

## Development of Same Day Surgery Service System in the 10<sup>th</sup> Public Health Region, Thailand

**Thida Yukuntawaranun\***

*Department of Anesthesiology, Yasothon Hospital, Yasothon, Thailand*

**\*Corresponding Author:** Thida Yukuntawaranun, Department of Anesthesiology, Yasothon Hospital, Yasothon, Thailand.

**Received:** January 24, 2018; **Published:** April 11, 2018

### Abstract

**Background:** One of unnecessary tasks in the public hospital is the loss of resources to care patients without the need to be admitted to hospital. Same day surgery service system reduces the length of unnecessary hospital stay while standards of patient care are maintained.

**Objectives:** To develop the service system of same day surgery in order to implement in the 10<sup>th</sup> Public Health Region and study of reducing the length of unnecessary hospital stay and patient safety.

**Methods:** The study was conducted and prepared guidance to serve same day surgery by using the service of Yasothon hospital, as a prototype. Defined data collection and analysis.

**Results:** The target patients were 3,750 cases to be served in the same day surgery in a number of 234 cases. It reduced the unnecessary hospital stay for 339 days. The service quality indicators did not exceed the target set.

**Conclusions:** The participating hospitals were able to provide the same day surgery service system, patients were safe and the length of unnecessary hospital stay was reduced in 59.14 percent from the standard of normal hospital stay, represented in the average of 1.45 days per patient.

**Keyword:** *Same Day Surgery*

### Introduction

The circumstances of public hospitals of the current health [1] also found that many hospitals have financial crisis in level 7 (low liquidity and negative net reserves) with low ratio of professional personnel, especially the small number of nurses, to an individual patient. While complications from medical treatment which contribute to the higher cost of healthcare, and complaints are not likely to decline.

There are wide range of concepts to solve the chronic bad cycle (Insufficiency => Overburdens => Complications => Insufficiency), the lean management system [2] as one of the concepts is to reduce the burden of unnecessary work. Apparently, the unnecessary workload in the public hospitals is the loss of resources for patients who are not required admission in the hospital. Consequently, the hospital has to offer patients as same day surgery service system in order to reduce unnecessary hospital stay, while the standard of patient care is maintained. Same day surgery service is efficient system which is the beneficial concept in other countries, e.g. in America, there are same day surgery centers more than 5,000 locations across the country [3]. However, there are many restrictions that cannot be provided in the context of Thailand [4]. In particular, compensation for medical bills is different between outpatients and inpatients services. However, the "pros needed" is to relieve overcrowding and reduce workload and costs. Therefore, Yasothon Hospital has been developing same day surgery service system since the fiscal year, 2011 and supported by the National Health Security Office (NHSO) in the fiscal year, 2013 as a

pilot hospital. To study the feasibility in the service system. Finally, the model of development, Yasothon Prototype, is offered for services in all provinces in the 10<sup>th</sup> Public Health Region. To hope that if it work, same day surgery service system will be able to provide across the country.

## Methods

Thailand is divided into 13 public health regions, 5-7 provinces in each region. This research was conducted to implement a same day surgery service system, Yasothon prototype, across all provinces in the 10<sup>th</sup> Public Health Region and collected information services from participating hospitals. As a result, the data were analyzed using descriptive statistics and the average percentage for a possible reduction of the length of stay and patient safety. Target groups were the patients who received services of same day surgery in participating hospitals in the fiscal year, 2014. The process of conducting the research was as follows:

### 1. The process of preparation

- Preparation of the model of development, Yasothon Prototype. In brief, the concepts are presented as follows:
  - Indications for services  
Selection of patients: patients with ASA class I-II, BMI < 30, having a caregiver at home. Selection of procedures: no difficulties with less than 90 minutes, no need for blood transfusions, and available in the morning.
  - Patient preparations before surgery for the same day surgery  
Routine pre-operative evaluations and investigations.

Ages ( year )	Males	Females
< 40	-	Urine pregnancy test
40 - 49	EKG	Urine pregnancy test , Hct.
50 - 64	EKG, CXR	EKG, CXR, Hct.
≥ 65	EKG, CXR, Hct., BUN, Cr, BS	EKG, CXR , Hct., BUN, Cr, BS

**Table 1:** Guideline for preoperative laboratory evaluation in same day surgery.

*\*\* The other specimens are in the discretion of the surgeon and anesthesiologist to assess the patient.*

- Guidelines for patient counselling.
- Guidelines for treatment and follow-up of patients after surgery.  
The practical guide provides for staffs with care guidelines for the most common complications after surgery such as drowsiness, nausea and vomiting, pain, post-operative bleeding. These guidelines are also for health promoting district hospitals for community hospitals and Emergency Medicine Services with an emergency number, 1669.
- Quality indicators indicating that the service system is appropriate for implementation.
  - The rate of postponed surgery is less than one percent in each case as follows.
    - NPO time is not enough.
    - Patient preparations cannot be on time.
    - Patients with the disorder should be corrected before anesthesia.
  - The rate of complications during and after surgery are not more than the standard of normal services.
  - The flow chart of service which is very important to set one-stop service system.
- The service system was offered to the NHSO in order to compensate for medical expenses from the fund for in patients, with DRG system. Instead of payment from the fund for outpatients, capitation per person per year.

- Properties of the hospital to join the project are required anesthesiologist, have a same day surgery unit, and have a clear service system. Therefore, the hospitals are supported by the NHSO, 300,000 baht for the preliminary system. Moreover, additional special compensation from 8,000 - 8,400 baht per RW to 9,000 baht per RW in seven target groups of diseases (7 DRGs) which consist of hernia procedure, anal procedure, breast biopsy and local excision, circumcision, testis procedure, skin and subcutaneous procedure, remove internal fixation device except hip and femur.
- Established network of OR and anesthesiology in the 10<sup>th</sup> Public Health Region in order to provide practitioners with the knowledge to understand the “pros needed” for cooperation in the system.
- Provided the second workshop meeting at participating hospitals. Hence, the same day surgery was specific in the context of each hospital and was able to actually perform the service.

### 2. Service operations follow the guidelines

- Participated with the NHSO to visit and rate participating hospitals in order to acknowledge related problems, propose solutions and support policy through the methods of compensation for medical expenses.
- Promoted knowledge and understanding in the same day surgery services by organizing academic conferences, attended the presentation and lecture in the district arena and the national level.

### 3. Data collecting and processing

- All participating hospitals established a same day surgery unit (or other related names) with responsibilities for the service of same day surgery, for patients' registration, for collection of the quality indicators and transmission of the information to NHSO and the research team.
- Processing and analyzing performance data from
  - Same day surgery unit in the participating hospitals, all patients.
  - The NHSO in the 10<sup>th</sup> Public Health Region, only patient in 7 DRGs.

## Result

### Participating hospitals in research projects

Participation consists of nine hospitals covering 5 provinces, all provinces in the 10th Public health Region.

### The ability to provide services

All participating hospitals take the concepts and guidelines for the same day surgery using “Yasothon prototype” for the application and service model to the specific context of each hospital.

### Numbers of patients

The number of patients in the 7 DRGs with the 3,750 cases was provided with the same day surgery service in a number of 234 cases as 6.24 percent, showed that many of patients have not yet reached the service. However, data from each hospital with patients in a total of 2,557 cases, including endoscopy, were effectively provided service. Therefore, there are other procedures for the system providing the same day surgery with patient safely (Table 2).

### Reducing the unnecessary hospital stay

The same day surgery service for patients in 7 DRGs, 234 cases, showed that the standard of hospital stay (wtlos) in the DRGs-based admitted to the hospitals for the 573 days. While, the unnecessary hospital stay reduced in a number of 339 days, representing 59.14 percent from the standard of normal hospital stay in the average of 1.45 days per patient. In consequence, the project of same day surgery in the 10<sup>th</sup> Public Health Region can reduce the unnecessary hospital stay in a number of 2,557 patients for 3,707 days (Table 2).

Procedure	Srisaket		Ubon Ratchathani		Yasothon		Umnatcharoen		Mukdahan		Total in the 10 <sup>th</sup> Region.		wtlos	Normal hospital days	Reduced hospital days
	Total	SDS	Total	SDS	Total	SDS	Total	SDS	Total	SDS	Total	SDS			
Hernia 0610	274	5	527	7	194	5	109	-	86	-	1,190	17	2.78	47.26	30.26
Hernia 0611	7	-	42	-	6	-	5	-	3	-	63	-	4.00	-	0.00
Hernia 0612	45	1	155	1	23	4	15	-	24	-	262	6	2.00	12.00	6.00
Anal procedure 0609	54	1	240	-	64	2	55	-	34	-	447	3	2.92	8.76	5.76
Breast biopsy and local excision 0904	26	2	170	125	15	6	49	-	22	-	282	133	2.16	287.28	154.28
Circumcision 1205	51	-	66	7	11	7	21	-	7	-	156	14	1.86	26.04	12.04
Testis procedure 1203	58	-	142	-	20	3	10	-	14	-	244	3	2.84	8.52	5.52
Skin and subcutaneous procedure 0909	95	8	345	6	101	21	52	1	44	1	637	37	3.22	119.14	82.14
Remove internal fixation device except hip and femur 0819	111	3	244	3	40	15	46	-	28	-	469	21	3.06	64.26	43.26
Total	721	20	1,931	149	474	63	362	1	262	1	3,750	234		573	339
Data from SDS unit (all procedures)		137		2,175		236		1		8		2,557			3,707

**Table 2:** Number of patients who received the same day surgery service in the 10<sup>th</sup> Public Health Region in the fiscal year 2014.

Normal hospital days = a number of group of the diseases × wtlos group of disease SDS = same day surgery.

Reduced hospital days = a number of group of diseases × (wtlos group of disease - 1) wtlos (weight of length of stay) = average stay standard.

### Patient Safety

The data on quality indicators did not exceed the target set, the standard of quality indicators for normal service system. Consequently, the same day surgery service provided patients safely and the standard of same day service was not lower than the standard of normal service system (Table 3).

Quality Indicators	Targets	Results	
		Cases	Percent
1. The rate of postponed surgery	≤ 1%		
a. NPO time is not enough.		0	0
b. Patient preparations cannot be on time. Patients with the disorder should be corrected before anesthesia.		0	0
c. Others		9	0.35
		2	0.08
2. The rate of postoperative complications. [Due to the poor outcomes of medical treatment, the patients were admitted.]	≤ 1%		
a. N / V		1	0.04
b. Pain		12	0.47
c. Bleeding		4	0.16
d. Others (some patients wanted to admit).		9	0.35
The incident of re-admission in 48 hours after surgery	≤ 1%	1	0.04

**Table 3:** Results of service quality indicators from the number of patients in the region with 2,557 cases.

### Discussion

The advantages of the same day surgery services have been proven to be acceptable, especially in many countries. There are advantages for the public hospitals in Thailand to decrease unnecessary hospital stay, costs and the workload. In the research findings, the participating hospitals were able to provide patient safety in the same day surgery service as same as the normal surgical services. Nevertheless, a lot of patients are still unable to access the same day surgery service.

Because Yasothon Hospital has been developing the same day surgery service, since the fiscal year of 2011 including the issue of assessment and monitoring projects. So the information found that the remaining restrictions which make difficulty providing the services in the public hospitals, were due to many causes. As follows

1. Ignorance, misunderstanding of colleagues in terms of service standards and the advantages of the system, so there are fewer cooperation for sending patients into the service system.
2. Patient behavior in most cases also accustomed to the hospital stay before the surgery.
3. Lack of supportive policy. Because it is service system, so it has to cover other management systems such as medical records, patient appointment system, reimbursement fees, etc. In case, the administration does not support, the opportunity of successful is difficult.

As a result of information by the NHSO [5], serving the UC patients across the country (excluding in the 13<sup>rd</sup> Public Health Region (Bangkok) and the public hospital out of the Ministry of Health). In the fiscal year of 2014, patient treatment by surgery was in total of 774,326 cases with the patients in 20 DRGs (target diseases with special compensation of the fiscal year, 2015 up from 7 DRGs in the fiscal

year of 2014) to 102,439 cases (13.23%). Therefore, in each year, hundreds of thousands of patient cases may be able to be provided with the same day surgery services.

The data of unit cost from the hospitals in the 10<sup>th</sup> Public Health Region in the fiscal year, 2013 [6] that the average cost in the hospital stay was 3,508 baht as the cost for unnecessary which would not occur if the patient was not admitted, such as rooms, food and nursing care by approximately 1,827 baht per day. In addition, this study found that the average length of hospital stay decreased in a number of 1.45 days in each patient. Therefore, if the same day surgery service system is implemented across the country, it can save the overall health cost of the country (1,827 THB x 1.45 days x 102,439 patients) in each year by approximately 270 million baht at least, excluding indirect costs for patients and their relatives.

### Conclusions

Participating hospitals in the project were able to develop the same day surgery services using the Yasothon prototype in order to regulate and adjust to the context of each hospital. The patients were safe while the standard of patient care was maintained. And it reduced the length of unnecessary hospital stay 59.14 percent from the standard of normal hospital stay, represented in the average of 1.45 days per patient.

### Acknowledgment

The author would like to thank the network of OR and anesthesiology in the 10<sup>th</sup> Public Health Region for their cooperation and thank the National Health Security Office (NHSO) for supporting the budget and pushing the service into the national policy.

### Bibliography

1. Muk Sri Sothon Charoen. "Summary of Inspection and Supervision in the First Round of Fiscal Year 2015". The Ministry of Public Health. 10<sup>th</sup> Public Health Region (2015).
2. Guide to Lean Management Agency for Yasothon Hospitals of Fiscal Year 2013. Yasothon: Yasothon Hospital (2013).
3. Outpatient Surgery. WIKIPEDIA. The Free Encyclopedia (2014).
4. Thida Yukuntawaranun. "Development of ADOP (Admission on day of procedure) System in Surgical Department of Yasothon Hospital". *Thai Journal of Anesthesiology* 33.1 (2007): 21-28.
5. Progress report on Same Day Surgery Project. NHSO Board Meeting. National Health Security Office, Government Center, Bangkok (2014).
6. Thida Yukuntawaranun. "The Analysis of Study in the Unit Cost of the Hospitals in the Fiscal Year of 2013 in 10<sup>th</sup> Public Health Region". Conference of the Executive Committee of the Finance in 10<sup>th</sup> Public Health Region. Conference room of the 10<sup>th</sup> Public Health Region Office. Ubon Ratchathani (2014).

**Volume 4 Issue 5 May 2018**

**©All rights reserved by Thida Yukuntawaranun.**