

# ANALYSIS OF SYSTEM AND SERVICE MANAGEMENT IMPROVEMENT FOR MENTAL HEALTH AT MENTAL HOSPITALS: A SYSTEMATIC REVIEW

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## ABSTRACT

**Background:** Mental disorders are one of the health problems in the world where  $\pm$  300 million people experience mental disorders, and the quality of care for mental health has not increased, its caused poor treatment results. Poor quality mental health services can lead to negative therapeutic outcomes. However, poor quality of care can be substantially redressed through concerted and systematic quality improvement strategies. This study aimed to review systematically the system and service management improvement for mental health at mental hospitals.

**Subjects and Method:** A systematic review was conducted by searching following databases included Annual Reviewer, J-Store, Scintdirect, Scopus, Google Scholar and Online Library. The keywords were “mental health patient” AND “system improvement” AND “management health services” AND “hospital”. The inclusion criteria were English and open access. After review process, 16 articles were included in this review.

**Results:** From the 16 literature studies consisting of 5 references mentioning case management, multidisciplinary teams and facilities, 5 references regarding licensing and standardization, 3 references regarding certification and accreditation. Then 3 other references stated that the improvement of education and training of the health profession, organizational factors and hospital management leadership had a positive impact in improving service management hospitals especially in mental hospitals

**Conclusion:** System improvement and management of mental health services reduced the number of patients with chronic mental disorder in hospitals and increase patient satisfaction.

**Keywords:** system improvement, management, mental health, service, patient satisfaction

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## BACKGROUND

Mental health, according to a Webster health expert (2012), is a good emotional and psychological state, where individuals can utilize their cognitive and emotional abilities, function in their communities, and fulfill their daily needs. The essence of mental health itself is more on the existence and maintenance of healthy mental.

However, in practice we often find that not a few practitioners in the field of mental health emphasize more attention on mental disorders rather than trying to

maintain efforts to maintain mental health itself (Dewi, 2012).

Good mental health in every individual is a condition in which individuals are free from all types of mental disorders, and can function normally in living their lives, especially in adjusting themselves to deal with problems that may be encountered throughout their lives (WHO, 2013). Mental health is a condition of well-being that is realized by an individual, where there is the ability to manage the pressures of normal life, work

productively and productively, and participate in his/her community (WHO, 2014).

According to the Institute for Health Metrics Evaluation (IHME) shows that in 2017, there were approximately 300 million people around the world suffering from anxiety, including 160 million experiencing major depressive disorders, another 100 million experiencing mild depression known as dysthymia. It is not easy to find out clearly about mental disorders, because many people may suffer from more than one sign or symptom of a mental disorder. According to data from the Global Burden of Disease (IHME), around 13% of the global (world) population or around 971 million people suffer from some type of mental disorder. Dementia is the fastest growing mental illness (Rice-Oxley, 2019).

According to the World Bank, Indonesia is one of the lower middle-income countries (LMIC) and the study estimated that almost 50% in Indonesia experience symptoms of depression. According to data from the 2013 Basic Health Research, the prevalence of severe mental disorders in Indonesia reaches 1.7 per mile. This means, 1-2 people out of 1000 Indonesians experience severe mental disorders. In 2013, psychiatric treatment was noted that less than 10% of people with mental disorders received therapy services by health workers. The numbers that are far from expectations.

In 2018, a survey conducted by Basic Health Research showed that the prevalence of severe mental disorders increased significantly to 7 per mile, meaning that 7 out of 1000 Indonesians experienced severe mental disorders, or increased 312% from 2013. Where there were 0.67% of the total households whose members suffer from schizophrenia/psychosis.

However, 51.1% of individuals who

experienced it did not routinely take medication. By 23.6%, the reason was unable to buy drugs (Wijaya, 2019).

According to Torrey (2006) in Marliyani (2011), there was 5-6% of people with severe mental disorders who require treatment in a hospital, especially in a psychiatric hospital. However, based on WHO data in 2011 on Indonesia's Mental Health Profile, the number of beds in mental hospitals for inpatients available was 3.31 per 100,000 population. The ratio of psychiatric to the total population in Indonesia is only 0.01 per 100,000 population. The achievement of hospital performance targets for the Bed Occupancy Rate (BOR), Length of Stay (LOS), Turn Over Interval (TOI), and also Bed Turn Over (BTO) indicators are contradictory to the high rate of patient rejection due to inpatient admission system which requires inpatients to be treated in intensive care psychiatric rooms first before they can be treated in inpatient rooms (calm).

This causes the patient to not be admitted to the hospital if the mental care room is fully intensive. Patients with mental illness, especially schizophrenia, generally require treatment in a long period of time so this will affect the cost of care (cost effective) is quite large. Uncertainty about cost information and direct payment systems based on services received (free for services) will increasingly burden. Therefore, it is necessary to improve the quality of hospital services.

Improving the system and management of hospital services is a must and the needs of all parties. Service quality management is a picture of the results that can fulfill customer needs and expectations and provide satisfaction to customers. Quality management of health services is the degree of perfection of services for health services in accordance

with professional standards and service standards by using potential resources available at hospitals or health centres in a reasonable, efficient and effective manner and provided safely and satisfying norms, ethics, law, and social culture by taking into account the limitations and capabilities of the government and the consumer community (Herlambang, 2016).

Pohan (2003) in Prastiwi (2010), measurement of quality management of health services can be done through health professional education, licensing or 'licensure', standardization, certification, and accreditation.

While the quality management of services in psychiatric hospitals can be measured through several indicators, namely 1) patient safety indicators which include a reduction in the number of suicides, runaway patients, incidence of nosocomial infections and the incidence of falls or injuries; 2) Reduction in treatment costs; 3) hospital performance indicators which include new inpatient visit rates, decreased relapse rates, increased Bed of

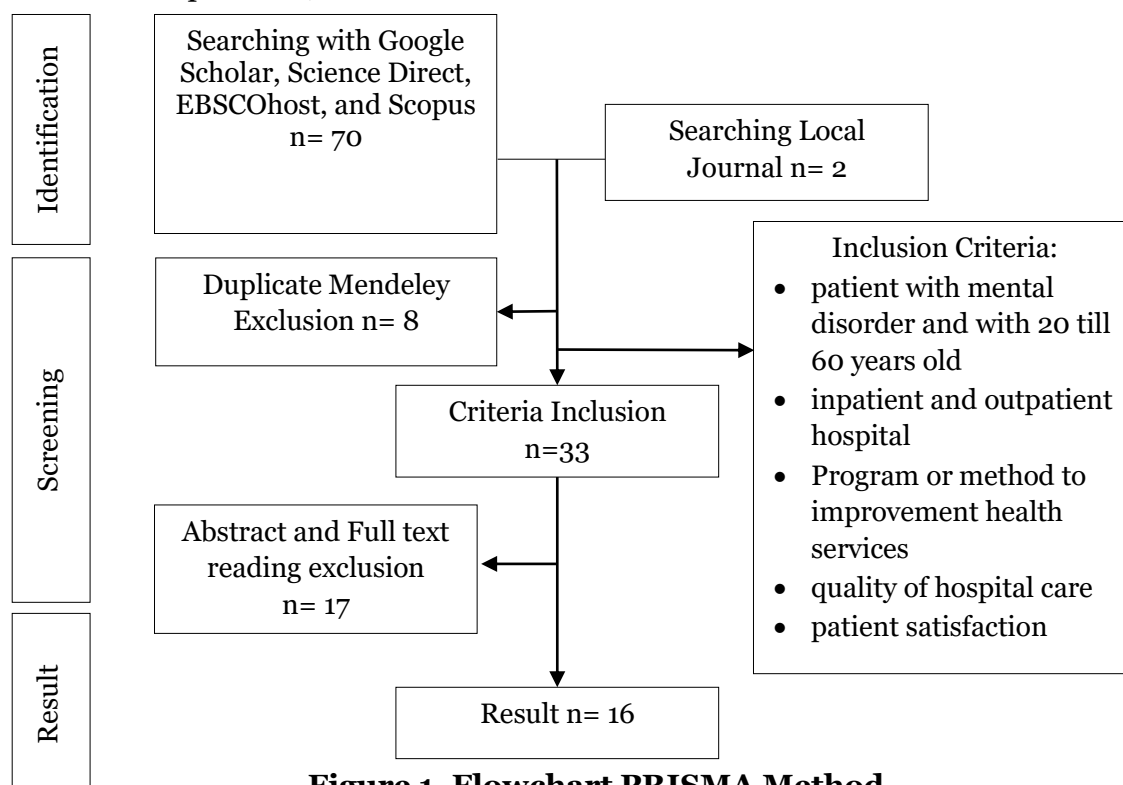
Occupancy Rate (BOR), Turn of Investments (TOI), Bed Of Turn Over (BTO), Average Long of Stay (AvLOS), and customer satisfaction indicators.

Satisfaction of patients and families with mental disorders can be achieved by managing good patient services, from planning to patient follow-up after discharge. An integrated and systematic strategy is needed to improve good and quality services, especially in mental hospitals. Therefore, this systematic review aimed to systematically review the improvement of the system and management of services in hospitals, especially psychiatric hospitals.

## SUBJECTS AND METHOD

### 1. Study Design

This study was a systematic review using articles obtained from PubMed and Google Scholar, Annual Reviewer, J-Store, Science Direct, and Scopus.



**Figure 1. Flowchart PRISMA Method**

The articles searched using keywords of "mental health patient" were obtained 97.580 articles. The articles obtained from more phrases of "system improvement" AND "management health services" AND "Hospital" AND "cross-sectional study" were 351 articles.

## 2. Inclusion and Exclusion Criteria

The articles collected have inclusion criteria, which are limited by open access, in 10 years, English language, and full text.

## 3. Article Extraction

A total of 16 articles were selected by the full text review and assessed for eligibility. The criteria for a systematic review used the Prism method showed in Figure 1.

viewed on improving service management, it was shown that 5 references mentioned case management, multidisciplinary team and facilities greatly influenced improvement in service management, 5 references stated that licensing and standardization became guidelines and references in improving service management.

In addition, 3 research references concluded that certification and accreditation improve the quality of service management. 3 other references stated that the increase in education and training of the health profession, organizational factors and hospital management leadership had a positive impact in improving the management of services in hospitals specifically mental hospitals. These 15 references are summarized in Table 1.

## RESULTS

From 16 literature studies that were re-

**Tabel 1 Article Characteristics**

No	Title	Author	Variable	Results
1	Assessing and Changing Organizational Social Contexts for Effective Mental Health Services	Glisson and Williams (2015), USA	- Organizational Social Context (OSC) - organizational intervention model labelled Availability, Responsiveness, and Continuity (ARC)	- To improve mental health services by identifying the mechanisms that link organizational interventions and social context to individual-level service provider intentions and behaviours associated with innovation and effectiveness: - Collaboration. ARC specialists work in the collaboration stage with agency administrators, external stakeholders, and clinicians to incorporate three component tools - Participation. Five component tools form the ARC participation stage to establish organizational processes that are critical to engaging members in service improvement efforts - Innovation. Finally, four ARC component tools compose the innovation stage in the implementation of changes to improve service quality and outcomes
2	Reducing Hospital Readmission Rates: Current Strategies and Future Directions	Kripalani et al. (2014), USA	- Interventions for patients discharged from hospital to home	- Patient needs assessment, medication reconciliation, patient education, arranging timely outpatient appointments, and providing telephone follow-up have successfully reduced readmission rates for patients discharged to home - Define the roles of home-based services, information technology, mental health

				care, caregiver support, community partnerships, and new transitional care personnel.
3	Transforming the Treatment of Schizophrenia in the United States: The RAISE Initiative	Dixon et al. (2018), USA	<ul style="list-style-type: none"> <li>- The Recovery After an Initial Schizophrenia Episode (RAISE) project</li> <li>- multi-element treatment called coordinated specialty care (CSC)</li> </ul>	<ul style="list-style-type: none"> <li>- Evidence is mounting for the positive impact of CSC on a range of outcomes for individuals in the early stages of psychosis</li> <li>- Implementing CSC within a system of mental health services increases its capacity to provide evidence-based care for individuals at any stage of a psychotic illness</li> <li>- Earlier treatment means earlier benefits in terms of immediate outcomes but may not improve longer-term outcomes and prevent disability.</li> <li>- CSC programs have established their value in improving early outcomes; they should be available as standard care for new-onset psychosis and can provide a humane and rigorous platform upon which to build further studies, develop new treatments, and refine the delivery of services.</li> </ul>
4	Patient Satisfaction Survey as a Tool Towards Quality Improvement	Al-Abri and Al-Balushi (2014), USA	Snowball Search Method	<ul style="list-style-type: none"> <li>- a standardized tool needs to be further developed and refined in order to reflect positively on the main goals of patient satisfaction survey</li> <li>- to communication skills, explanation and clear information, which are more essential and influential than other technical skills such as clinical competency and hospital equipment</li> </ul>
5	Patient safety, satisfaction, and quality of hospital care: cross sectional surveys of nurses and patients in 12 countries in Europe and the United States	Aiken et al. (2012), USA	<ul style="list-style-type: none"> <li>- Nurse outcomes (hospital staffing, work environment s, burnout, dissatisfaction, intention to leave job in the next year, patient safety, quality of care),</li> <li>- Patient outcomes (satisfaction overall and with nursing care, willingness to recommend hospitals)</li> </ul>	<ul style="list-style-type: none"> <li>- The percentage of nurses reporting poor or fair quality of patient care varied substantially by country (from 11% (Ireland) to 47% (Greece)), as did rates for nurses who gave their hospital a poor or failing safety grade (4% (Switzerland) to 18% (Poland)). We found high rates of nurse burnout (10% (Netherlands) to 78% (Greece)), job dissatisfaction (11% (Netherlands) to 56% (Greece)), and intention to leave (14% (US) to 49% (Finland, Greece)). Patients' high ratings of their hospitals also varied considerably (35% (Spain) to 61% (Finland, Ireland)), as did rates of patients willing to recommend their hospital (53% (Greece) to 78% (Switzerland)). Improved work environments and reduced ratios of patients to nurses were associated with increased care quality and patient satisfaction</li> <li>- Patient per nurse increased the odds of nurses reporting poor or fair quality care (1.11, 1.07 to 1.15) and poor or failing</li> </ul>

				<p>safety grades (1.10, 1.05 to 1.16). Patients in hospitals with better work environments were more likely to rate their hospital highly (1.16, 1.03 to 1.32) and recommend their hospitals (1.20, 1.05 to 1.37), whereas those with higher ratios of patients to nurses were less likely to rate them highly (0.94, 0.91 to 0.97) or recommend them (0.95, 0.91 to 0.98)</p> <p>- Improvement of hospital work environments might be a relatively low cost strategy to improve safety and quality in hospital care and to increase patient satisfaction</p>
6	Effectiveness of quality improvement strategies for coordination of care to reduce use of health care services: a systematic review and meta-analysis	Tricco (2014), Canada	effectiveness of interventions to improve the coordination of care to reduce health care	<p>- Quality improvement strategies for coordination of care reduced hospital admissions among patients with chronic conditions other than mental illness and reduced emergency department visits among older patients. Our results may help clinicians and policy-makers reduce utilization through the use of strategies that target the system (team changes, case management) and the patient (promotion of self-management)</p>
7	Service Quality (Servqual) and its Effect on Customer Satisfaction in Retailing	Krishna-Naik et al. (2010), India	- uses SERVQUAL to analyze the gap between perceptions and expectations of the customer	<p>- Improving communication amongst staff members, using updated systems to process complaints, and ensuring error-free transactions</p> <p>- Training of staff to enable them in assisting customers and provide them with relevant and timely information. Courtesy, etiquette and communication skills could be honed through continuous training of the staff</p> <p>- Improvements in the ambience of the outlet, better shelves and space management, clear electronic sign posts, clean walkways and aisles, lighting, promotional islands, etc. should improve overall shopping experience for customers.</p> <p>- Provision for children's area, food courts, adequate parking space, security, and ATM facilities could provide hassle free shopping experience for customers</p>
8	Application of Lean Six Sigma methodology in the registration process of a hospital	Bhat et al., (2014), India	- Lean Six Sigma (LSS)	<p>- The cycle time has reduced from three to 1.5 minutes. The sigma level of the process showed improvement from 0.53 to 3.69 after the project</p> <p>- This helped in achieving the project objective of reducing waiting of patients in the system, and 94 per cent reduction was achieved</p> <p>- About 91 percent reduction in queue length and a 48 per cent reduction in percentage scheduled utilization of staff in the registration counter were</p>

				<p>reported. This reduced scheduled utilization of staff and helped the HIO to use their service for the other activities within the department whenever they were free</p> <ul style="list-style-type: none"> <li>- These reductions in key performance indicators (KPI) of the registration service, no doubt, understate the benefits from improved customer satisfaction</li> <li>- First, to encourage the people in the organization to use LSS methodology, the management decided to suitably award the successful teams. In the second move, management informed the teaching faculty of different departments of the medical and paramedical courses to motivate the students to take up similar study in the hospital attached to the college. After observing the success in this project, people were more confident in implementing LSS for addressing any improvement initiative in the organization</li> </ul>
9	Factors affecting implementation of accreditation programmes and the impact of the accreditation process on quality improvement in hospitals: a SWOT analysis	Ng et al. (2013), China	SWOT (strengths, weaknesses, opportunities, threats) analysis	<ul style="list-style-type: none"> <li>- Increased staff engagement and communication, multidisciplinary team building, positive changes in organisational culture, and enhanced leadership and staff awareness of continuous quality improvement were identified as strengths.</li> <li>- Weaknesses included organisational resistance to change, increased staff workload, lack of awareness about continuous quality improvement, insufficient staff training and support for continuous quality improvement, lack of applicable accreditation standards for local use, and lack of performance outcome measures</li> <li>- By relating the findings to the operational issues of accreditation, this review discussed the implications for successful implementation and how accreditation may drive quality improvement</li> </ul>
10	The impact of high-performance work systems in the health-care industry: employee reactions, service quality, customer satisfaction, and customer loyalty	Lee et al. (2012), China	test the effects of high-performance work systems (HPWS)	<ul style="list-style-type: none"> <li>- The results indicate that hospitals can improve customer satisfaction and loyalty through efficient operations, employee engagement, and service quality. One of the key findings of our study is that HPWS in health-care organisations influence employee reaction and service quality.</li> </ul>

11	Service quality of private hospitals: The Iranian Patients' perspective	Zarei et al. (2012), Iran	The study questionnaire was the SERVQUAL questionnaire	<ul style="list-style-type: none"> <li>- The total mean score of patients' expectation and perception was 4.91(SD = 0.2) and 4.02(SD = 0.6), respectively. The highest expectation and perception related to the tangibles dimension and the lowest expectation and perception related to the empathy dimension. The differences between perception and expectation were significant (<math>p &lt; 0.001</math>). There was a significant difference between the expectations scores based on gender, education level, and previous hospitalization in that same hospital. Also, there was a significant difference between the perception scores based on insurance coverage, average length of stay, and patients' health conditions on discharge.</li> <li>- Our findings clarified the importance of creating a strong relationship between patients and the hospital practitioners/personnel and the need for hospital staff to be responsive, credible, and empathetic when dealing with patients.</li> </ul>
12	Factors influencing healthcare service quality	Mosadeghrad (2014), Iran	Influence healthcare quality in the Iranian context.	<ul style="list-style-type: none"> <li>- Quality in healthcare is a production of cooperation between the patient and the healthcare provider in a supportive environment. Personal factors of the provider and the patient, and factors pertaining to the healthcare organisation, healthcare system, and the broader environment affect healthcare service quality.</li> <li>- Healthcare quality can be improved by supportive visionary leadership, proper planning, education and training, availability of resources, effective management of resources, employees and processes, and collaboration and cooperation among providers</li> </ul>
13	Configuring Balanced Scorecards for Measuring Health System Performance: Evidence from 5 Years' Evaluation in Afghanistan	Edward et al. (2011), Afghanistan	a balanced scorecard (BSC) performance system	<ul style="list-style-type: none"> <li>- Patient and community satisfaction of services (65.3–84.5, <math>p = 0.0001</math>); provider satisfaction (65.4–79.2, <math>p = 0.01</math>); capacity for service provision (47.4–76.4, <math>p = 0.0001</math>); quality of services (40.5–67.4, <math>p = 0.0001</math>); and overall vision for pro-poor and pro-female health services (52.0–52.6). The financial domain also showed improvement until 2007 (84.4–95.7, <math>p = 0.01</math>), after which user fees were eliminated. By 2008, all provinces achieved the upper benchmark of national median set in 2004.</li> <li>- The BSC has been successfully employed to assess and improve health service capacity and service delivery using</li> </ul>



				performance benchmarking during the 5-year period. However, scorecard reconfigurations are needed to integrate effectiveness and efficiency measures and accommodate changes in health systems policy and strategy architecture to ensure its continued relevance and effectiveness as a comprehensive health system performance measure
14	Measuring hospital out-patient service quality in Thailand	Yousapronpa iboon & Johnson (2013), Thailand	SERVQUAL instrument	- The present study has several managerial implications for service quality enhancement in the hospitals in Thailand. First, given that responsiveness, was the strongest predictor of service quality, hospital out-patient employees can exercise strong influence over perceived quality by giving sincere and detailed information about service conditions, by being willing to help and by offering fast and efficient service to out-patients.
15	A Cross-Sectional Study on Patient Satisfaction with Universiti Kebangsaan Malaysia Medical Centre (UKMMC) Primary Care Clinic	Article (2012), Malaysia	Patient Satisfaction Questionnaire -46 (PSQ-46)	- There was a significant association between each of the subscales and the general satisfaction ( $p < 0.001$ for doctors, nurses, accessibility and appointment; $p = 0.014$ for facilities) - Many patients perceived that clinic facilities were substandard but they still had a high level of general satisfaction. Nevertheless, strategies in improving the facilities are still required as it will contribute to the quality of care and patient satisfaction
16	Effectiveness of Services During the Implementation of Schizophrenia Clinical Pathway for Inpatient in Dr. Sardjito Hospital, Yogyakarta	Nurfarida et al. (2014), Indonesia	The implementation of schizophrenia clinical pathway for Inpatient in Dr. Sardjito Hospital	The process of hospitalization for schizophrenia patients in Dr. Sardjito hospital during the implementation of clinical pathway has not been effective. This can be seen from the completeness of filling in the clinical pathway form for inpatient schizophrenia, only 33.11% caused by information about the application of clinical pathway that was not fully reached the research informants and form design that was too small, the concept of planning according to the clinical pathway in inpatient schizophrenia services has not well implemented, efforts to verify and validate psychiatrists for services performed by PPDS have not been consistent and documented.

In table 1, there are literature from various countries such as Canada, USA as a comparison with several Asian countries such as China, India, Iran, Afghanistan, Thailand, Malaysia, and Indonesia so that they

can be used as a reference in efforts to improve service management in hospitals, especially psychiatric hospitals both in large countries and developing countries.

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## DISCUSSIONS

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The quality of health services was the degree to which health services were in accordance with professional standards and services by using the potential of available resources that are reasonable, efficient and effective and provided safely and satisfying norms, ethics, law, and socio-culture by taking into account of the limitations and abilities government and service communities or others. Doctors, employees and other community members served.

The researchers found that the strategy to improve the quality of service was focused on coordination at the hospital, with indicators in patients with chronic mental disorders who are hospitalized to the hospital reduced so as to reduce emergency room visits. Ongoing interventions, team changes, case management and self-management promotion have a significant effect on reducing hospital stays. As well as patient education is one of the strategies to improve the quality of service-coordination, it also significantly reduces hospital hospitalization. Patient education and self-management promotion tend to be less resource intensive than case management interventions, which indicated that a quality improvement strategy targeting patients (as opposed to doctors) might be an efficient use of resources.

An earlier systematic review assessed the effect of various interventions on frequent users and found that case management and multidisciplinary teams were likely to be effective in reducing emergency room visits. Collaboration, participation and innovation become part of the strategy in interventions in a multidisciplinary manner so as to create quality service and increase satisfaction with hospital visitors, but not specifically for interventions that involve case manage-

ment or change teams (Charles and Nathaniel, 2015).

There were several perspectives on the quality of health services among consumers according to health services as a health service that can fulfill the needs of the community, according to quality health service providers, namely the availability of equipment, work procedures, professional freedom in conducting health services, according to health service funders as a service. Effective and efficient health, according to the owner of the health service facility stated that quality health services can generate income that was able to cover operational costs but were affordable by the community while according to health service administrators can provide the needs and expectations of patients and health care providers.

Health service standards are an organizational tool for describing quality into operational terminology. Standards, indicators and threshold values are elements that will make quality assurance of health services measurable. Indicators are defined as benchmarks to determine changes associated with predetermined targets/ standards. The types of indicators can be grouped by; Input (relating to man, money, material, method and management), process (related to the process carried out to produce something both goods and services), output (related to something produced can be in the form of goods or the completion of service work), outcome (related to the size felt by customers, especially patients and families with mental disorders, was usually a customer perception of service utilization), benefits (related to the size of the benefits for customers, especially patients and families with mental disorders or for service providers) and impact (related to the size of the impact of a product broadly and usually long term).

According to Al-Abri et al. (2011) the intended efficiency improvement was closely related to the prevention of sub-standard or excessive health services. Additional costs due to having to deal with side effects or complications due to sub-standard health services can be avoided. Likewise, the quality of inappropriate use of resources found in excessive service.

By applying standardization, such as standardization of equipment, personnel, buildings, systems, organizations, budgets, and others, it is expected that health service facilities will have high quality. Standardization will build a classification of health services.

Therefore, a standardization of services such as clinical pathways, and service certification through accreditation was needed. This resulted in similarities in the delivery of health services to hospitals wherever the hospital was located. Accreditation is an acknowledgment that a health service institution such as a hospital has fulfilled certain health service standards, with an accredited hospital can independently improve the quality of its services (Gloria, 2013).

In addition, it was necessary to increase the competency of the health service provider, both the medical or non-medical profession so that it was expected to increase the ability and knowledge of the health service profession. According to Lee (2012), Hizlinda (2012), the education and training of the health service profession is aimed at producing a health service profession that has the knowledge, skills and behaviors that can support quality health services. By increasing the capabilities and knowledge of the health profession, it was expected to be able to provide satisfying and economically effective and efficient services.

With the improved quality of hospital services, it is expected to provide sa-

tisfaction for hospital customers, especially mental hospitals, this will encourage patients to continue to choose the hospital if they need more health service facilities, the better patient recovery process with short treatment period improve the effectiveness of hospital services, can improve hospital service efficiency, and can protect health service providers and the possibility of legal claims.

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