

Reduction of Duration of Patient Transfer from SICU Unit to Other Wards

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Introduction

SICU is a surgical ward in Chulalongkorn Hospital. Our hospital is a department of the Thai Red Cross Society, under the patronage of Her Majesty the Queen. SICU is available for critically ill patients such as those having heart surgery,

organ transplants, or other major operations, or for those who have suffered traumatic experiences. We care for about 750 patients annually. If the post surgical conditions of any patient occupying one of the hospital's 1650 beds becomes very serious, he/she is sent to SICU for more thorough care

The Group			
1. Miss Surangkna Puttiporn	leader	Average group age	26 years
2. Miss Waleeporn Winitchal	secretary	Average work experience	5 years
3. Miss Narissara Chundorn	group member	Average level of education	BA Degree
4. Miss Vilalvun Pinyocheep	-		
5. Miss Daungporn Suvunkeha	-		
6. Miss Chetaya Boonthertup*	-		
7. Miss Saingun Aniwattanont	-	Group Advisors:	
8. Miss Aree Suwaroporn	-	Mrs. Penchun Saenprasarn	
9. Mrs. Songsri Chantarudee	-	Miss. Nongluk Pongpisulth	
10. Miss Nadeen Lanol	-	Miss. Sunsanee Nulthesri	

Our QCC team was originally established from February-April 1989 (approximately 12 weeks), and our project has been registered since November 23, 1988. QCC meetings are usually held twice a month on Tuesday: during the first and the third weeks of the month. Our meetings usually take about 2 hours, and are held after working hours. Membership attendance at the meetings has been from 80-100%.

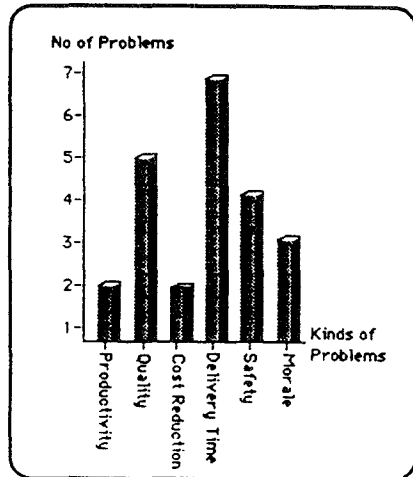


Figure #1

Theme Selection

23 problems were identified during a brainstorming session, and these problems were then sorted into 6 categories, as shown on the affinity diagram to the left.

According to Figure #1 on the left, problems most often occurred involving the patient's delivery time. Thus we decided to concentrate on this problem.

We also thought we could accurately define and act on the causes of patient delivery time problems better than we could with the other problems. Apart from identifying a problem with the affinity diagram, we had to consider what problem had the most impact on the nurses in our unit by excluding irrelevant problems and prioritizing the rest, keeping in mind to identify the high priority problems that could be solved with relative high frequency. This is demonstrated in Table #1 on the following page.

Circle Name : SHORT CIRCUIT	Started : NOV. 23, 1988
Our QC Circle consists of <u>10</u> members.	(Female : <u>10</u> Male : <u>--</u>)
Average age of our QC Circle members is <u>26</u>	(Youngest : <u>24</u> Oldest : <u>34</u>)
QC Circle meeting takes place : (<u>x</u>) after working hour	() during working hour.
QC Circle meeting is usually held <u>2</u> times per month.	One meeting takes <u>120</u> minutes.
Our QC Circle has already completed _____ subjects before this case report.	
Visual aids to be used in this presentation : (<u>x</u>) OHP	(<u>x</u>) Slides () None
Company Location : SICU, CHULALONGKORN HOSPITAL, THAILAND	

Problems	Convenience for the aim			Probability of success				Appreciation Points
	Expected result	Survability for the policy	Total points	Participate	Technical difficulty	Material expense	Total points	
1. Shortage of needed medicine	4	3	7	3	3	2	8	56
2. Patients have stress while being transferred	3	4	7	3	2	2	7	49
3. Shortage of nursing personnel for organ transport surgery	3	3	6	2	3	2	7	42
4. Personnel lack of encouragement	3	1	4	4	3	2	9	36
5. Noise annoys patients	3	3	6	3	1	2	6	36
6. Medical electronic equipment unprepared	4	4	8	4	3	2	9	72
7. Much time spent transferring patient	4	5	9	4	4	5	13	117

Table #1

Survey of Situation Problem
Reasons for Selecting This Problem

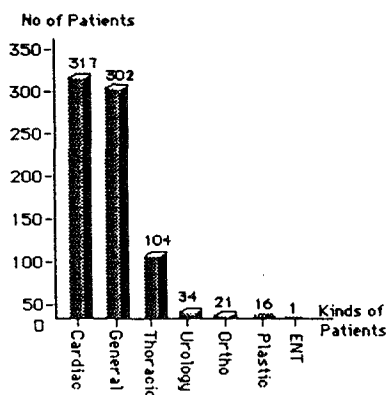


Figure #2

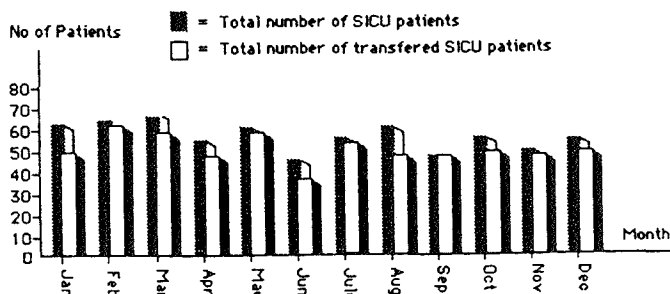


Figure #3

Figure #2 above shows that most patients admitted to SICU are open-heart surgery patients. Thus speedy and careful transfer of these patients is essential. Figure #3 on the other hand, shows the numbers of newly admitted patients and those who are transferred. It can be seen that the ratios for the two groups are nearly the same. The average of newly admitted patients per month is 58, while the average of transferred patients is 52 per month.

After careful observation of patients transfers, we found that delays receiving new patients were caused by: Medical electronic equipment not being ready; reception area being unprepared; and, too much time spent in patient transfer. A thorough survey of the problem Table #2 (below) showed what was really happening in the ward during the different days and shifts of the week.

Reason	Day		Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday	
	Shift		D	E	D	E	D	E	D	E	D	E	D	E	D	E
1. Medical electronic equipment not ready.			2	-	1	-	1	-	1	-	2	-	3	-	1	-
2. Unprepared reception area			2	-	2	-	1	-	2	-	3	-	1	-	1	-
3. Much time spent in patient transfer.			5	-	3	-	7	-	2	-	10	-	2	-	3	-
D, E, N = Day, Evening, & Night, respectively																
Total N (number of patients) = 61 people = 10 Units																

Figure #4

Figure #5

Figure #6

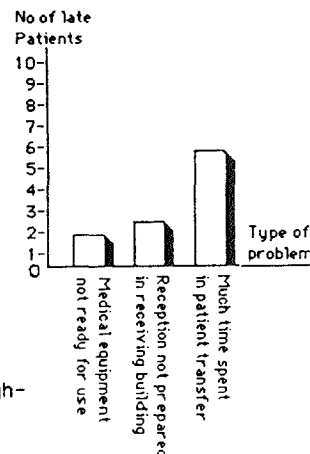
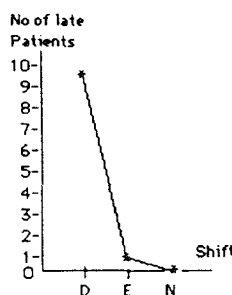
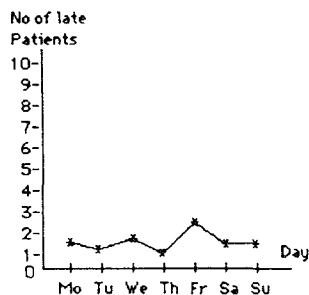


Figure #6 above shows that the most frequent problem delaying reception of new patients, according to the nurses, is the time spent taking the patient from SICU to another ward. Then when we studied this problem more thoroughly, we discovered the problem occurred almost exclusively during the day (Figure #5); however, we discovered there was no significant difference between the different days of the week (Figure #4).

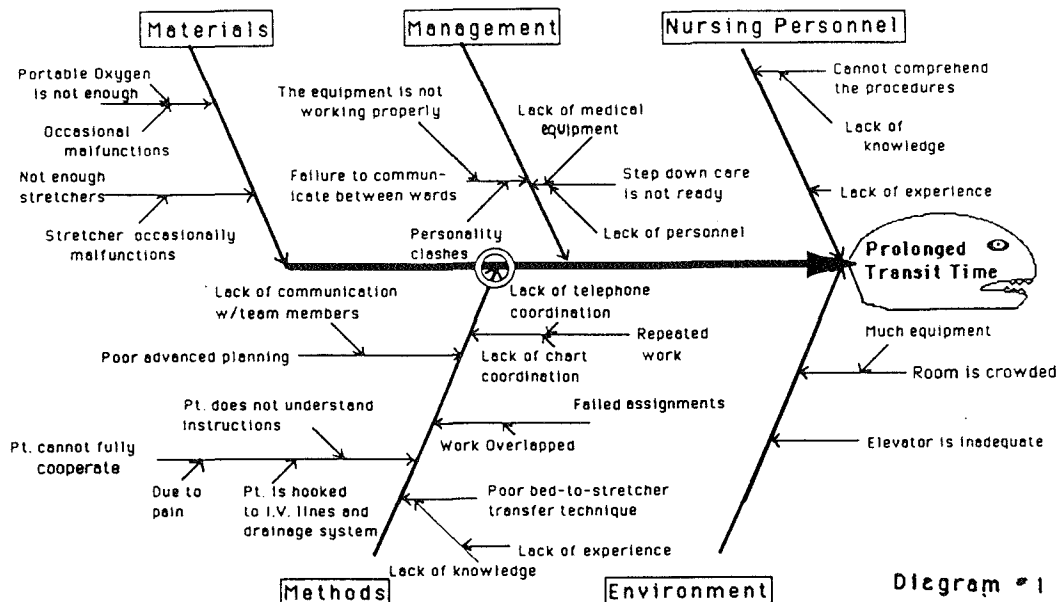


Diagram # 1

Aim determination

Our aim was to reduce the duration of patient transfer by at least 40%.

The reason we set such a high target is that members of the Short Circuit Group tried applying QC Circle examples previously. Their findings are as follows in Figure # 7.

Before implementing the project, transfer time was 5440 seconds; afterwards the transfer time was 2382 seconds. This is a reduction of 56.3%; however, this was accomplished by only members of the Short Circuit Group. We figured that when we brought the real activity into the unit, there would be errors and unforeseen problems. Thus we set a target for only 40%.

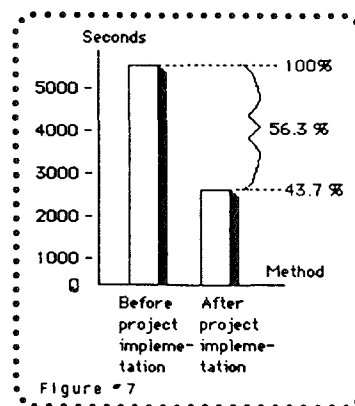
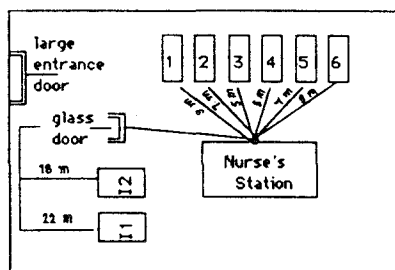


Diagram #2- SICU Floor Plan



1-6 and I1 & I2 are the patient beds.

Activity Plan

The activity was planned to last from February to April, 1989.

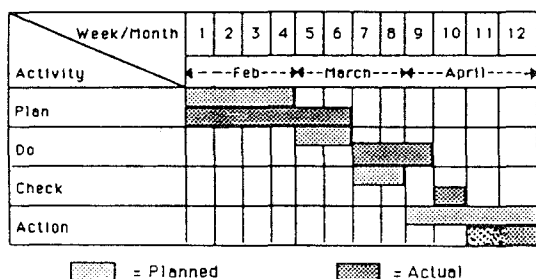


Table # 3

Table #4 below shows the work procedure, the distance travelled, and the time spent during patient transfer from SICU before project implementation. (*These notes and times come from the observations of nurses in the unit.)

Work procedure for patient transfer before QCC implementation	Distance (meters)	Time (sec)	Symbol
			○ ◇ □ ▽
1. Estimation of pt.'s signs		888	
2. Giving care according to new treatment		780	
3. Walking from pt.'s bed to nurse's counter	10	16	
4. Collecting flow sheets for chart		654	
5. Walking to pt.'s bed	10	16	
6. Giving advice to pt. for the return to ward		312	
7. Removing E.K.G.		72	
8. Removing C.V.P.		43	
9. Adjusting the rate drop of I.V. fluid		66	
10. Collecting x-ray and blood card		72	
11. Walking back to nursing counter	10	16	
12. Putting blood cards in the chart		5	
13. Telephoning the receiving ward		276	
14. Waiting for proper personnel in receiving ward		1,458	
15. Telling orderly to prepare pt.'s departure		186	
16. Walking back to pt.'s bed	10	16	
17. Preparing drain cords for departure		246	
18. Putting pt. on moveable bed		318	
Totals:	40 m	5440 s	

Table # 4

After these 18 work procedure steps were analyzed, we formed the plans to solve all of our perceived problems

through workstudy processes. An example of this follows in Table #5.

20 Questions as a Problem Solving Technique:

Collecting Flowsheets and Putting them in the chart					
Date of Analysis: 14 February 1989					
	Present method	Reason	Other choices	Method chosen	Improvement
Aim:	What to do? Collecting the pt.'s old flow sheets and putting them in the chart.	Why doing it? Chart must accompany pt. during transfer	Can do something else? No	What should be done? Same method	Nurse taking charge of the pt. by collecting flow sheets and putting them into chart, then making list of medicine and things for pt., putting medicine list and x-ray notes together, writing pt. transfer report. After giving advice to pt., nurse does not need to conclude pt.'s signs in nurse's notes and in intake output sheet, but she gives flowsheet to next in turn.
Place:	Where doing it? At the same counter	Why there? Pt. information & documents are near counter	Can do somewhere else? No	Where should it be done? Same place	
Step	When doing it? When a doctor allows pt. to return to original ward	Why doing it at that time? We know pt. certainly to leave SICU ward	Can do it at another time? Yes	When should it be done? When doctor estimates pt. signs and allows pt. to leave or after pt. has had necessary care	
Person	Who does it? Nurse taking charge of the pt.	Why that person? She knows details of pt.	Can another person do it? No	Who should do it? Same person	
Procedure	How to do it? Summarize pt.'s signs from flow sheet into nurse's note and in the intake output sheet for the next turn: -order flow sheets -put x-ray notes together w/medicine list -make list of medicine and things for pt.	Why do that? For the convenience of the patient reception	Is there another method? Yes	What should be done? Do not summarize pt.'s signs in nurse's note and in intake output sheet	To facilitate work, sheet with correct and complete information need to be given to next in turn.

Table #5

Table #6

Work Procedure after solving problem by using the technique of 20 questions:	
1. Estimation of patient's conditions and signs	Only one nurse is responsible for a patient, because she gives direct care to the patient and no one else can do so in her place.
2. Giving care according to new treatment	Nursing personnel look after the patient so that his meals are given, while the patient has his medical injection from the nurse in charge, who receives orders from the doctor.
3. Giving advice to patient	The nurse responsible for the patient does this while giving care and estimating the patient's signs.
4. Walking from patient bed to nurse counter	The same nurse goes to the nurse counter for next tasks.
5. Calling up the ward where the patient will be transferred and ask the personnel to prepare the patient's reception	Generally transferred patients remain in the same building; therefore, the nurse in charge can coordinate many transfers.
6. Collecting the flow sheets and putting them in the chart	The nurse must reduce the patient's detailed information in her own notes and in the intake output sheet so that the working procedures will be cut down. Then she should give the flow sheet with the pt.'s information to the next in turn.
7. Informing orderlies to prepare for the patient transfer	The nurse in charge does this because she knows the transfer schedule.
8. Visiting the patients at their bedside according to the chart	The nurse responsible for the pt. does this

9. Removing the E.K.G. cord	The nursing personnel or assistant nurse takes charge of this activity while moving the patient to the adjustable bed. (Note: the E.K.G. cord must be removed for cleaning)
10. Removing C.V.P. cord	The nurse responsible for the pt. does this.
11. Adjusting the drop rate of intravenous fluid	This is performed by the same nurse, because she makes the treatment plan herself
12. Collecting the X-ray films and blood cards and putting them under the adjustable bed	This is performed by an orderly under supervision of the nurse in charge.
13. Preparing drain cords for the transfer	The nursing personnel prepares equipment such as artery clamps and plastic bags. The nurse responsible for the pt. prepares the drain cords herself.
14. Putting the patient on the adjustable bed	Using lift sheet technique

Work Procedure for patient transfer After QCC Project Implementation	Distance (meters)	Time (seconds)	Symbol ○▶▷□▽
1. Estimation of patient's sign	10m	440	
2. Giving care according to the new treatment		344	
3. Walking back to the nurse's counter		7	
4. Collecting flow sheets and putting them in the chart		484	
5. Going to the pt.'s bed with the chart	10m	7	
6. Removing C.V.P. cord		32	
7. Adjusting the drop rate of intravenous fluid		37	
8. Preparing drain cords for the transfer		33	
9. Putting the patient on the movable bed by using the lift sheet technique		80	
TOTALS:	20 meters	1464 seconds	

TABLE #8

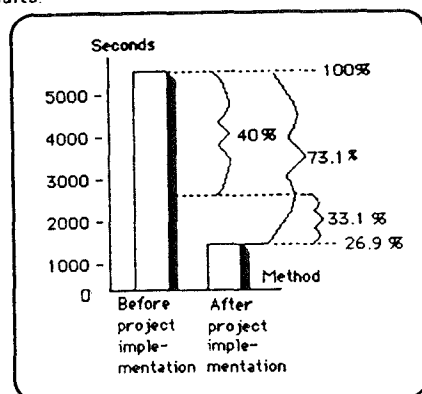
The above information in Table #8 shows the work procedures for patient transfers after QC Circle project

implementation. The times are the total amounts worked by the nurses in the unit.

Activity		Before Solving	After Solving	Reduction
Action	○	12	6	6
Movement	◇	4	2	2
Waiting	□	1	0	1
Checking	▽	1	1	0
Filing		0	0	0
Distance(metre)		40	20	20
Time(second)		5440	1464	3976

Table #9 DISCUSSION

Below, Figure #8 compares the targetted and actual results.



Standard of working procedures for patient transfer

At first before moving the patient out of the SICU ward, the nurse responsible for the patient had to estimate, in the company of a doctor, the patient's physical and mental signs. Now, she gives him medical care according to new treatments and advice from the doctor.

The next step is collecting and ordering the patient's notes, and updating the flowsheet at the nursing counter. This is because an accurate and complete flowsheet is needed for transfer.

Then, the nurse returns to the patient's bed and follows the steps in the notes for transfer; namely; removing the C.V.P. cord, adjusting the drop rate of the intravenous fluid, preparing the drain cords, and putting the patient on the adjustable bed by using the lift sheet technique.

Follow-up work

Members of the group will alternately check the duration of patient transfers. If they exceed 1464 seconds, with 640 seconds allowed for tolerance, in 15 cases, the group will have a meeting to discuss ways to improve their work procedure. A follow-up meeting will be held every three months.

Target Reduction-	40%
Actual Reduction-	73.1%
Difference-	33.1%

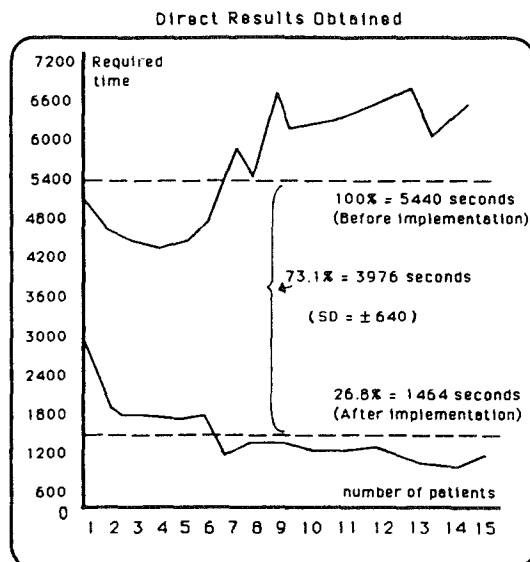


Figure #9

The diagram below illustrates how the walking distance has been reduced in half.

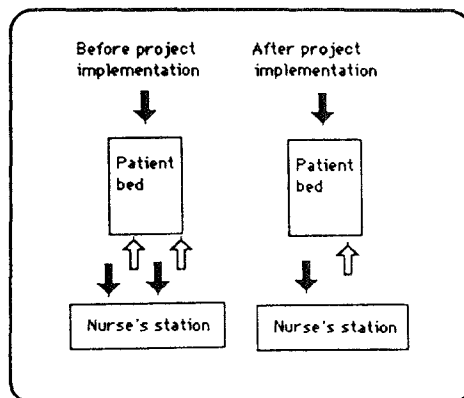


Diagram #3

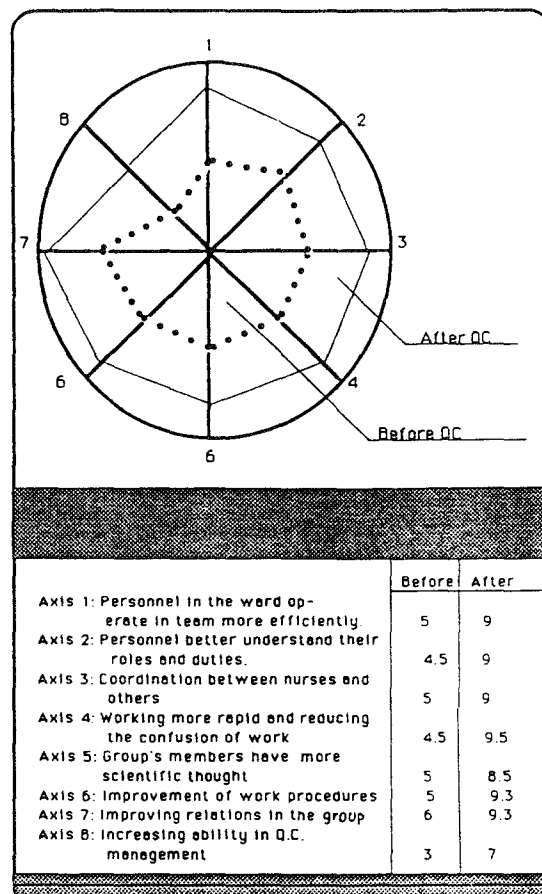


Figure #10

Other indirect results are shown in the radar chart, above in the opposite column (Figure #10)

Obstacles

80-90% of the group's members have little experience with QC activities and have never participated in any QCC training course. This issue needs to be addressed

Next Activities

Next we will try to solve the problem of why the medical equipment normally is not ready for use.

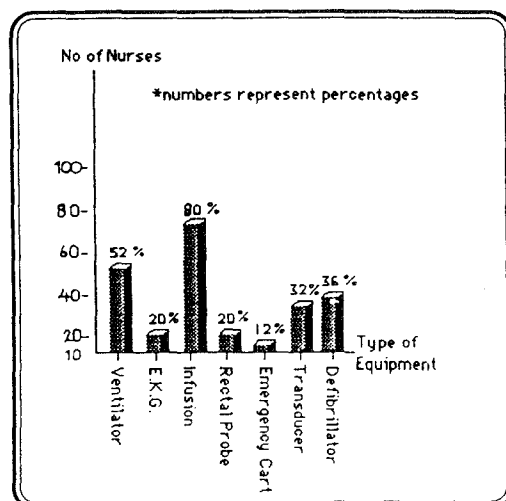


Figure #11 shows which types of electronic medical equipment causes delays when they are not ready for use. It is apparent that the ventilator machine is not ready for use 52% of the time. This is the problem we will face next. Although the infusion causes delays 80% of the time, it uses quite a bit of money and so solving this type of problem is not for our group to do.