case manager characteristics

#### Guideline and organizational structure

Results showed that specific case management implementation guide was absent. The present guidelines are based on the KARS (Hospital Accreditation Committee) and do not clearly depict the case manager's structure and hierarchy, qualifications and competencies, job descriptions, authority, case management practices that are tailored to the characteristics of cases in the inpatient wards, neither the indicators of the effectiveness of case manager services and flow of reporting activity.

**Table 1. Key informants characteristics**

Informants' Code	Age (yrs)	Sex	Education	Position
CM 1	48	Female	Bachelor	Case manager and coordinator
CM 2	44	Female	Bachelor	Case manager and outpatient doctor
D1	40	Female	Magister	Specialist
D2	37	Female	Bachelor	Specialist
Karu 1	43	Male	Magister	Chief of ward
Karu 2	42	Female	Bachelor	Chief of ward
YM	49	Female	Magister	Head of the outpatient division
Ps 1	30	Male	Senior High School	Patient of Angsoka 2 ward
Ps 2	48	Female	Elementary School	Patient's family from MS ward

*“from the KARS, there are guidelines...however from the Sanglah Hospital there has been no specific guideline...” (CM 2)*

To date, the organizational structure or the hierarchy of case managers in the inpatient care system has not been clear. Despite the statement that case managers are directly responsible to the Director of Medical and Nursing Services, confusion arises with other staff in their work unit when they have to provide case management service. This happens because the case manager is not considered as a distinct profession. In addition, the case managers themselves often hold multiple positions that affect their authority in negotiating and coordinating the case management. Moreover, the job descriptions listed in the hospital's case manager guide are still very general.

*“The structural organization has not been clear. Who is our superior? Because in the structure, it is stated that we are responsible to the Medical and Nursing Director and then the head of division that's what is written in the Decision. But then, the division issued their own decision letter, stating that we should answer to the head of installation.... So, it has not been clear who we should answer or responsible to, thus the reporting flow has also not been clear in the organizational structure” (CM 2)*

*“Ideally, case manager is a separate profession,... for example the PPI (Infection Control Program) is a separate unit right...so that they can independently manage their task, there is one specific case manager unit...” (YM)*

*“In regard to job description, we should develop a more specific guidelines which include the reporting forms for our superior. It should include the indicators that we should monitor and evaluate*

*as an outcome for the case manager service. For example, the number of cases that refuse medical care or intervention, LOS (length of stay)...” (CM 2)*

### Qualification and competency

Sanglah Hospital does not yet have a clear case manager designation mechanism where the case managers often have other main tasks or concurrent positions. In addition, the designated case managers are often not certified.

*“...Based on the Decree regarding case manager, the case manager designation is based on current position as chief of wards or wards' coordinators, because the basic assumption that they are used to managing cases in the inpatient wards...”(YM) ...” I don't have any, I need that too, because without the training and certification, I will be considered as “fake” case manager. I mean, I work as a case manager, but without proper training and certification, I can be called a fake” (CM 2)*

Based on the KARS guideline, case managers need various other skills to be able to carry out their responsibility. However, in practice case managers improve their competence in a self learning manner, for example for the skill on effective communication. This was admitted by the hospital management, because not all case managers received appropriate trainings.

*“Guideline for case manager has laid out the ideal competencies and trainings that a case manager should have, however in so far the hospital can only afford to support training and workshop about case manager only, that's all. There are some who participate...” (YM)*

*“Additional trainings such as effective communication with other staffs or professions, but the hospital has not provided us with such training, so we learn it ourselves ...” (CM 1)*

### Workload

Limited human resources resulted in the case managers holding multiple positions and having to serve in two inpatient rooms. The workload calculation is not based on the target number of cases, because holding multiple positions making it difficult to determine the case manager performance. This also caused non optimal risk screening and identification of patient. The case managers have to improvise by developing their own screening indicators tailored to the characteristics of cases in the inpatient room.

*“However, our human resources are limited, so that we asked them to hold multiple position as long as they don't have to provide medical or nursing care...” (YM)*

*“For screening, I observe the ward condition. I calculate the number of doctors, the diagnosis, the case ..... I am so overwhelmed” (CM 2)*

### **Case management professional practice Case managers information, role and leadership function**

Holding multiple positions has caused problems in the case management practice. It was reflected on the information of the case manager's role and function. Moreover, the leadership function is also difficult to implement since their authority has not been explained in detail in the case manager guidelines.

*” So far, there is a decision letter with the name of the case managers, that is all. However, a thorough information from the management to all hospital staffs has not been optimal” (CM 1)*

*“In practice, we often find the MOD (Management on Duty) .... maybe that's it, the MOD then appointed as case manager” ( D1)*

*“Nah, that's it, regarding authority it has not been clear because of the non-specific job description. Hence, when we need to negotiate the case and hit the wall during coordination, we resorted to the division. For trouble shooting, as long as there is a standard operating procedure (SOP) we tried to solve it in accordance to the SOP but if there is no SOP, we do not dare to make any direct decision” (CM 1)*

### **Case management outcome Indicators for case manager services based on patient outcome**

Sanglah General Hospital does not yet have indicators to evaluate the effectiveness of the case manager service. Reporting of case manager activities was absent because it is unclear to whom they should report and is not included in the case manager guideline. However, the case management activities are documented in the patient's medical record. The case manager monitors several indicators namely the progress of therapy according to the plan of care (POC), complications arising from hospitalization and delays in service.

*“We monitor the clinical condition such as the progress of therapy, improvement in the patients' condition especially in patient with complex condition, complication from the treatment ... is there pneumonia, like that” (CM 1)*

*“Actually, for the hospital as it is mentioned in the guidelines, case management services are very beneficial. In the guidelines it is stated that they function as quality control and cost control, but so far, we have not been able to evaluate their performance, for example, the compliance with*

*CPW, compliance with the use of the national drug formularium. We have conducted the CPW or national formulariums evaluation for sometimes, but it is in general. I mean it doesn't appear that these activities are conducted as part of the case management task, right?” (YM)*

### **Feedback loop of case manager services**

The patients do not understand the benefits of the case manager service and does not even know if the person concerned received any case management service. Hence, there are still doubts from the patients regarding the treatment carried out in the hospital. While on the other hand, team meetings at the installation and management levels to find solutions to problems faced by case managers are rarely done.

*“yes.....as a usual care” (Ps 1)*

*“Maybe once a month case manager meets all heads of ward in order to get varied types of cases” (Karu 1)*

### **Delphi survey results**

The questionnaire in the Delphi survey consists of statements obtained from the themes arised in the in-depth interview analysis. The statement in the questionnaire refers to the characteristics of the case manager, professional practices and outcomes of case management as well as the problems faced in reaching the agreement.

### **General characteristics of case managers in Sanglah Hospital**

Most of the case managers are nurses/midwives (80.95%). Only 4.8% of case managers served without concurrent positions, while the rest have main tasks other than being a case manager and more than one third served two assignment areas. Details of the case managers characteristics are presented in [Table 2](#).

### **Agreement on concept of case manager characteristics, professional practice and case management outcome**

There were 26 statements given to 21 case managers as expert panelists for the entire rounds of the Delphi survey. The statements consisting of concepts on characteristics (11 statements), case management practices (6 statements) and case management outcomes (9 statements). It took three rounds of Delphi survey to reach agreement on all statements from the expert panelists. With the agreement reached in the third round of the Delphi survey, the expert panel was ended.

[Table 3](#) shows the Delphi results based on the concept of characteristics. The first round Delphi

**Table 2. Demographic characteristics of case managers in inpatient wards of Sanglah Hospital**

Characteristics	Frequencies (n=21)	%
<b>Sex</b>		
Male	2	9.5
Female	19	90.5
<b>Education</b>		
Diploma in Nursing	1	4.8
Diploma in Midwifery	1	4.8
Bachelor in Nursing	14	66.6
Medical Doctor	3	9.5
Magister in Ergonomy	1	4.8
Magister in Nursing	2	9.5
<b>Concurrent task in addition to case manager</b>		
Chief of ward	10	47.6
Outpatient clinic doctor	3	14.3
Coordinator	7	33.3
Case manager	1	4.8
<b>Area of service</b>		
1 inpatient ward	14	66.7
2 inpatient wards	7	33.3
<b>Training as case manager</b>		
Workshop case manager	3	14.3
Information on case manager	6	28.6
None	12	57.1
<b>Age group of case manager</b>		
40-49	11	52.4
50-59	10	47.6
<b>Duration of being case manager</b>		
<1 year	13	61.9
>1 year	8	38.1

consisted of 11 characteristics related statements. From the concept of case manager characteristics, high agreement ( $QD \leq 0.5$ ) was obtained with a high level of importance ( $Md \geq 4$ ) on the statements regarding educational background, required training, case manager appointment mechanisms, criteria for distribution of assignment areas, availability of human resources and case manager guidelines. While the statement regarding the workload, namely the assignment area in two inpatient wards and the target number of cases managed, received only moderate agreement and the level of importance was high ( $QD \geq 1$  and  $Md \geq 4$ ). Statements about case managers can hold concurrent positions did not received any agreement ( $QD > 1$ ) and had a low level of importance where the median value was  $\leq 3.5$ .

In the second and third rounds of Delphi, statements which received moderate agreement and without agreement in the first round of Delphi were repeated. These statements were the assignment area, target number of cases and holding concurrent

positions. The overall results of the first, second and third rounds of Delphi were fed back to 21 case managers or the expert panelists. The case managers were allowed to provide different answers in the second and third rounds. There were five additional statements in Delphi round two related to other training required by case managers as a result of open questions in the Delphi round one and all of them received high agreement and a high level of importance ( $QD \leq 0.5$  and  $Md \geq 4$ ).

The Delphi results on the concept of professional practice and case management outcomes are shown in Table 4 and Table 5. High agreement with a high level of statement ( $QD \leq 0.5$  and  $Md \geq 4$ ) was obtained in the first round of Delphi so that no repetition was carried out in Delphi rounds two and three. Agreement in case management practice was obtained in terms of the need for information of the presence and role of the case manager for both PCP and patients. The case managers agreed on the use of several indicators regarding the clinical evaluation of patients and the hospitals as an indicator for case management outcome. The case manager also agreed on the need for feedback loop on case management from both the hospital and the patient. Following are Delphi's results regarding case management practices and outcomes:

## DISCUSSION

This study was conducted to optimize the characteristics of the case manager, professional practice and outcome of case management. The Delphi survey found that in order to optimize the characteristics of case managers, it requires improvement in the number of human resources and their competencies. Development of case manager guidelines, work system, and evaluation indicators are pivotal to optimize case management practice. In addition, these indicators are important for the evaluation of case management outcome on patients and the hospitals.

Sanglah General Hospital is one of the referral hospitals with complex resources and types of patients. Integrative service care system that enables coordination of the services provided by professional care providers to the patients is crucial. This system should also ensure sustainable care that is in accordance to the hospital accreditation standards. The Sanglah Hospital has started to implement case management in the inpatient wards for about two years. In its implementation, problems were found both in terms of the characteristics of the case manager hence it affected their case management practices. To date, the hospital does not have any instruments or indicators for assessing the impact of case management service on patients

**Table 3. Delphi results on the concept of characteristics**

No	Statement	Delphi					
		Round 1		Round 2		Round 3	
		Md	QD	Md	QD	Md	QD
<b>Education background for case manager</b>							
1	Nurse can be a case manager in the inpatient wards of Sanglah Hospital	4	0.4				
2	GP can be a case manager in the inpatient wards of Sanglah Hospital	5	0.5				
<b>Competency and appointment mechanism for case manager</b>							
3	Trainings needed for case manager in the inpatient wards of Sanglah Hospital to improve their competencies are:						
a.	Training as case manager and standard as a case manager	4	0.5				
b.	Training for effective communication	5	0.5				
c.	Case characteristics for patients based on the inpatient wards the case managers serve	5	0.5				
d.	Training on patient flow of care	4	0.5				
e.	Training on the case manager work flow	5	0.5				
f.	Training on administration to claim for the hospital bill	4	0.37				
g.	Training on scope of the patients' cost of care	4	0.37				
h.	Training on complaint management			5	0.5		
i.	Training on home care for palliative patients			4	0.0		
j.	Training on excellent care service			4	0.25		
k.	Training on accreditation standards			4	0.5		
l.	Training on case management documentation			4	0.5		
4	A clear mechanism for appointing of a case manager at Sanglah Hospital	4	0.00				
<b>Workload, human resources availability and case manager guidelines</b>							
5	Case managers can be appointed to serve two inpatient wards	3	1	3	1	2	0.5
6	Distribution of assignment areas for case managers in the inpatient wards should be based on the number of patients and case complexity	4	0.37				
7	Case manager can hold concurrent other position	2.5	1.37	2.5	1.37	2	0.0
8	Case managers should be provided with monthly case management target	4	1	4	1	2	0.0
9	The number of case managers should be increased	4	0.5				
10	Sanglah Hospital should have a specific case manager guideline tailored to the hospital needs and should reflect on the organization structure, job description and authorities	4	0.0				

or the hospital.

The case manager guideline referred in Sanglah Hospital still based on general guidelines from the KARS. This guideline ideally should contain job descriptions, authorities, qualifications, competencies, workloads, hierarchy and evaluation indicators for measuring the effectiveness of case management services. The case managers expect that the hospital has guidelines that are tailor made specifically based on the focus of service and the characteristics of patients being treated in the inpatient ward. Feedback loop system is also important for case manager services from both the

patients and hospital management.

Hospitals should determine their own case management concepts that are applicable for their needs, objectives and focus of service.<sup>25,28</sup> The concept should also include the organizational structure, interprofessional interaction mechanisms, the health service financing system, the number of human resources (HR) available and the pattern of HR placement, the use of technology and the availability of PCP specialties. All staffs must understand their respective roles, respect the roles of other professions and understand the reasons for the concept selection.<sup>18-20</sup>

**Table 4. Delphi results on the concept of professional practice in case management**

No	Statement	Delphi					
		Round 1		Round 2		Round 3	
		Md	QD	Md	QD	Md	QD
1	Information of case managers and their role in the inpatient wards to PCP and patients by the hospital management and their designated instalations	4	0.0				
2	Case manager should be more assertive toward the doctors who are responsible for the patient whenever they negotiate about case management	4	0.37				
<b>Screening</b>							
3	Limited time and holding concurrent other position hinder the case managers' screening capacity	5	0.5				
4	Case manager should be able to use practical guideline for screening: LOS, number of doctors and patient diagnosis to save time.	4	0.37				
5	Case manager should have an instrument to measure case management target based on the agreed goal	4	0.37				
<b>Role of case manager</b>							
6	A case manager should						
	a. Facilitate team meetings	4	0.5				
	b. Arrange patient flow	4	0.5				
	c. Check medical record for completeness	4	0.37				
	d. Monitor the doctors' targets on therapies given	4	0.0				
	e. Follow up the patient until their follow up visit is completed	4	0.5				

Case manager competencies affect the case manager's ability to conduct their professional practice. Case management involves competencies regarding clinical cases, management, administration as well as communication. In the hospital case manager guide it is stated that case manager is a distinct profession. However, in practice, a special certificate as a case manager and the credential process according to the educational background were absent. Despite the fact that certification is needed as a legal ethic foundation to work as case manager.<sup>2,21-23</sup> In other countries, this certification enables the case manager to obtain different compensation, which might improve their performance. Moreover, there is a case manager organization which requires them to go through credential process before becoming a case manager.<sup>22,27,29</sup>

Some of the problems stem from ineffective communication. As was found in research conducted at Bangli Hospital where there was ineffective communication between service providers and patients or patient families.<sup>24</sup> Thus, case manager should be able to communicate effectively. This skill can be obtained from training. The case manager should be able to embrace all components, and improve their communication

skills, report each activity so that they can show the benefits of the services they provided to their institution.<sup>21,24,31</sup> Case managers must pay attention to the cost-effectiveness of the cases they managed. When the case manager is faced with a conflict between the target from a patient with a target from the hospital or a target from the hospital with a target from PCP, then the resolution of ethical conflicts related to patient care will greatly depend on their communication skills. In this case, the case manager's ability to advocate and negotiate their case.<sup>8,15,30,32</sup>

The case manager workload will increase when the cases are complex, urgent and unstable. However, the number of cases handled is often not associated with increased in workload.<sup>33</sup> It has been difficult for health services to determine the target number of patients the case manager should handle. The same thing happened in Sanglah General Hospital where the hospital had difficulty determining the target number of cases managed. This is partly due to the fact that all case managers in Sanglah hold concurrent positions and case manager was not considered as a distinct profession. In Pennsylvania, case manager is a profession and has its own organization where the organization determines the caseload to assess the effectiveness



**Table 5. Delphi results on concepts of case management outcome**

No	Statements	Delphi					
		Round 1		Round 2		Round 3	
		Md	QD	Md	QD	M	QD
<b>Indicators for patients' evaluation</b>							
1	Clinical monitoring of the case manager service to patients can be monitored from the patient's clinical progress	4	0.0				
2	Clinical monitoring of the case manager service to patients can be monitored from the complications suffered due to or during treatment in the hospital	4	0.0				
<b>Indicators for hospital evaluation</b>							
3	Monitoring of case management outcome for the hospital can be monitored from:	4	0.37				
	a. The patient LOS						
	b. The use of drugs within or out of the national formulariums	4	0.0				
	c. Diagnostic support	4	0.0				
	d. Delayed services for the patients	4	0.37				
<b>Feedback</b>							
4	The need for regular meeting between the case manager and chief of ward to discuss issues related to case manager service	4	0.37				
5	The need to hold regular meetings between the case manager and hospital management to discuss the problems faced during case management	4	0.0				
6	The need for survey among patients regarding the case manager service	4	0.00				

Note: Md= Median, QD=Quartile Deviation

of the case manager. A case manager is assigned a caseload of 115-120 patients per month.<sup>34</sup>

The fact that most case managers in Sanglah Hospital are holding other concurrent positions does not necessarily affect their workload. Most case managers are the chief of the inpatient wards who are accustomed to handling problems that occur in their wards. However, the dual role causes problems whenever case managers should inform their role as case managers and carry out screening at the beginning of patient admission. This causes non-optimal performance of their task as case manager because they also provide medical care as PCP, thus they allocate more time to conduct their main tasks. Holding multiple positions for example as a nurse or chief of wards and as a case manager at the same time also causes confusion when they are on duty, so that it is difficult for them to introduce themselves to other PCPs or the patients and their families. This is the reason that the role of case manager is less well known by PCPs or patients.

The fact that the case managers are holding multiple positions in addition to the lack of effective communication skill impedes the case managers ability to advocate for their case. Advocacy plays an important role in case management professional practice. The case managers should be able

to advocate for the most cost-effective care in accordance to the ethical standards when dealing with patients or PCPs. This understanding of code of ethics is related to specific trainings for as a legal case manager.<sup>2,22,23,30</sup> Qualitative research at Banjarmasin Hospital found that the appointment of a case manager from the chief of wards made them unable to optimally conduct their role as a case manager. Thus, clear mechanism for the appointment of a case manager is crucial for them to function optimally.<sup>35</sup>

The caseload calculation varies widely and becomes complex because case management takes into account the clinical aspects and complexity of the case. The case manager will be able to work optimally when the number of caseloads given is adjusted to the complexity of the case and task performed.<sup>2,33</sup> The total caseload managed can not be associated with the case manager performance. The many roles played by case managers make the objectives of case management cannot be explained explicitly. Likewise, when nurses are involved in case management, their role as case manager becomes less clear.<sup>36</sup>

The limited time that the case managers have regarding their dual role, working hours and the number of patients hospitalized causes

them to develop their own screening guidelines. For example, the length of stay or the number of doctors available in the wards. One of the screening indicators has not been utilized by the case manager is the discharge planning. With a discharge planning, the case manager can ensure the quality of services provided and the standard of outcomes.<sup>37</sup> The case manager is expected to be able to determine the objectives or targets of the case management as well as the strategies to achieve the objectives and outcomes. Case managers experience difficulty when they have targets based on unclear plan of care from the doctor in charge of the patient. Ideally, the case management target should be determined from the agreement between case manager and patient. This target should be realistic, achievable and has a time frame.<sup>38,39</sup>

In every work plan there should be indicators to measure the impact of the activities. However, until now the hospital has not determined the indicators for assessing the impact of case management service, for example the implementation of a team meeting. This rooted back to the fact that most case managers hold multiple positions so that their role as a case manager is not very visible. There are several general indicators that can be used to evaluate the outcome of case management such as clinical status, patient satisfaction, patient involvement and compliance to the therapy as well as the total cost savings in patient care. Assessment tools are needed to measure the effectiveness of the case management service.<sup>9,34</sup>

The agreement obtained from a panel of case managers based on the problems found related to the optimization of case manager services from the aspects of case manager characteristics, professional practice and case management outcomes is expected to improve the quality of service provided to the patients. Case managers are able to facilitate the needs of patients and their families related to the inpatient care process, where patients are more familiar with the presence and role of the case manager. This will affect patient satisfaction to the services provided by the hospital. The implementation of case management is also expected to increase the efficiency and utility of the hospital in providing services to patients without compromising the quality of service. Efficiency will also streamline the hospital's financial cycle by minimizing constraints in service, financing claims and providing cost effective services.

#### **Study limitations**

It has to bear in mind, that the agreement obtained through the Delphi survey depends on the expert panelists and agreement obtained could

be a compromise agreement. Therefore, in order to substantiate the findings further research is needed, especially related to workload to measure the performance of the case manager in Sanglah Hospital inpatient care. In addition, this research only covers a small scope of service provided in the inpatient wards at Sanglah Hospital. Thus, strategy to optimize case management service agreed upon in this study was only obtained from expert panelists from these wards at Sanglah Hospital. The results of this study may not reflect case manager services in other units nor in Sanglah Hospital in general.

#### **Study implications**

Strategy to optimize workloads with a limited number of human resources is also needed. This study also shows that case management practices carried out have been focused on attempts to overcome problems in services to reduce the burden of health services. However, the main goal of patient centered care has not been achieved due to non-optimal case manager service where the case manager interacts with the patient to understand the needs of the patient. Patients have not played an active role in the treatment process because they do not understand the role of the case manager. With this research, Sanglah Hospital with its limited case manager personnel is expected to develop a practical indicator for screening as well as indicators for case management evaluation which enable case managers with their limitations to work optimally.

#### **CONCLUSION**

Sanglah General Hospital does not have a specific guidelines for case manager that regulates the qualifications and mechanism for the appointment of a case manager, organizational structure and hierarchy, job descriptions, authority, competency development and more specific guidelines regarding case management practices tailored to the characteristics of cases in the inpatient wards. Limited human resources resulted in an increase in the case manager workload where they hold multiple positions and assigned to two inpatient wards. This hinders the case management professional practices. On the other hand, case managers' performance cannot be determined solely based on the number of cases managed. The hospital has not yet established both clinical and hospital indicators to evaluate case manager services outcome that accompanied by feedback from both patients and hospitals on the case management service provided.

Further research is needed to obtain agreement from expert panelists regarding the optimization

of case manager services which should reflect on services in other units. The future studies should help us to understand about how hospitals are able to create case management toolkit to overcome their limitation and the relationship between case manager and patient or patient's family.

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## Authors Contribution

AS developed the research plan, collected and analyzed data as well as prepared the manuscripts. PJ contributed in the development of research concept and design, assisted in data analysis, provided suggestions and input to improve the manuscript. SN contributed in providing advice, input and improvement for the manuscript.

## Conflict of Interest

The authors declare no conflict of interest

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