Development and Monitoring the Key Performent Index of The Quality of Care for Patients with Cleft/Palate in Tawanchai Center and Out-Patient Surgical Room Srinagarind Hospital Thailand

Sumalee Pongpagatip MA*,
Suteera Pradubwong MSN*, Bowornsilp Chowchuen MD, MBA**

* Nursing Division, Srinagarind Hospital, Faculty of Medicine, Khon Kaen University, Khon Kaen, Thailand
** Department of Surgery, Faculty of Medicine, Khon Kaen University, Khon Kaen, Thailand

Background: Cleft lips and cleft palates have the most incidences in the Northeast of Thailand (2.49/1,000 newborns). Cleft lips and cleft palates (CLP) can affect patients and families both physically and mentally. It takes critical long-term medical treatment starting when prenatal, newborn, and fully grown until 19 years old by a multidisciplinary team; therefore, it was effective to have collaboration with patients, families, and a multidisciplinary team in order to build up the same objective and create key performance index to monitor the treatment outcome also to develop the quality of care.

Objective: 1) to create the key performance index and 2) to develop the index system by using information technology.

Material and Method: After the research received ethics approval from Khon Kaen University, qualitative and quantitative data were collected. There were two periods in this study. The 1st period as following list below: 1) Field research was performed by conference meetings and problem-learning process, which participants participated in each step. There were two example groups: (1) Patients and families cooperated 2 times and (2) Nursing care cooperated 4 times in October-December 2013 (3) Combining the conclusions to set the key performance index and develop the index system in January-February 2014 (4) Recording the system in March-June 2014. Content analysis and percentage were used in this study.

Results: Nine organizations were engaged in this study; eight key performance indexes were established and the research recorded continuously for 4 months. There were three key performance indexes, which performed successfully: 1) Patients/caregivers received follow-up treatment continuously, 92.06 %, 2) Patients/caregivers reported 89.69% satisfaction after asking the information, 3) Patients/families reported overall satisfaction of 92.11%.

Conclusion: It is shown that recording the key performance index for the 1st period covered every quality of care. The Tawanchai Center and Out-patient Surgical Room under Srinagarind Hospital applied eight key performance indexes and found that three key performance indexes were feasibly implemented. For the 2nd period, the 1st outcome of key performance indices will be analyzed and developed including improving the software in order to record data and analyze the percentages automatically.

Keywords: Key performance index, Quality of care, Cleft lip/palate

Craniofacial deformities including cleft lip and cleft palate have the highest prevalence in the Northeast of Thailand (2.49 children born per 1,000)[1]. These birth defects affect not only the structure of the face but also the emotions and expectations of parents and relatives who are waiting for the baby's birth. The treatment and care for these deformities depend on the patient's age and clinical stages since birth until about 18 years of age. These congenital defects are surgically repaired and post operatively cared for by a multidisciplinary team. It aims for patients to have a beautiful face and voice as close to normal as possible to those born without any of these birth defects. This also includes patients having normal brain development and being able to adapt to society peacefully. In addition, their families should be able to provide care to patients currently receiving medical treatment and manage accordingly with a range of issues over a period of 18 years[2,3].

The Srinagarind Hospital, Faculty of Medicine, Khon Kaen University has been providing

Correspondence to:
Chowchuen B, Department of Surgery, Faculty of Medicine, Khon Kaen University, Khon Kaen 40002, Thailand.
Phone: +66-43-363123
E-mail: bowcho@kku.ac.th

services for patients with cleft lips and palate since 1999. Currently, there are up to 250 patients with cleft lip and palate who undergo corrective procedures annually. In addition, more than 1,000 outpatient appointments are rendered, which include tracking the development and nutrition, ear and hearing examination and speech training sessions. Other services including tooth care offered by the interdisciplinary team at the cleft lip and palate clinic that opens monthly and cares for about 250-300 cases per year [4,5].

Nurses play an important role in the multidisciplinary team for caring cleft lip and palate patients in the Out-Patient Surgical room and Tawanchai Center. The nurses provide care for patients based on age and the problems encountered by terms of both physical and psychosocial aspects including prior and post surgery. The nurses ensure that patients had surgery to repair the cleft lip and palate by age, keeping track of appointments for patients to receive continuing treatment, and developing services to meet patient and caregiver's satisfaction with the services of the Out-Patient Surgical room and Tawanchai Center so that patients and families receive quality of care [6].

In order to achieve efficient care and treatment for cleft lip and palate, it is necessary to maintain a common goal and have indicators to monitor the results of treatment in accordance with the objectives set [7]. Thus, Out-Patient Surgical room and Tawanchai Center has prepared guidelines and standards of nursing practice for caring of patients with facial deformities including cleft lip and palate [8]. However, there is currently a lack of reports for a key performance index and its continuous and systematic evaluation.

Therefore, the researchers have studied the development and monitoring of key performance index related to the care, treatment and nursing of patients. Other aims of this study are to develop an information technology system as a database for monitoring a key performance index systematically and promptly reporting the results of treatment in time. This study is a participatory action research (PAR = Participatory Action Research) [9], through a combination of Participatory Research and Action Research as well as qualitative research methods in order to identify key performance indexes and then using them in developing the treatment planning of an interdisciplinary team which will benefit the patients.

Objective

1) to create a key performance index and 2) to develop the index system by using information technology.

Material and Method

Khon Kaen University Human Research Ethics Committee approved the study. Qualitative and quantitative data were collected including: 1) research in the area (field research) by meeting and using problem-learning process, which is involved in all stages from thinking, decision-making, performing and evaluating three times from staff who joined the study, in a period of two months in October and November 2013; 2) the conclusions obtained from the two groups were used to set the key performance index and used in developing a database to monitor those key performance index. The two-month period was in December 2013 to January 2014; 3) collecting data from each unit and then entering into the database. This process took four months (March-June 2014) using the tools developed by each unit for general information, group process recorded. Data were analysed using content analysis and percentage.

Participants

Patients were selected purposively (Purposive Sampling), the researcher selected representatives of patients and their families who covered all age groups of treatment. Ten families were selected, as follows:

Four families were selected for the age range of 1-5 years. This covers a period of critical care and treatment by focusing on surgical procedures for cleft lip, palate and other facial deformities, before stepping out into the community.

Two families were selected for the age range of 6-10 years. This is a period of rehabilitation and dental braces.

Two families were selected for the age range of 11-15 years. This is the period of re-surgery for fixing disabilities still remaining.

Two families were selected for the age range of 15-20 years. This is the period of re-surgery for fixing disabilities that remain before discontinuing treatment with near-normal conditions.

The patients with cleft lip and palate are homogeneous sample, which have similar characteristics. Therefore, they are able to represent the remaining patients and families.

Results

The Out-Patient Surgical Room and Tawanchai Centre set eight key performance indexes and targets for nursing of patients by continuously

recording these indicators for four months. The results showed that: 1) the average rate of patients who underwent surgery to repair cleft lips, according to the age groups, was 93.75%; 2) the average rate of patients who underwent surgery to repair a cleft palate, according to the age groups, was 92.50%; 3), the average rate of patient/caregiver understanding of the treatment plan was 83.01%; 4) the average rate of patient/caregiver receiving prompt care prior operation was 84.72%; 5) the average rate of patient/caregiver receiving continuing follow-ups was 92.06%; 6), average rate of patient/caregiver's satisfaction with inquiries from the staff who provided the care was 89.69%; 7) the average rate of patient/caregiver receiving guidelines and calendars for appointments' dates was 88.44%; and 8) the average rate of patient/family's overall satisfaction was 92.11% (Table 1).

Discussion

The results found that only three goals of development of key performance index related to patient care, treatment and nursing were achieved in a period of four months including: 1) the rate of patient/caregiver receiving continued follow-ups, over 90 percent. This may be because of the project "Beautiful smile clear voice" which was conducted to honour the 50th birthday of HRH Princess Maha Chakri Sirindhorn. This project may have made patients aware of their rights and accessibility to the hospitals that have potential in the treatment specific to these conditions without a

referral. In addition, patients also received financial support from the Thai Red Cross in travelling to the surgery, speech training, ears and hearing examination and dental care. As a result, the number of patients and families to pursuing treatment increased; 2), the rate of the patient/caregiver's satisfaction with inquiries from the staff who provided the care was more than 85%. There are possible reasons to explain this. At the Srinagarind Hospital, there is a multidisciplinary team with a range of expertise providing care for patients. In addition, patients/carers can get information from multiple channels, such as phone via the surgical outpatient department, Tawanchai Centre and inpatient department for patients with cleft lips and palate, Tawanchai Centre's website, guidelines for the care and treatment of patients with cleft lips and palate; and 3) the rate patient/family's overall satisfaction was more than 85% since the Out-Patient Surgical Room and the Tawanchai Centre had conducted a project to develop services of continuing care for patients with cleft lip and palate and the One Day Service project where patients can receive overall services within the same day from interdisciplinary teams who have a wide range of expertise.

The key performance index related to care: treatment and nursing have been developed by the research team under field research, which was conducted in real and practical situations. These have been set up using the learning process (Problem-Learning Process), participatory meetings which are

Table 1. Indicators of services for the Out-Patient Surgical Room and the Tawanchai Centre

Indicators	Target	Results				
		Mar 2014	Apr 2014	May 2014	Jun 2014	Avg.
The rate of patients who underwent surgery to repair cleft lips, according to the age groups	100	100	100	100	75. 00	93.75
The rate of patients who underwent surgery to repair a cleft palate, according to the age groups	100	100	100	100	70. 00	92.50
The rate of patient/caregiver understanding of the treatment plan	100	84.00	82.00	82.50	83.53	83.01
The rate of patient/caregiver received a prompt in caring prior operation	100	80.00	88.00	85.00	85.88	84.72
The rate of patient/caregiver had continuing follow-ups	>90	92.00	92.00	92.50	91.76	92.06
The rate of patient/caregiver's satisfaction with inquiries from the staff who provided the care	>85	88.00	89.00	90.00	91.76	89.69
The rate of patient / caregiver has received guidelines and calendar for the appointments' dates	100	84.00	89.00	92.50	88.24	88.44
The rate of patient/family's overall satisfaction	>85	88.00	90.00	97.50	92.94	92.11

involved at all stages from participation in thinking, decision-making, performing, evaluating and sharing the benefits of the two groups of patients and their families and the staff joined. The results in being able to use these key performance indexes in the actual work were effective. Similar is a study by Prasitrathsin[10], which reported that characteristics of the indicators are objectivity judging the value of the indicators under real conditions and with objectivity. Results were also consistent with a study by Srethapanich[11] which stated that there are three issues to be considered and included in the indicators, which are the ability to use in real time, are consistent with reality and revisable in order to get completed indicators.

The information technology was developed for use as a database in monitoring the indicators for quality of care for patients with cleft lips and palate as well as to indicate the quality of patient care. Monitoring systematically and continuously the indicators regarding quality of care for patients, promptness in patients' receiving care, being able to plan for care and treatment, finding the causes of any problems occurring or the tendency in the past to the present, and addressing relationships of the factors related to care that may have affect the quality of future care[12].

Therefore, the development and monitoring of information technology of indicators for quality care for patients with cleft lips and palate are useful and can be used as a tool for developing and improving the quality of patient care, services, support and the work of the organization that affect a patient's ongoing care by interdisciplinary teams, that will benefit patients further.

Conclusion and recommendations

Determination of the recording system, development and application of indicators of quality of care in patients with cleft lips and palate in Phase 1 needs to cover all aspects and all age groups of treatment. Eight indicators have been implemented with the patients who visited The Out-Patient Surgical room and the Tawanchai Centre at the Srinagarind Hospital. In a period of four months, only three key performance indexes have been achieved. The study in Phase 2 should analyse and revise all three indicators in Phase 1. In addition, the programs should be further developed to be able to enter data for automatic analysis.

There should be a set of indicators for quality of care even more in order to cover all aspects of quality of care and services. This would help to improve the efficiency of the service[13] including: 1) the material services including general status, environment and facilities; 2) ease of accessing services including providing quick services and uncomplicated procedures; and 3) trust in treating medical information with confidentiality such as physical examinations and so on.

What is already known on this topic ?

The key performance indexes for patients with CLP need to be developed to improve quality of care, to determine the outcomes, and to be used as a guideline for care provided by a multidisciplinary team.

What this study adds ?

Eight key performance indexes related to treatment and nursing care for patients with CLP were developed, and three of them have been achieved including: 1) the rate of patient/caregiver continuing follow-ups, 2) the rate of patient/caregiver's satisfaction with inquiries from the staff that provided care, and 3) the rate of patient/family's overall satisfaction. For the key performance indexes that could not be achieved at this time, the researchers and the multidisciplinary team will continue working on them by using all information that can be obtained at this time to develop a plan for patients. In addition, the index system by using information technology will be continuously used to record the data related to care for these patients and to monitor the outcomes.

Potential conflicts of interest

None.

References

1. Ruangsitt C, Phraserthsang P, Banpho Y, Lamduan W, Glathamnuay S, Nuwantha A. Incidence of cleft and cleft palate in three hospitals in Khon Kaen. Khon Kaen: Department of Orthodontics, Faculty of Dentistry, Khon Kaen University; 1993.
2. Chowchuen B. Interdisciplinary care of patients with cleft lip and palate. And congenital anomalies

of the face and skull. Khon Kaen: Siri Packaging Offset; 2004.

3. Pradubwong S. Cleft lip and palate patients by age interdisciplinary. Srinagarind Med J 2007; 22: 291-6.

4. Lekbunyasin A, Pradubwong S, Juntachum W, Udomthanasap S, Chowchue B. Statistical study of patients with cleft lip and palate was admitted to the nursing Year 1984-2007. Srinagarind Med J 2009; 24: 240-6.

5. Ministry of Public Health, The Thai Red Cross Society, National Health Security Office. Guide the implementation of the project "pretty sound" Honour 50th birthday anniversary of HRH Princess Maha Chakri Sirindhorn. 2nd ed. Bangkok: Printing Works Print; 2007.

6. The Healthcare Accreditation Institute (Public Organization). The hospital and health services complex issue anniversary celebrations 60 years (In Thailand). Nonthaburi: The Healthcare Accreditation Institute; 2008.

7. The Healthcare Accreditation Institute (Public Organisation). Spa & humanized healthcare part III to guide the implementation of the standard practice for hospitals and health services. Honor the 60th anniversary celebrations. Nonthaburi: The Healthcare Accreditation Institute; 2009.

8. Mongkholthawornchai S, Pradubwong S, Augsornwan D, Pongpagatip S, Rirattanapong S, Prathumwiwattana P, et al. Nursing care system development for patients with cleft lip-palate and craniofacial deformities at Srinagarind Hospital. J Med Assoc Thai 2012; 95 (Suppl11): S49-54.

9. Ramasutra P. Participatory action research ASEAN Institute for Health Development. Bangkok: Mahidol University; 2002.

10. Prasithirathapan S. Methodology of social science research. 12th ed. Bangkok: Chulalongkorn University; 2003.

11. Sethapanich N. Development of indicators and review process. In: Yamsakul N, Keiwkarnka B, Nimit-Arnun N, editors. The seminar, bureaucratic reform ONEC. 4th (Academic); 1997 Mar 12-14; Dusit Resort and Polo Club, Phetchaburi; 1997.

12. Jeerapat W. Information technology of nursing and health. Bangkok: Chulalongkorn University; 2001.

13. Junthakarnbundit P. Developing indicators of quality patient service. Community Hospital. J Nurs Health. 2011; 5: 80-91.

การพัฒนาและติดตามสารสนเทศตัวชี้วัดคุณภาพการดูแลผู้ป่วยปากแหว่ง เพดานโหว่ ห้องตรวจศัลยกรรมและศูนย์ตะวันฉาย โรงพยาบาลศรีนครินทร์: ระยะที่ 1

สุมาลี พงศ์ผกาทิพย์, สุธีรา ประดับวงษ์, บวรศิลป์ เชาวน์ชื่น

ภูมิหลัง: ภาวะความพิการปากแหว่งเพดานโหว่ ใบหน้าและศีรษะมีผลกระทบต่อโครงสร้างของใบหน้า การดูแลรักษาขึ้นอยู่กับช่วงอายุและเวลาที่เหมาะสม (critical time) โดยอาศัยทีมสหสาขาวิชาชีพมาร่วมกันดูแล จึงได้ทำการศึกษาการพัฒนาและติดตามตัวชี้วัดที่เกี่ยวข้องกับการดูแลรักษาและพยาบาลผู้ป่วย และพัฒนาระบบสารสนเทศเพื่อใช้เป็นฐานข้อมูลในการติดตามตัวชี้วัดอย่างเป็นระบบ พร้อมที่จะรายงานผลลัพธ์ของการดูแลรักษาได้ทันเวลา เพื่อนำข้อมูลตัวชี้วัดมาพัฒนาปรับใช้ในการวางแผนการดูแลรักษาผู้ป่วยของทีมสหวิทยาการ

วัตถุประสงค์: เพื่อการกำหนด พัฒนาระบบสารสนเทศ บันทึกและนำไปใช้ของตัวชี้วัดคุณภาพการดูแลผู้ป่วยปากแหว่ง เพดานโหว่ที่มารับบริการ ณ ห้องตรวจศัลยกรรมและศูนย์ตะวันฉาย โรงพยาบาลศรีนครินทร์

วัสดุและวิธีการ: เก็บรวบรวมข้อมูลเชิงคุณภาพและเชิงปริมาณ 1) ทำการวิจัยในพื้นที่ (field research) โดยการประชุมและใช้กระบวนการเรียนรู้ (problem-learning process) แบบมีส่วนร่วมในทุกขั้นตอนของ กลุ่มผู้ป่วย/ครอบครัว และกลุ่มเจ้าหน้าที่ผู้ร่วมดูแล แล้วนำข้อสรุปที่ได้มากำหนดตัวชี้วัดและพัฒนาระบบฐานข้อมูลเพื่อติดตามบันทึกตัวชี้วัด วิเคราะห์ข้อมูลโดยใช้ content analysis และร้อยละ

ผลการศึกษา: 1) อัตราผู้ป่วยที่เข้ารับการผ่าตัดซ่อมแซมปากแหว่งตามช่วงอายุเฉลี่ยร้อยละ 93.75 2) อัตราผู้ป่วยที่เข้ารับการผ่าตัดซ่อมแซมเพดานโหว่ตามช่วงอายุเฉลี่ยร้อยละ 92.50 3) อัตราผู้ป่วย/ผู้ดูแลเข้าใจในแผนการรักษาเฉลี่ยร้อยละ 83.01 4) อัตราผู้ป่วย/ผู้ดูแลได้รับการเตรียมความพร้อมในการดูแลก่อนผ่าตัดเฉลี่ยร้อยละ 84.72 5) อัตราผู้ป่วย/ผู้ดูแลติดตามการรักษาอย่างต่อเนื่องเฉลี่ยร้อยละ 92.06 6) อัตราความพึงพอใจของผู้ป่วย/ผู้ดูแลในการสอบถามข้อมูลจากเจ้าหน้าที่ผู้ดูแลเฉลี่ยร้อยละ 89.69 7) อัตราผู้ป่วย/ผู้ดูแลได้รับคู่มือและปฏิทินการนัดเฉลี่ยร้อยละ 88.44 และ 8) อัตราความพึงพอใจภาพรวมของผู้ป่วย/ครอบครัวเฉลี่ยร้อยละ 92.11

สรุป: ในระยะที่ 1 ศูนย์ตะวันฉายและห้องตรวจศัลยกรรมได้กำหนดตัวชี้วัดคุณภาพการดูแลฯ ไว้ทั้งหมด 8 ตัว ซึ่งพบว่ามี 3 ตัวที่บรรลุเป้าหมายตามที่ตั้งไว้ สำหรับการดำเนินงานในระยะที่ 2 จะพัฒนาระบบสารสนเทศในการลงข้อมูลพื้นฐานและตัวชี้วัดแล้ว ระบบจะสามารถประมวลผลเป็นค่าร้อยละโดยทันที