

Using Indicators to Improve Quality and Patient Safety in Private Hospital: Case Study

AR Abdul Aziz PhD, Nor Safina AM
KPJ Healthcare Berhad

Abstract: Hospital A is monitoring indicators for quality improvement and patient safety which are subdivided into nursing services (3 indicators), clinical support (5 indicators), and support services (1 indicator). Under legal and authority requirements, 4 indicators are monitored. For the improvement of work process and work flow it is further subdivided into completeness of record (5 indicators), timeliness of care (4 indicators) and efficiency of care (12 indicators). This hospital also monitor International patient safety goals consisting of 6 indicators, incident reporting (6 indicators), quality of care (8 indicators) and timelines of clinical outcome (8 indicators). For the prevention and control of infection 5 indicators are monitored. For the purpose of this paper only data for nursing services (3 indicators), clinical support (5 indicators), support services (1 indicator) and legal and authority requirements (4 indicators) were tabulated and analysed. This hospital monitor 65 indicators to measure the improvement of quality and patient safety. By monitoring and analyzing the data, this hospital can measure the achievement and plan for future improvement of quality and patient safety.

Key words: Monitoring indicators, nursing services, clinical support, support services

I. Introduction

Hospital A is a private hospital in Malaysia and this hospital had been monitoring many indicators for quality improvement and patient safety. Patient safety and quality is the heart of the delivery of healthcare. Safety is the main issues in diagnosis, treatment and care for every patient, carer and family members. All healthcare providers starting from doctors are committed to ensure excellence services are provided in treating, helping, comforting and caring for patients. It is very challenging because medicine will never be a risk free enterprise despite our best effort and this has to be acknowledged. Therefore we must make sure that we must provide enough effort to make the system as safe as possible for patients and staff by having the right checks and balances in place to detect errant practices, identify and re-train clinicians whose competence falls below appropriate standards. The management must also provide the means by which to analyse and learn from mistake when they do occur and develop standards to measure competences of healthcare providers.

The heart of everyday clinical practice is a commitment to deliver high quality care. Many health professionals in the past have watched that board agendas and management meetings are dominated by financial issues and activity targets. The government's white paper on the NHS in England outlines a new style of NHS that will redress this imbalance where all health organisations will have a statutory duty to seek quality improvement through clinical governance. Well managed organisations will be those in which financial control, service performance, and clinical quality are fully integrated at every level (10)

Studies of adverse events in many countries throughout the world have found that 4% to 16% of patients admitted to hospital experience one or more adverse effect of which 50% is preventable. Therefore the key to develop strategies is to understand why preventable errors occurs. Some of the issues that lead to adverse events are weak governance structures, poor communication processes, failure to develop clinical audit, poor working relationship between management and clinician, poor team work, lack of structured incident reporting systems, inconsistent analysis of adverse events and failure to participate in continuing education. With the advances in technology, patients and users have faced an explosion in easily accessible medical information available on the Internet and other sources. However such information may be inaccurate and misleading. Healthcare providers must play their roles to give accurate information to patients about their condition, the care that is most appropriate and the ways they can access the services.

Safety is concerned with the myriad ways in which a system can fail to function. Some of these failures may be familiar and even predictable but it may also unpredictable. Safety is partly achieved by being alert to these perturbations and responding rapidly to keep things on track. Doctors, nurses and managers do this all the time in healthcare, probably to a greater extent than any other industry. Safety is as is often said, a dynamic non-event (10)

Quality of care can be defined as 'the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge' [11],

and can be divided into different dimensions according to the aspects of care being assessed [9]. This paper will focus on clinical indicators that describe the performance of health care and related outcomes. The fundamental important criteria for the delivery of a safe system is leadership and accountability. There must be the right balance between organization and governance of healthcare system. The job of every one is to ensure patient safety in the system of healthcare. Without effective leadership, individuals may lack motivation in their practice and will later become complacent. Patients and general public deserve the quality healthcare and when the organisation failed to do that patients are entitle to ask why and wanted to be ensured that measures had been taken to protect them and future patients from similar harm in the future. Assessing the quality of care has become increasingly important to providers, regulators and purchasers of care. In recent years, providers have begun to be interested in evidence-based medicine and purchasers have begun to focus on the cost-effectiveness of health care in producing health outcomes.

Quality of care can be defined as ‘the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge’(2) and can be divided into different dimensions according to the aspects of care being assessed [8]

The objectives of the indicators of safety and quality are to enhance the quality and safety focus in national health data standards and indicators, drive improvement in safety and quality at local levels through fostering supportive feedback and improve transparency and accountability in reporting on healthcare safety and quality (2).

Indicators can be used as measures that assess a particular health care process or outcome (4), to monitor and evaluate the quality of important governance, management, clinical and support functions that affect patient outcomes (7) and are used as guides to monitor, evaluate and improve the quality of patient care, clinical support services and organizational function that affect patient outcomes (3)

Indicators for performance and outcome measurement allow the quality of care and services to be measured. This assessment can be done by creating quality indicators that describe the performance that should occur for a particular type of patient or related health outcomes and then evaluating whether patients’ care is consistent with the indicators based on evidence-based standards of care (3)

Indicators for performance and outcome measurement allow the quality of care and services to be measured. This assessment can be done by creating quality indicators that describe the performance that should occur for a particular type of patient or the related health outcomes and the evaluating whether patients’ care is consistent with the indicators based on evidence-based standards of care (12) . Monitoring and indicator measurement serve many purposes to document the quality of care; benchmarking ; set priorities (e.g. choosing a hospital or surgery, or organizing medical care); and make judgments; support regulation, accountability and accreditation; support patient choice of providers and support quality improvement. By using indicators professionals and organizations are able to evaluate professionals and organizational systems function to meet the needs of patients. Indicators are not a direct measure of quality because quality is multidimensional.

Continuing education is required to ensure the organization can maintain the quality and patient safety. Both technical and human factors should be included in the training program for all level of healthcare providers. Health professionals can no longer be regarded as trained for life. A system of life long learning must be mandated followed by credentialing, privileging and competency assessment. Specific education and training are also required for professional. The program should include a specific module on patient safety. The competencies required should demonstrate competence-based training for healthcare providers. Healthcare organizations review the qualification and track record of doctors and other professionals and this process is called credentialing. In the United States credentialing is linked to the concept of privileging which is used to define the scope of practise of healthcare providers.

II. Objectives

To analyse the outcome of all indicators for quality and patient safety improvement in this hospital for a period of two years years from 2014 to 2015

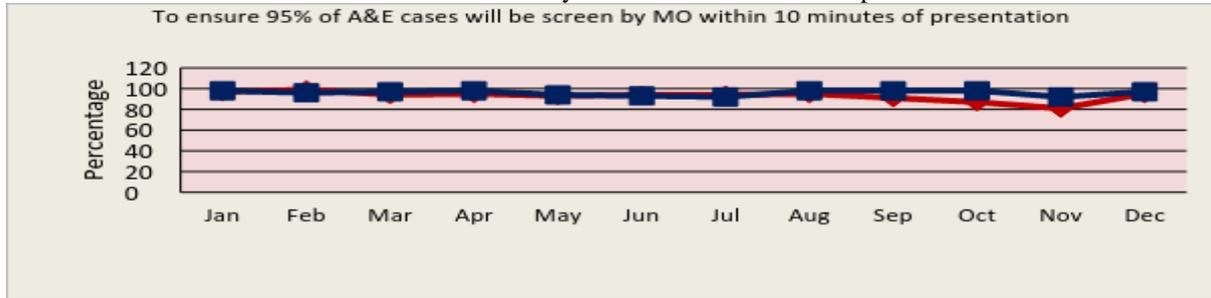
III. Methodology

Data were collected from January 2014 to December 2015 on all indicators related to quality and patient safety improvement that had been implemented in this hospital. Those data were tabulated , analysed to look at the trending on the achievement for the two year period. Indicators were sub divided into Customer Satisfaction, Legal and Authority requirement, Improvement of Work Process and Work Flow, 6th International Patient Safety Goals, Clinical Outcome and Morbidity

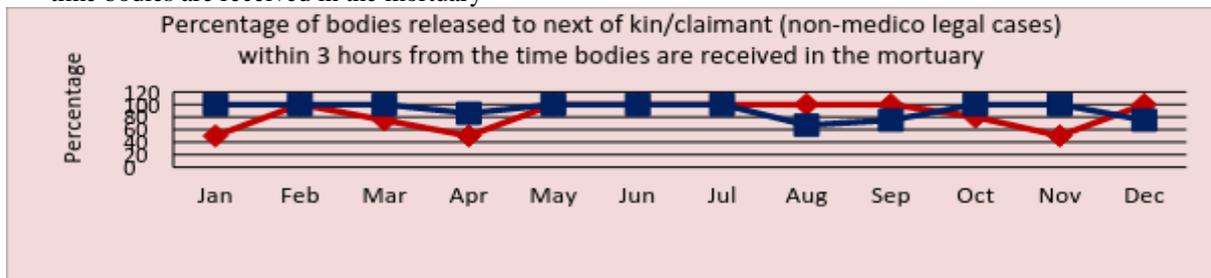
IV. Results

1. NURSING SERVICES

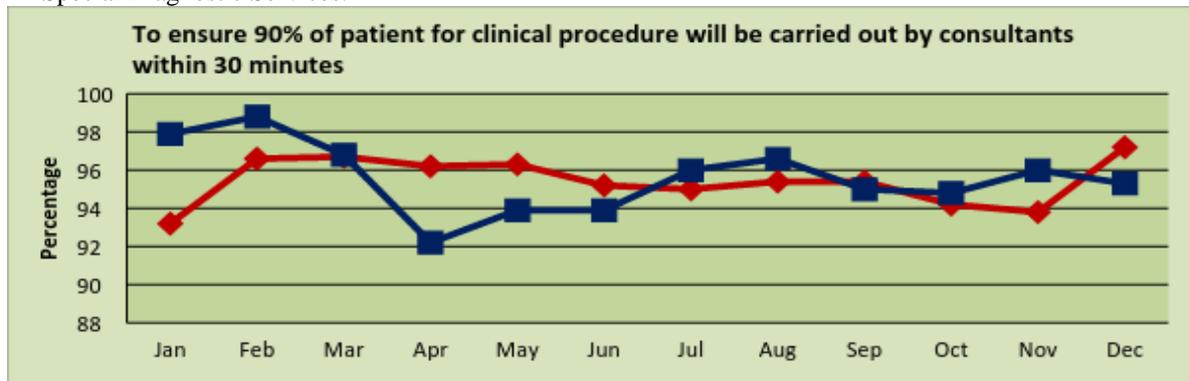
a. To ensure 95% of A&E cases will be screen by MO within 10 minutes of presentation



b. Percentage of bodies released to next of kin/claimant (non-medico legal cases) within 3 hours from the time bodies are received in the mortuary



c. To ensure 90% of patient for clinical procedure will be carried out by consultants within 30 minutes at Special Diagnostic Services.

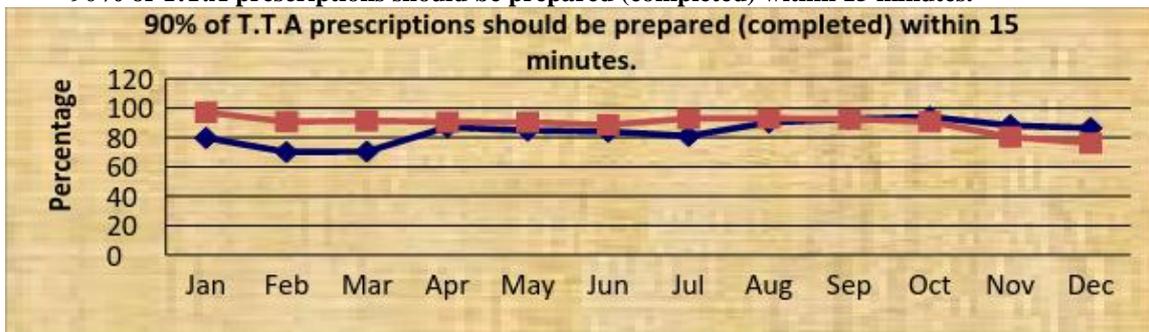


2. CLINICAL SUPPORT

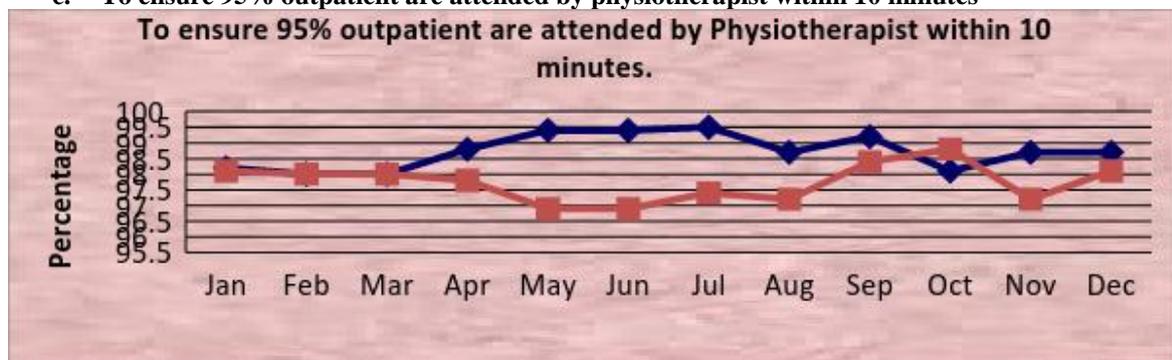
a. Percentage of out-patient waiting time less than 30 minutes at pharmacy



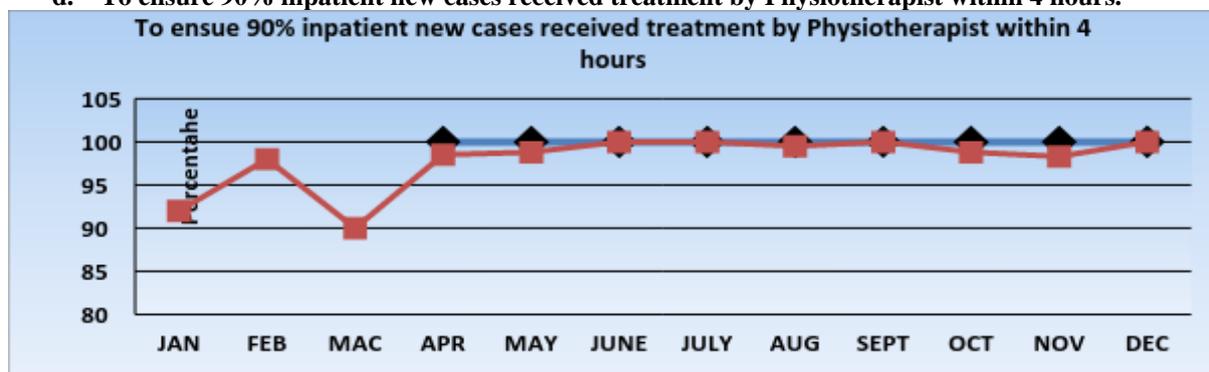
- b. T.T.A. (to-take-away) Prescription Preparation Time:-
 90% of T.T.A prescriptions should be prepared (completed) within 15 minutes.



- c. To ensure 95% outpatient are attended by physiotherapist within 10 minutes



- d. To ensure 90% inpatient new cases received treatment by Physiotherapist within 4 hours.

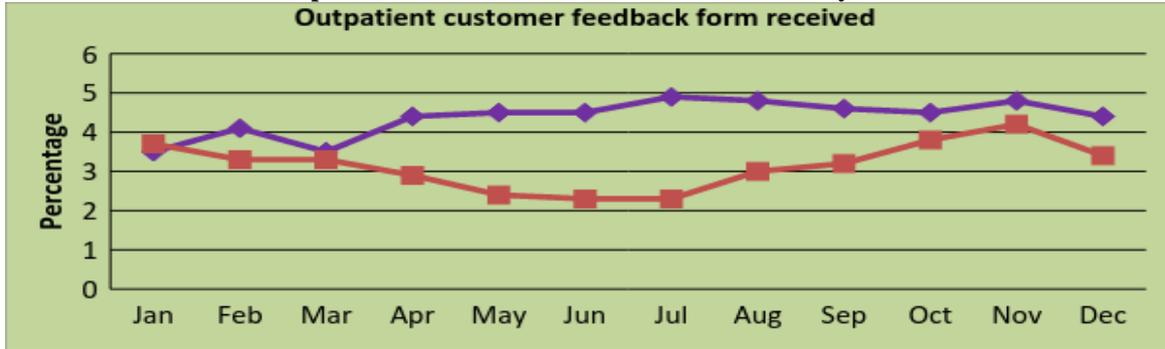


- e. To achieve 100% positive patient satisfaction ratings for diet consultation



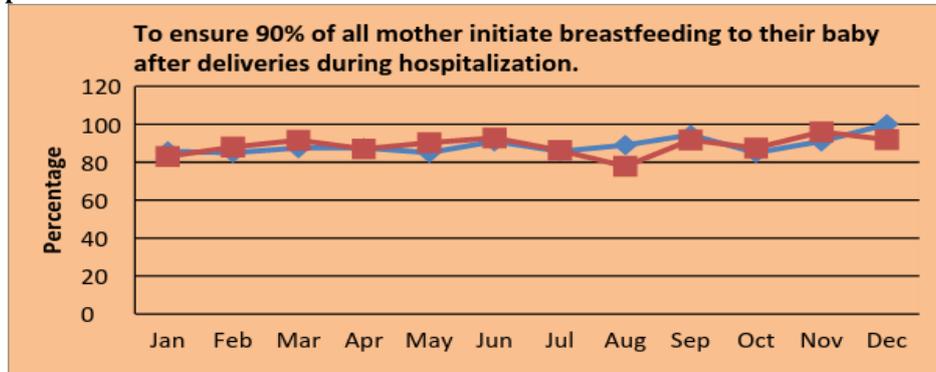
3. SUPPORT SERVICE

a. To ensure 4% of outpatient customer feedback form collected every month.

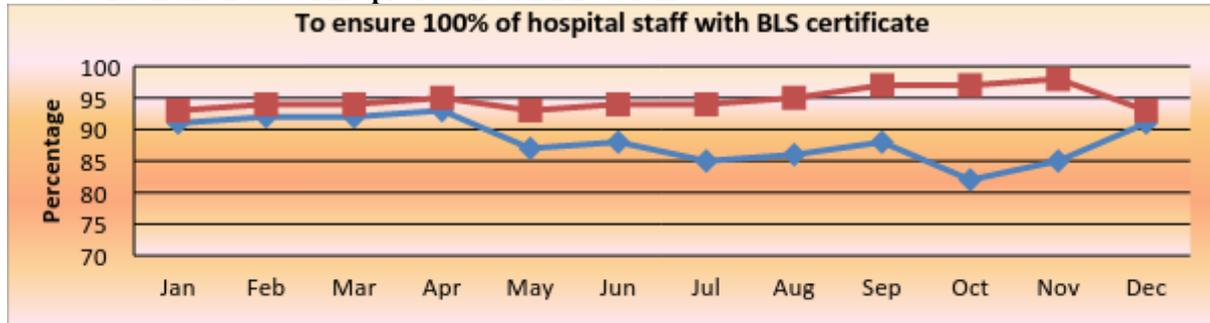


4. LEGAL AND AUTHORITY REQUIREMENT

a. To ensure 90% of all mother initiate breastfeeding to their baby after deliveries during hospitalization



b. To ensure 100% of Hospital staff with BLS certificate



c. To ensure 60% trained nursing staff attend in-service training monthly



V. Discussion

Hospital A is monitoring indicators for quality improvement and patient safety which are subdivided into nursing services (3 indicators), clinical support (5 indicators), and support services (1 indicator). Under legal and authority requirements, 4 indicators are monitored. For the improvement of work process and work flow it is further subdivided into completeness of record (5 indicators), timeliness of care (4 indicators) and efficiency of care (12 indicators). This hospital also monitor International patient safety goals consisting of 6 indicators, incident reporting (6 indicators), quality of care (8 indicators) and timelines of clinical outcome (8 indicators). For the prevention and control of infection 5 indicators are monitored.

For the purpose of this paper only data for nursing services (3 indicators), clinical support (5 indicators), support services (1 indicator) and legal and authority requirements (4 indicators) were tabulated and analysed. Under nursing services, for indicator number one, average of 95.9% was screened by Medical Officer within 10 minutes after registration in 2014. However the percentage was reduced by 3% to 92.9% in 2015. Reason for not achieving was due to the increase in work load especially during peak hours (2pm – 3 pm and 7pm -10pm) with only one Medical Officer working. For the indicator number two, the percentage of body released to next of kin/claimant (non-medico legal) cases within 3 hours is 91.9% in 2014 and 83.8% in 2015. The percentage was decreasing in 2015 by 8.1% because in January 2015, 1 body was released more than 3 hours due to waiting for arrangement of the undertaker; in April 2015 waiting for the document and bill settlement and in November 2015, the patient passed away at midnight and waiting for family member to come back from out station. For indicator number three, in 2014, the total number of procedures done by consultants was 3684 cases and achieved target more than 90% with an average of 95.6%. However in April 2014, 26 patients (7.8%) had their procedures longer than 30 minutes due to consultant urologist doing operation in OT. In 2015, a total of 3760 cases were done and quality objective of 90% was achieved from January to December with an average percentage of 95.4% of procedures done within 30 minutes. Under clinical support, Quality objective of 100% prescriptions dispensed to patients within 30 minutes was achieved in 10 months in year 2014 while 7 months in year 2015. Average percentage of patients waiting less than 30 minutes was 99.86% in 2014 compared to 99.76% in 2015. Although the percentage has reduced, however improvement was observed as total patients who waited less than 30 minutes has increased in 2015. This was due to the increased number of prescriptions in year 2015 compared to year 2014. Besides, longer preparation time towards the end of year 2014 and first quarter of 2015 the problem was also contributed by temporary shortage of experienced staff. This occurred following the resignations of two pharmacists (in August and October 2014) and two pharmacy assistants (in June and December 2014). For the second indicator, Quality objective of 90% of T.T.A. prescriptions being prepared within 15 minutes was achieved for nine months in year 2014 while three months only in 2015. The average percentage of T.T.A prescriptions prepared within 15 minutes was 89.52% and 84.01% respectively for year 2014 and 2015. This was mainly due to the increase in T.T.A. prescriptions by 4.8% caused by increase in bed occupancy rate (higher turnover rate). Besides, increase in discharge prescriptions reaching pharmacy after normal working hours and also on Sundays had also caused a significant delay in preparation time. It was also noted discharge prescriptions usually being sent to pharmacy almost at the same time from all the wards and that caused a long queue at each processing step in Pharmacy. Moreover resignations of two pharmacists (in August and October 2014) and three Pharmacy assistants' (in August and October 2014) have also caused a temporary shortage of experienced staff since the second half of year 2014. For indicator number three, in 2014, the objective of 95% outpatient are attended by Physiotherapist within 15 minutes was achieved from January to December 2014. In 2015, the target time was reduced from 15 minutes to 10 minutes and the objective was achieved with average percentage of 98.7%. Waiting time of more than 10 minutes was usually observed during Saturdays which is only half day (4hours), within that shorter period patient in the ward also undergoing treatment at physiotherapy services. This has caused congestion at physiotherapy services due to limited number of beds. Patients from clinics are also seeking treatment from Physiotherapy Services. The quality objective of the fourth indicator related to physiotherapy services, was monitored starting April 2014 and 100% are achieved until end of 2014. In 2015, during Management Review Meeting (MRM) the target was reviewed and changed to 90% within 4 hours instead of 8 hours as per 2014. The objective was achieved for the whole year of 2015. In January and March 2015 the percentage were only 90% and 92% compared with other months in 2015 due to the following reasons:-

1. Physiotherapy staff needs to re-adjust patient schedule for inpatient and outpatient including to give priority to new cases/ referral for inpatient.
2. Physiotherapists were unable to see patient on time as patient was going for other procedure such as for radiology test.
3. Some patient already taking food before chest physiotherapy and contribute to the delay of physiotherapy treatment.

For the last indicator, to achieve 100% positive patient satisfaction ratings for diet consultation, 'excellent' rating was increased by 12.9% in 2015 as compared to year 2014. In year 2015, there were 100% positive rating ('excellent' or good) and 0% negative rating ('average' or 'poor') for diet consultation. In year 2015, the overall ratings had improved as compared to year 2014. One negative rating ('average') was received in May 2014, but none of the negative rating received throughout the year of 2015. The reasons for increasing 'excellent' rating in year 2015 might be due to effectiveness of one-to-one diet counselling that fulfil the patient's needs and demands. Patient education materials and meal plans are adjusted based on patient's literacy level, and will be given to patient at the end of diet counselling session, with thorough explanation until patient indicate understood.

For support services only one indicator was monitored that is to ensure 4% of outpatient customer feedback form collected every month. The quality objective has increased gradually since August 2014. This is because the new system of cross survey has been introduced in July where every service complies with the requirement. In 2015 the quality objective has achieved the target of 4% from April onwards till the year end. For 2016 the target of the quality objective has been increased to 4.5%. Under legal and authority requirements, the quality objective was achieved for the year of 2014 as the target were set at 85%. The target increased to 90% since January 2015 onward. The average percentage of mothers initiating breastfeeding to their baby after deliveries during hospitalization for year of 2014 is 88.9% and 88.65% in 2015. For year of 2015, we managed to achieve the target above 90% for March, May, June, September, November and December. For the rest of the months we were not able to meet the target because mothers and babies conditions not permitting the initiating of breastfeeding due to baby not crying well and low Apgar score. There is no case of wrong bodies released to next of kin/claimant from January 2014 to December 2015 and the hospital comply with policies and procedures as per Legal Requirement from government. Regarding the third indicator, for January till December 2014, 82% - 93% of staff had attended BLS training and the average achievement for 2014 was 88%. For the month of October the achievement was 82% indicating the lowers percentage for the year. Total staff with BLS is 382 staff and only 8 candidates attended the training because head of services were unable to send their staff due to the tight schedule and some staff clearing their annual leave. In 2015 based on the data collected from January till December 2015, 93% - 98% of staff had attended BLS training and was 95% from the total hospital staff with Basic life support certificate. The percentage was increased by 7% in 2015, compared to year 2014 because each staff is compulsory to have BLS certificate, and all head of services were assigned to monitor accordingly. The objective of getting 100% compliance was not achieved for both years because some staff were not able to attend due to the tight scheduled. For the last indicator, in 2014 the percentage was achieved from January to December except for March 2014 where the achievement is only 51% due to lack of commitment and cooperation from staff. Average achievement for that year was 62.5%. In 2015, the percentage was achieved from January to December 2015 with an average achievement of 69.9%. Services can conduct their own service training when necessary. Process measures are that they are more sensitive to differences in the quality of care and are a direct measures of quality. Outcome measures reflect all aspects of care, including those that are difficult to measure such as technical expertise and operator skill. Outcome indicators can be improved if efforts are made to standardize data collection(10) .

VI. Conclusion

This hospital monitor 65 indicators to measure the improvement of quality and patient safety. By monitoring and analyzing the data, this hospital can measure the achievement and plan for future improvement of quality and patient safety.

References:

- [1]. file:///C:/Users/abdaziz/Desktop/Defining%20and%20classifying%20clinical%20indicators%20for%20quality%20improvement%20_%20International%20Journal%20for%20Quality%20in%20Health%20Care%20_%20Oxford%20Academic.htm
- [2]. [Google Scholar](#) Donabedian A. The quality of medical care. Science 1987,2000 ;856—864
Worning AM, Mainz J, Klazinga N, Gotrik JK, Johansen KS. Policy on quality development for the medical profession [in Danish]. Ugeskr Laeger 1992;154
- [3]. [Google Scholar](#) JCAHO. Characteristics of clinical indicators. Qual Rev Bull 1989 ;11
- [4]. Heiser R, Schedule and block tim management in the real world. Best Practice Perioperative Program Design (Sullivan Healthcare Consulting); 2009 Sept. 28-29; Toronto, ON
- [5]. Himelhoch S, et al. Chronic medical illness, depression and use of acutemedical Houck PM. Administration of first hospital antibiotics for community acquired pneumonia: does timeliness affect outcomes ? *CurrOpin Infect Dis* 2005 Apr; 18(2): 151-6

- [6]. <http://apps.who.int/medicinedocs/documents/s19629en/s19629en.pdf>
- [7]. <http://ukhealthcare.uky.edu/quality/efficient-care>
- [8]. <https://www.safetyandquality.gov.au/our-work/information-strategy/indicators>
- [9]. Int J Qual Health care (2001) 13 (6): 475-480
- [10]. Liam J Donaldson BMJ.1998 Jul 4; 317(7150): 61-65
- [11]. Lohr (ed) Medicare: A Strategy for Quality Assurance. Vols 1 and !!.Washington, DC: National Academy Press 1990