Need-Based Guidance Planning to Improve The Competency of Anesthestic and Intensive Therapy Residents

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Abstract—The need for ICU control is very important for Anesthesia and Intensive Care residents. Given the existence of an Anesthesia and Intensive Therapy doctor in a hospital, it is very necessary to provide emergency services in the ICU. Resident must be able to learn to achieve competency targets through good and appropriate guidance. The research objective describes needs-based guidance planning to improve the competence of residents of Anesthesia and Intensive Therapy. This research is a qualitative research using the Case Study method. The research subjects were residents of Anesthesiology and Intensive Therapy who served in the ICU RSUP Kariadi Semarang. The results of the first study showed that 78.2% of the mentoring planning was carried out by the lecturer/doctor supervisor or assistant according to the curriculum and study program learning plan; 39.7% of residents are actively involved according to the need for understanding competence; 68.3% of residents are actively involved in planning good practice emergencies in the ICU. Research I was conducted at the initial residents of stage I. The results of the second study showed that 37.2% of the planning of mentoring was done by the lecturers themselves; 63.3% of residents are actively involved according to the need for understanding competence; 79% of residents are actively involved in planning good practice emergencies. Research II was carried out on residents in the middle and near the end of stage I and several residents of stage II. Research recommendations are aimed at study programs and related parties to facilitate needs-based guidance planning in an effort to increase the competence of residents of Anesthesia and Intensive Therapy.

Keywords: planning, mentoring, needs-based, anesthestic, intensive therapy

I. INTRODUCTION

The Intensive Care Unit (ICU) is a treatment room with a high risk of patient death. Personal research (2012), shows that in a period of 2 years, 103 patients were recorded as having undergone carniotomy which was then treated in the ICU, 51 patients died and 52 patients were alive. There were two main causes of death for these patients, namely Sepsis Shock (33%) and Respiratory Failure (23.5%). Research by Supriyatin, Wulandari, and Ekayanti (2014), the mortality rate in the ICU Dr. Kariadi from January to April 2012 about 24.23% (79 people), of which 75.9% died after being treated for > 48 hours and 8.8% died due to respiratory failure. Suryaty (2013) explained that the mortality rate in the ICU Dr. Sardjito in 2010 about 31% (233 of 742 patients), 8% of them died before being treated for 48 hours and 23% died after being treated for more than 48 hours.

The relatively fast and high number of patient deaths indicates that the ICU as an emergency care patient room must be accompanied by adequate equipment in sufficient numbers. In addition, the ICU must also be equipped with responsive and tough personnel. Quick and precise action of nursing / medical services is needed to save patients. Busy levels and high standards of nursing and patient care require high-tech ICU management and equipment. Moreover, the patient's high risk of death. Decree of the Minister of Health of the Republic of Indonesia number 1778 / XII / 2010 states that the ICU personnel consist of a specialist doctor as a consultant (who provides services whenever needed), and a 24-hour doctor on duty with certified cardiac pulmonary resuscitation capabilities, basic living and advanced life support. ICU leadership is left to specialists in Anesthesia and Intensive Therapy.

Considering the increasing need for Anesthesia doctors, the Specialist Doctor Education Program (PPDS). This program is an educational program that trains general practitioners to become specialist doctors. Implementation of PPDS in teaching hospitals or network hospitals under the coordination of the medical faculty. Resident as PPDS students will follow the learning process to become part of specialists who fully assist with tasks in the hospital. Therefore, residents as students participate in theoretical and practical learning activities at the hospital, either independently or in groups.

Resident Anestesi plays a role in PPDS as a student and mentor for medical education students who are doing clinical rotation. Schwab et al. (2019) describe residents following simulation-based training to develop themselves. Research by Petri et
al (2019) states that residents will make the ICU experience a teacher who will influence the profession in the future.

Evidence based education. Education held must be based on needs. Petri et al (2019)’s research has an impact on changes in curriculum and work tools including the resident assessment system. Curriculum changes and education delivery began with the emergence of the terms competency and evidence-based learning. Epstein & Hundert (2002) conducted research on the construct of a doctor’s professional competence derived from scientific knowledge, clinical skills and moral development. Therefore, to build the competence of an anesthetist specialist doctors need to be done intensively and based on predetermined standards (Kolegium, 2008).

Resident must follow evidence-based learning, following needs-based guidance. Resident must be able to identify future needs. Resident must be able to design activity programs that support learning activities at PPDS Anestesi. The target content and context became the resident's foothold to develop to prepare themselves to become future anesthetist specialists.

The learning performance carried out by residents is measured so that it can be used as a basis for conducting guidance. There is a significant relationship between the assessment and the form of guidance and the form of guidance that affects the results of the assessment. (Andreatta & Gruppen, 2009). Guidance held at PPDS Anesthesia, Diponegoro University, Semarang medical faculty has not been standardized. So that there are many variations in how to guide Anesthesia residents. The results of the observations show that the variations carried out tend to be unilateral (Ob.1 / 23 October 2020). The existence of variations can cause gaps (Epstein & Hundert, 2002). An accurate model is needed to describe needs-based guidance, especially for Anesthesia residents; Selection of valid and reliable guidance methods that can be used in various existing specialist medical education facilities (Akib, et al., 2008).

The research problem is limited to the description of needs-based guidance planning to improve the competence of PPDS Anesthesia residents. Given the very broad scope of the problem, this study limits the planning of need-based Anesthesia resident guidance in the ICU room in Kariadi Hospital Semarang.

Planning is an activity to design a series of organizational work activities in an effort to achieve goals. Planning is part of management. According to Robbins and Coulter (2009) planning will involve the design of coordination and supervisory activities for work so that the work can be completed efficiently and effectively. Planning work includes planning input, process, output, monitoring and monitoring in return. Determination of goals, vision and mission as well as all the attributes required in achieving goals.

Anesthesiologist specialist education trains a general practitioner to become a specialist doctor according to his specialization (Kolegium, 2008). The implementation of PPDS education has a specialist doctor professional education standard that ensures the achievement of educational goals according to competence (Indonesian Medical Council 2012). In this regard, residents as PPDS students must have the responsibility and independently realize the noble task of becoming an anesthesiologist specialist.

Decree of the Minister of Health of the Republic of Indonesia Number 1778 / MENKES / SK / XII / 2010 concerning Guidelines for the Implementation of ICU Services in Hospitals that there are various aspects that must be fulfilled and adhered to in serving patients, including mapping special staff including trained anesthetists. This condition requires special skills or skills for PPDS I students as ICU doctors which must always be improved.

Hattie's research (2007) shows that various factors influence educational attainment, including feedback that has almost twice the effect of the average of all learning activities. According to Chang et al (2011) students set specific learning objectives in all aspects of clinical pregnancy, the accuracy of students' self-values on their clinical performance.

In developing feedback, it is necessary to first recognize the culture and climate of the profession. Professional culture will influence the feedback experience. The professional climate that is built will strengthen the implementation and development of internal professionals to be the best and differentiate from others. A well-developed culture and professional climate will describe the expected roles of both. Van de Ridder et al. (2008) the effectiveness of feedback cannot be compared to behavioral performance, but rather a comparison between models that build professional culture.

In the implementation of education, residents need guidance and assistance from academic lecturers and practical supervisors. Interaction and communication must be well built to achieve the stated objectives of increasing competence. Planning is built by selecting facts and efforts in making estimates about the situation and formulating actions according to the required objectives required.

Planning is based on a needs analysis. One of the analysis of educational program needs is done by evaluating the program's implementation. Even though they are different from one another, the intention is the same, namely to carry out data or information collection activities regarding the object being evaluated. Kaufman and English (1979) define needs analysis as a formal process to determine the distance or gap between actual outputs and impacts with desired outputs and impacts. Needs analysis will be a constructive and positive tool to achieve the goals set.
Needs-based mentoring planning will become a new job at the beginning of activities to achieve educational success quickly and precisely. Identification of needs and accompanying tools will help a resident carry out his / her study assignment in this PPDS program. Planning activities include 1) compiling a database and resident profile; 2) carry out self-evaluation to see potential strengths and weaknesses; 3) identify needs by formulating the mapping of each component into the planning made; 4) determine indicators of work performance and performance success; 5) establish a planning strategy.

II. METHODS

The approach of this research is qualitative research with the method used in the case study. Researchers become an instrument that requires the help of informants to formulate assumptions based on existing cases. The Case Study research design reveals solutions to cases encountered in the guidance of Anesthesia residents at the ICU RSUP dr. Kariadi Semarang.

The data source is an anesthetist specialist doctor education program, especially those practicing at the ICU RSUP dr. Kariadi Semarang. Primary data of this study were residents of Anesthesia, especially stage I. Secondary data were supporting sources in research such as ICU RSUP dr. Kariadi, other specialist doctors, documents related to resident activities, and literature sources related to resident guidance. Tertiary data is taken from dictionaries and encyclopedias that explain the understanding of the meaning in various terms in PPDS Anesthesia.

This research data collection technique by observation, interviews, and documentation in various settings, various sources, and various ways. The data validity was done by using source triangulation technique. The data analysis technique is carried out through the stages of data collection, data reduction, hypothesis determination, data presentation in the form of diagrams or percentages to see the increase that has occurred and draw conclusions.

III. RESULTS AND DISCUSSION

The Intensive Care Unit (ICU) according to KMK 1778/2010 (D.1 / December 2019) is part of an independent hospital, with special staff, special services aimed at the observation, care and therapy of patients with injuries or life-threatening diseases or potentially life threatening. Special emergency conditions cause the hospital to prepare quality and adequate resources that support patient care.

The ICU room of Kariadi Semarang's doctor hospital provides 24-hour service in emergency medical services. The hospital prepares medical human resources (HR) that support services, in addition to the preparation of state-of-the-art infrastructure. In KMK 1778/2010, medical resources who work in the ICU are medical personnel who have adequate knowledge about emergencies in particular, have the appropriate skills, and have a high commitment to time. In the workforce list from KMK, it is written that the head of the ICU is an anesthesiologist or other specialist who is ICU-trained (if there are no Anesthesia and Intensive Therapy doctors).

Given this importance, the need for specialist doctors in anesthesia and intensive therapy is very high. Diponegoro University's medical faculty organizes a specialist education program (PPDS) Anesthesia and Intensive Therapy. In the curriculum document (D. 4.2) it is stated that the vision of the Anesthesia and Intensive Therapy study program is to become a center for education, research and science, as well as skills in the field of anesthesia and intensive therapy that are superior in Indonesia. The mission of the study program is to create a quality education system with a quality education and teaching system based on the latest developments in medical science and technology through a proportional education stage based on the existing curriculum; conduct research and increase the number of researches that produce scientific publications, as well as contribute to findings in the field of Anesthesia and Intensive Therapy, which are beneficial for medical practice and for society; carry out services in accordance with the needs of society with the ability of knowledge and skills in the field of Anesthesia and Intensive Therapy; improve entrepreneurship based on innovative and creative thinking so that graduates are able to compete in local, regional and international markets; and produce human resources who have honest, courageous, caring and fair values in professional and social life.

The Competency of the Specialist Doctor Education program-1 (PPDS-1) Anesthesia and Intensive Therapy Faculty of Medicine, Diponegoro University refers to the Competency Standards for Anesthesiology Specialists and Intensive Therapy issued by the College of Anesthesiology and Intensive Therapy (KATI). Based on these standards, the competences of Anesthesiology Specialists and Intensive Therapy are divided into 3 (three) areas of education, attitude (affective), knowledge (cognitive), and skills (psychomotor) with competency standards that are arranged based on 5 (five) main domains, namely Perioperative Medicine, Anesthesia Science, Pain Management, Emergency Medicine (Emergencies) and Critical Care, and the realm of Science and Research (D.4.2)

"Seeing that the role of Anesthesia and Intensive Therapy doctors is very high in the ICU, it is important that Anesthesia and Intensive Therapy residents plan their education as well as possible. The design of activities that are carried out must pay attention to the programs that have been
"Anesthetist resident is a candidate for anesthetist specialist who must have the responsibility and capability of anesthesia. Given that specialist doctors have a high role in preoperative management, during surgery, and after surgery; intensive and critical care; the competence and actions that an anesthetist specialist must have. In connection with that, the Anesthesia resident must be able to learn strongly to develop the ability to become a reliable anesthetist doctor. Educational preparation and preparation must be done correctly and on time. So that the learning target is exceeded" (W.DS2 / 18 Dec 2019).

The conclusion from interviews with study program managers, and several lecturers showed that the high role of Anesthesia and Intensive Therapy doctors made residents have to be serious in implementing educational programs. The planning of the educational process was carried out by residents based on personal characteristics and potentials.

The results of the case study analysis can be seen in Table 1. Table I shows the research findings given to 2 (two) different groups.

Table 1. Recapitulation of Resident Perception

<table>
<thead>
<tr>
<th>No</th>
<th>Indicator</th>
<th>Percentage</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Guidance planning is carried out by lecturer / doctor supervisor or assistant according to the curriculum and study program learning plan</td>
<td>78,2</td>
<td>37,2</td>
</tr>
<tr>
<td>2</td>
<td>Resident is actively involved according to the needs of understanding competence</td>
<td>39,7</td>
<td>63,3</td>
</tr>
<tr>
<td>3</td>
<td>Resident is actively involved in planning good practice emergencies in the ICU</td>
<td>68,3</td>
<td>79</td>
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Research I was conducted at the initial residents of stage I. Research II was conducted on residents in the middle and near the end of stage I and several residents of stage II.

The visual description of Table 1 can be seen in Figure 1. Figure I shows that there are differences in the perceptions of the residents in the 3 (three) established planning indicators.

The increase was evident in the indicators of residents being actively involved according to the need for understanding competence (2) and residents being actively involved in planning good practice emergencies in the ICU (3). Meanwhile, indicator 1 of the planning of mentoring is carried out by the lecturer / doctor supervisor or assistant according to the curriculum and the study program learning plan has decreased. This decrease means that the mentoring design is no longer scheduled according to the study program schedule, but has become a student improvisation by identifying the need for guidance.

The density of activities allows a specialist to have less time, so that through the design of activities, various activities of a specialist can be managed properly. The same is done by residents. Resident must compile an educational plan that will be followed so that learning progress can be applied properly.

Resident guidance is carried out with the aim of solving problems that arise during the educational process. Academic and non-academic guidance is carried out in the hope that it can lead students to complete their education on time with maximum results.

From the results of documentation, interviews, and observations, it can be concluded that educational planning is important in determining the objectives of the PPDS education process. Planning must be accustomed and implemented according to the provisions, in order to achieve the stated goals.

In many conditions it is always stated that the planning of mentoring does not depend on the ICU administration, and the ICU facilities, because each is an independent part. However, several teams at the ICU stated that ICU administration and the layout of the ICU room would influence resident guidance planning. As mentioned by the ICU Nurse as follows:

"The administrative arrangement of the ICU will assist residents in compiling a work plan in case of difficulties in arranging scheduling. In addition, the layout of the ICU room will affect the comfort of the guidance" (W. P1 / 20 Jan 2020).
The ICU Administration/ Administration Staff said the same thing, although only one-sidedly and a small part was related to the work carried out.

"According to staff, resident planning in the ICU must pay attention to patient factors and matters related to patient administration services, so that residents understand the characteristics of patient services. Resident must also make a schedule of mentoring by adjusting the schedule of doctors in the ICU. All are confined to the ICU administration " (W.SA.1 / 20 Jan 2020).

This is not in accordance with the opinion of the Head of the Study Program or the representative (W.KPS.1) who stated that:

"Planning for guidance is carried out by residents by mapping the need for guidance and an agreement with a supervising doctor" (W.KPS.1 / 20 Jan 2020).

Support for this opinion flowed from other ICU physicians and residents. According to these informants:

"Planning for guidance in the ICU room does not depend on ICU facilities and infrastructure, scheduled planning is based on a supervisor’s agreement with the resident and is recorded by the higher stage resident" (W.DL.1 / 20 Jan 2020). "The results of observations carried out in the ICU room showed that there was administrative management of guidance, even though it was not optimal, at the beginning of the learning activities. Plans and schedules already exist but do not intersect with IC administration and infrastructure (W.R.1 / 20 Jan 2020).

Planning will be very meaningful in the preparation of the implementation of processes and services in the ICU room. The curriculum document (D.1.1) and the work program document (D.1.2) support this statement. The planning of the learning process for the residents of stage I and the residents of stage II and planning of services will be the basis for improving the quality of learning. The results of the interview with the doctor supervisor (W.DS.1 / 20 Jan 2020) described the following:

"Residents will prepare activities with the support of the availability of hospital facilities and infrastructure. Resident of Anesthesia and Intensive Therapy will be prospective doctor supervisors in the ICU, so they have to dig deep to get maximum results ".

Anesthesia doctor self-development and intensive therapy is needed in accordance with the Minister of Health Decree KMK 1778 / MENKES / SK / XII / 2010 (D.1), which indicates that the qualified health personnel serving in the ICU must have adequate knowledge, appropriate skills, and have a commitment to time. Educational planning will affect the planning of mentoring carried out by residents as prospective specialist doctors to maximize their potential.

The learning process planning for the resident stage I (Ob. 3.1), the learning process for the resident for the stage II (Ob. 4.1), and the process for patient care (Ob. 5.1) need to be implemented properly. Given the responsibilities and learning outcomes targets, team collaboration and team coordination are indispensable in planning. Planning for the learning process and services can be seen from the interviews with W. KPS.1 and W.DL.2 (Jan 2020). W. KPS / DS) said that:

"There is already an Intensive Care module in Modules 13 and 14 (D.4.2.1 and 4.2.2) which is used as a guidance planning guide in addition to the existing academic guidelines and regulations. According to W.DL.2 states that: There is already a preparation of medical records and skills in guiding, writing and reviewing the results of medical records. However, there is no planning or administration for the development of specialist doctors. (W.DL.2 / 18 Jan 2020).

The mentoring plan that is carried out aims to help residents complete each stage of learning. So it is very important to seriously identify the shortcomings of the resident related to understanding the learning he does. Analysis of environmental conditions around learning is very important in formulating planning. The evidence obtained indicates that planning based on the administration and infrastructure of the ICU does not exist / is minimal. Understanding the surrounding environment, including the need for related facilities and infrastructure is very important.

From the results of interviews, observations, and documentation, it can be concluded that in an effort to achieve learning targets, a resident must design activities according to the assignment he receives at a certain stage. One of the tasks of designing is designing mentoring with a companion / mentor independently or in teamwork. This mentoring plan will include a stage I resident mentoring plan, a stage II resident mentoring plan, and a patient care mentoring plan. The problem that arises is concrete evidence of unsystematic planning and is kept by all related parties.

Guidance planning is carried out in groups and individuals by paying attention to:
1. Self-management assessment
2. Self-regulatory assessment
3. Design learning activities and learning interactions
4. Needs-based task planning

Resident investigations in mentoring were carried out to find an empowerment process that was beneficial for the development of their teaching and learning skills (Kitchen and Jeurissen, 2006). The teacher will develop the student / student learning experience through different implementations. The conflicts that arise have the potential to conduct
IV. CONCLUSIONS
From the results of research conducted from October 2019 to April 2020, researchers can conclude that 1) there is an increase in the design of needs-based guidance activities, which is marked by a decrease in the design of the design from what was originally set by the study program, now it is based on student needs, improvisation of lecturers and students; 2) the resident is actively involved in designing competency improvement activities; 3) the resident is actively involved in designing good practice in the ICU.

Research recommendations 1) Resident must understand the overall learning design and the things that accompany it so that its achievements can be identified according to the target; 2) Accompanying doctor, providing need-based guidance. Therefore, it requires a high understanding of the characteristics and potential of students so that they are able to formulate guidance appropriately; 3) Research recommendations are aimed at study programs and related parties to facilitate needs-based guidance planning in an effort to increase the competence of residents of Anesthesia and Intensive Therapy.

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