CHAPTER II

PROJECT DESCRIPTION

RATIONALE

Data is an essential factor for planning and management. In any process of planning and management, there has to be a decision-making about what, where, when, for which result and how many resources to be used to accomplish the process. The accurate decision-making could be the best alternative for the best result. At the same time, a decision-making has to depend upon data discretion of the person who makes a decision. The data has to relate to the topic of a decision-making and make sense of it.

The data has to be rapid, accurate, reliable, complete and achieved at the suitable time of making a decision. (Statistics Department 1991 : 1)

Especially the data source is the most important thing for making effective health indicators. Besides the qualities of information such as accuracy and punctuality have to depend upon the recorders. (Bernard Benjamin : 1977)

Roi-Et Hospital is one of the organizations which provides significant data sources for making the indicators of people's health condition. The report of Medical Record Statistics Unit is the core work of various projects and plans which were defined in the National Public Health Plan.

Charts are used as a tool of collecting data for following, controlling and assessing a yearly work. (WHO 1980 : 55). Charts are also used for medical data in the hospital such as a report of inpatients and outpatients, a report of epidemiology and a summary of inpatients. The mentioned reports are also used as the important information for administration management, work control and assessment.

Charts are composed of a doctors' report and a result from any experiment for disease diagnosis. This shows that charts are the important tool of disease diagnosis for the present and future treatment. Recording on the charts has to be systemic and

orderly. This is the most important thing in aiming at the objectives of administration, education, research, statistics and medical test. (Edna, K. Huffman 1972 : 39 – 120)

At present, the problem of charts in Roi-Et Hospital is the lack of complete and accurate recorded charts (Ellis PM, etal 1991 : 343-345). It is found that doctors and nurses send records incompletely. There are an overdue and a loss of summary discharge charts including a delay of sending charts. The following results are that there is a lack of continuity in giving health services to people. This causes a bad quality of life to the patients who used to have cure records in Roi-Et Hospital such as records of patients who were allergic to medicine or who had their womb operated. When these patients return to the hospital for a new treatment, they have no treatment records. Or their treatment records are not sent to doctors for the preparation of new treatment. Thus doctors cannot know what medicine the patients used to be allergic to. Doctors cannot know whether they had their womb operated or not. Doctors might prescribe the medicine which the patients used to be allergic to. This will cause damages and a waste of time to patients.

The overdue of sending reports punctually to the Ministry of Public Health will also cause budget loss. The budget is allocated upon the criteria of the refund of high cost cure services by using the DRGs. The present problem shows that numbers of overdue and lost charts tend to increase gradually. There were 852 overdue charts and 480 lost charts in September 1999. This problem is similar to the concept of Somchat Toraksa (1978 : lecture) which is described as follows.

1. The improper behavior of personnel and administrators such as not realizing the importance of charts, lack of responsibility, lack of good attitude and lack of knowledge, comprehension and opinion for their own work.

2. The unsuitable system to assist work such as lack of work planning, lack of formal improvement, lack of formal job description, lack of organization chart, lack of a good cooperation between Medical Record Statistics Unit and other units, lack of work check and lack of personnel and material support.

The mentioned problems result in the patients' health condition and the budget of the hospital. This results in the hospital's development in order to obtain the hospital accreditation. The hospital applies TQM (Total Quality management) technique to gather all the organization resources for the improvement of work. If we are still reluctant to solve these problems, the hospital will be under standard of cure and service which will definitely lead to unqualified organization.

Anuwat Supachutikul (1998) mentioned the concept of TQM in the development and quality assurance that TQM is a joint concept of administration management and quality development. It gathers all of the organization resources for the improvement of work in response to customer's needs. This technique will be learnt and improved systematically and continuously. The TQM technique is the change of all the organization. The development of each unit will be an essential element to accelerate the change in organization level. On the contrary, the change force of organization level will help to accelerate the change of unit level.

Anuwat Supachutikul divided the significance of TQM into three levels as follows.

1. the principal level.

2. The expected results of the organization level.

3. The applied techniques and methods level.

What are the principals of TQM ?

The principal of TQM could be summarized into 7 features.

1. Customer Focus

Customers are the person who create our organization. The organization will be no use if there are no people who receive the benefit from our service. Our duty is to study customers' need, respond to their need and be ready to accept any criticism or admiration of our service.

2. Common Vision

The most important thing of quality development is that the organization can occupy the personnel's heart. This means that they can share their common vision. The organization has to give them an opportunity to create their goal and share their common vision. The importance of making vision and mission depends upon the process which can encourage the personnel to participate in the organization's activities.

3. Personnel Involvement / Empowerment)

Man is the most important resource of the organization. They are compared to an asset which increases its value continuously. Man can also improve their circumstance by developing their behavior, their attitude and their new value of life. But working individually cannot reach the potential goal. A team work should be created among personnel. Working together needs more than one factor. It needs essential skills, good comprehension of team members, group process of learning new organization culture and team empowerment. This will be the new system which encourages a team working.

4. Process Focus

Process is the continuous work phases which make service work most valuable. Most of the processes are so integrated that there are some problems among their transition. In stead of accusing the others' fault or searching for the guilty, focusing on these processes will receive good cooperation of establishment improvement. It is also a good way to protect personnel's fault in the future.

5. Scientific Process / Problem Solving Process

Using Scientific Process or the principle of Buddhist Noble Truth will be the learning of data analysis by reasoning and observing results. In practice, we can easily ask questions to ourselves about what problem it is, why we have to solve it and how can we solve it.

6. Leadership

Leader will be the most important person in bringing TQM into practice. He will also evaluate whether the TQM will be successful or not. Thus the leader has to study the TQM profoundly, show examples of supporting, following work, and adjust the administration system to meet continuous development.

7. Continuous improvement

The continuous change of technology and the newly need of customer make us improve our work continuously. Besides, continuous improvement will reflect our struggle of not being stagnant and our attempt for a better work in the future.

To achieve the goal of a quality hospital, the Ministry of Public Health has applied the Total Quality Management (TQM) to be a strategy of work improvement. The TQM is considered as one of a routine work for personnel in every level. Personnel need to improve their work according to the TQM to satisfy people who get hospital services both inner and outer the hospital.

The quality development by using TQM (Total Quality Management)

The process of quality development by using TQM (Total Quality Management) is the same process as the Buddhist Noble Truth, the scientific problem-solving and the medical process. The process begins with identifying problems, analyzing their causes, making hypotheses, testing hypotheses and applying the result of the test.

The cycle of quality development : Plan-Do-Check-Act

Plan = planning standard system work

Do = Working according the planning

Check = evaluating, revising, checking whether the activities respond to customer's needs.

Act = improving and setting standard of curing

The identified standard is the quality assurance. It can be seen that both the quality development and the quality assurance are continuous activities which depend upon each other. To reach this standard, 9 specific questions are used as follows.

1. Seek Opportunities for Improvement.

    What kind of service work will be first improved ?

    Who will be in charge ?

2. Define the System

    What is the work process of the system ?

3. Assess Current Situation

    How is the result of the present system ?

4. Analyzing the causes.

What are real causes of the poor quality or the uncertainty of the system ?

5. Analyzing the alternatives. What is the suitable alternative of the quality improvement ?

6. Try out Improvement. How can we prepare to try out the alternative without any obstacle ?

7. Studying the result. What do we learn from the experiment ?

8. Making standardize Improvement. How can we apply the result to reach the standardization ?

9. Standardization the continuous improvement. What else will be improved ?

GENERAL OBJECTIVE

To improve the system of discharge summary charts of the Inpatient medical record statistics at Roi-Et Hospital.

SPECIFIC OBJECTIVES

To decrease overdue summary discharge charts to be less than 10 %

To eliminate of summary discharge charts

STUDY DESIGN

This study will survey the causes of overdue and lost discharge summary charts at the Medical Record Statistics Unit of Roi-Et Hospital.

APPROACHES, METHODS AND/OR TECHNIQUES

This study is a participatory action research which applies Total Quality Management technique. The study is a joint view in developing the Inpatient Medical Record Statistics Unit of Roi-Et Hospital. This unit could not solve the problem alone. It has to coordinate with the Center of Hospital Quality Development in order to set up the Cross Functional Team. The members of this team come from various units which deal with problems of activity development in the hospital. The activities for improvement are as follows.

1. Setting cross functional team

2. Arranging meetings of cross functional team about overdue and lost of summary discharge charts.

3. Defining the system of summary discharge charts

4. Assessing current situation

5. Analyzing the causes of problem

6. Analyzing the alternatives

7. Trying out the alternatives

8. Studying the results

9. standardizing the improvement

DEFINITION OF TERMS

1. Charts mean summary discharge charts which comprise a health report, a summary of discharge patients, a health report record of patients' cure, a summary sheet, a temperature form, a doctor's order sheet, a laboratory check, a nurse's note, a schedule of medicine, a record of operation, a record of anesthesia, a record of progress and specific examine.

2. Overdue chart mean a chart which is summarized or not summarized by doctors and is not being sent to the Medical Record Statistics Unit within 10 days.

3. Lost chart means an overdue chart which is not sent to the Medical Record Statistics Unit over one month.

4. DRGs (Diagnosis Relate Groups) mean a system of grouping related inpatients who use the same resources. There are 500 groups. Each group has a relevant portion.

5. Inpatient means a patient who comes to the hospital and is admitted as an inpatient by a doctor.

6. Internal Medical Record Statistics Unit means the unit who is responsible for inpatient summary discharge charts. Its duties are to code group diseases and to collect all the information of inpatient summary discharge charts.

7. Roi-Et Hospital means the provincial hospital with 549 beds located in Roi-Et City District, Roi-Et Province.

8. Program MIC means the program which has been written in order to examine overdue and loss summary discharge charts of inpatients.

9. Cross Functional Team means the committee who is composed of personnel from various units of Roi-Et Hospital to coordinate in solving problems.

10. HA (Hospital Accreditation) means all of the hospital work, the hospital development, the hospital assessment and the hospital accreditation which aim to encourage organization development systemically.

Table 1 : Actitvity plan with time table

Activities																								
Month	Mar-00				Apr-00				May-00				Jun-00				Jul-00				Aug-00			
Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1. Setting Cross Functional Team	■																							
2. Define the system	▨																							
3. Assess current situation		■																						
4. Analyze causes			▨																					
5. Analyze alternative				■																				
6. Try out improvement alternative					▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨				
7. Study the results																					■			
8. Standardize improvement																							▨	
9. Plan continuous improvement																								■

Table 2 : Activities plan of implementation

Activities	Objectives	Results	Methods	Persons in charge
1. Set cross functional team to solve the problem of overdue and lost summary discharge charts	To obtain personnel from relevant units to help solve the problems of overdue summary charts and lost summary charts	Obtain committee from relevant units for development and problem-solving process	- Medical Information Unit asked for cooperation in solving problems to Quality Development Center. - Quality Development Center selected a committee from relevant units. - The committee sent a circular letter for a meeting. - The committee prepared a meeting and recorded the meeting results.	Hospital Quality Development Center

Activities	Objectives	Results	Methods	Persons in charge
2. Define the system of the medical record statistics	To understand the system of the Internal Medical Record Statistics Unit	Understand work process of the Internal Medical Record Statistics Unit	Process flow charts	Cross Functional Team
3. Assess current situation	To study work process	Obtain information of overdue summary charts and lost summary charts	– Collect data of overdue charts and lost charts by using the MIC computer program which was developed by the hospital. - Collect data form the register form of inpatient (Medical Record Statistics Form No 07)	Research team

Activities	Objectives	Results	Methods	Persons in charge
4. Analyze causes	To find causes and gaps occurred in systems	Root cause	Tree diagram	Cross Functional Team
5. Analyze alternatives	To choose analyzed causes to be alternative for work improvement	Obtain alternative for work improvement	Brain storming - Criteria weighting - Objective tree - Force-field analysis	Cross Functional Team
6. Try out improvement alternative	Implement and correct data	Testing form of alternative	Explain how to use the form to the personnel who are responsible for the project. - Inform the policy of sending charts punctually to all the personnel. - Collect data in the data record form monthly for the period of 4 months.	Researcher team

Activities	Objectives	Results	Methods	Persons in charge
7. Study result	Learning of experimental	Summary document of the team	Analyze data of overdue charts and use graphs to present the tendency of overdue charts. - The percentage of monthly overdue charts during the project. - The percentage of decreased overdue charts which is compared before and after the project.	Researcher team
8. Standardize improvement	To improve the system and decrease the solution	Standard in the system and the implementation	produce job description manual.	Researcher team
9. Standardization the continuous improvement.	To improve the complete system	System of implementation will be better	Evaluate the work which is done according to the policy every 6 months. - Reward the person who sends charts accurately and rapidly.	Cross functional team

Figure 1 : Conceptual framework


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┌─────────────────────────────┐                    ┌──────────────────────────────┐
│ Repetition of work system   │                    │ Loss of DRGs budget          │
└─────────────────────────────┘                    │                              │
┌─────────────────────────────┐                    │ Delay of sending charts      │
│ Doctors do not summarize charts                   │                              │
│                             │                    │ Weaken quality in curing     │
│ Nurses do not send charts   │                    └──────────────────────────────┘
└─────────────────────────────┘
┌─────────────────────────────┐
│ Computer and materials      │
│ are out of date.            │                         followed results
└─────────────────────────────┘
                                                         
                        Overdue and lost charts

┌──────────────┐        ┌──────────────┐        ┌──────────────────────────┐
│ The Cross    │        │ TQM process  │        │ Decrease overdue charts  │
│ Functional Team │     │              │        │ No lost charts           │
└──────────────┘        └──────────────┘        └──────────────────────────┘
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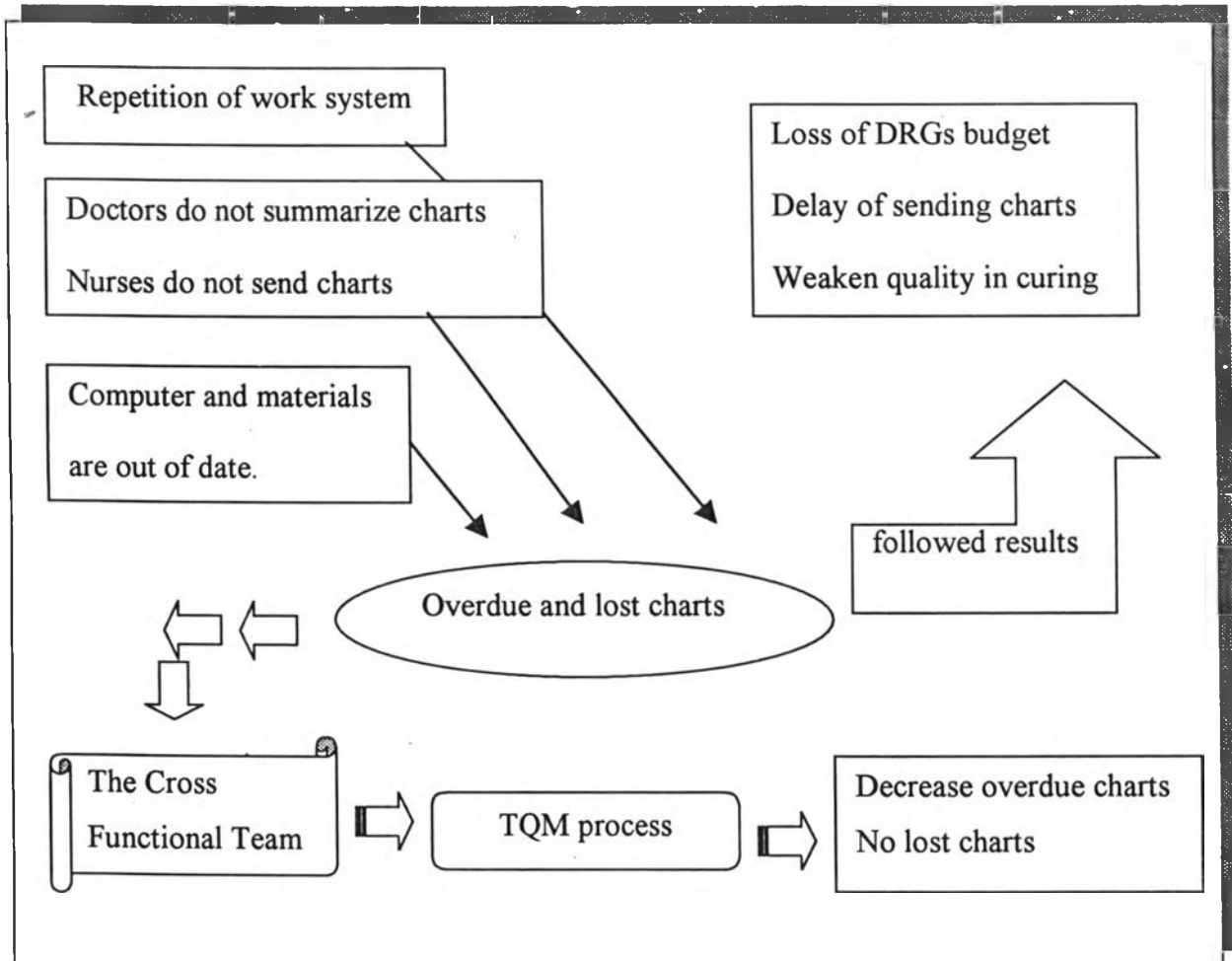
This conceptual framework shows that the problem of overdue and lost summary discharge charts is caused by the delay of sending records by doctors and nurses. The following results are as follows.

1. Loss of budget which is allocated upon the criteria of the refund of high cost cure services by using the DRGs.

2. Delay of information record and incomplete record

3. Loss of History of patient record and weaken quality in curing.

To solve this problem we use process of TQM for managing summary discharge system of inpatient at Roi-Et Hospital by objective of decreases overdue and loss of charts

PROBLEMS, CONFLICTS, AND MEANS FOR SOLUTION

It can be seen that using TQM for the quality development has to give opportunity to personnel of every level to participate in the development and allow them to understand its advantages obviously. The TQM will also decrease the role of leadership and give equality to everyone in expressing view, making decision and eventually proceeding according the group's agreement. Thus we apply this principal idea to solve the problem of overdue and lost summary discharge charts as follows.

1. Seek Opportunities Improvement

Objectives

To decrease overdue and lost summary discharge charts

To set a team in charge of overdue and lost summary discharge charts

Questions for objective assessment

Is the problem of overdue and lost summary discharge charts important ?

Is the team in charge set up well ?

Process

Surveying problems

Setting a team in charge

Defining the joint target

Defining culture of work style

The starting process came from the meeting of the Hospital Information Unit It was found that there was a problem to be solved urgently. The Internal Medical Record Statistics Unit under the responsibility of The Medical Information Center raised the problem of the delay of sending DRGs to the Ministry of Public Health. The cause was that in September 1999 there were 852 overdue summary discharge charts and 480 of lost summary discharge charts. This problem tends to increase gradually. (Shown in Chart No 2 and 3).

Hence The Medical Information Center took the problem of overdue and lost summary discharge charts into consideration and set up the project of Managing Discharge Summary System of the inpatient department at Roi-Et Hospital.

Figure 2 : Shows accumulated numbers of overdue summary discharge charts

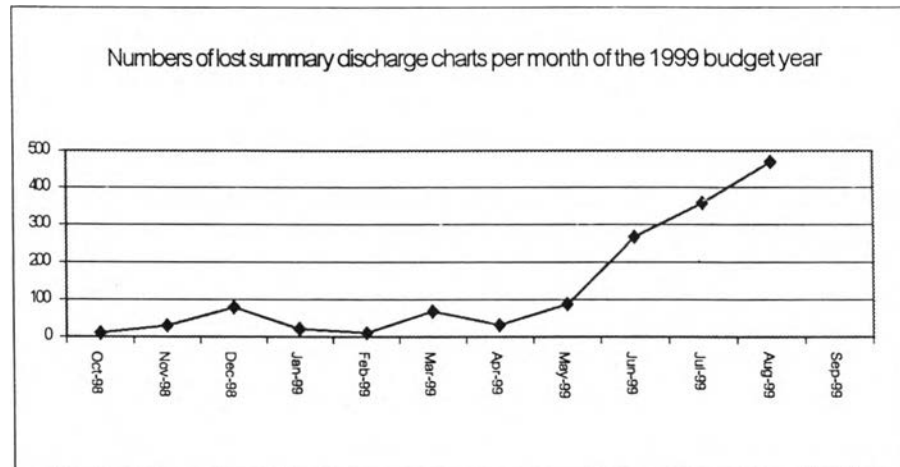Number of overdue summary discharge charts per month of the 1999 budget year
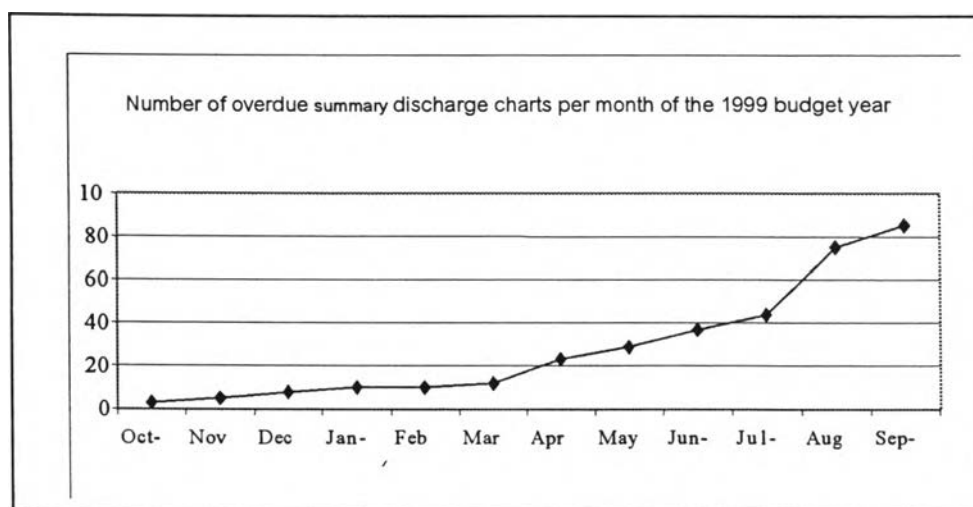
Figure 3 : Shows accumulated numbers of lost summary discharge charts

It can be found from Figure 2 and Figure 3 that there were 852 overdue summary discharge charts in September 1999 and 480 of lost summary discharge charts in August. The problem tends to increase gradually.

Since the problem of overdue and lost discharge summary charts concerns various units of Roi-Et Hospital and the Medical Record Statistics Unit could not solve the problem alone, the Center of Service Quality Development has been asked to cooperate in setting up Cross Functional Team according to The Roi-Et Hospital Order on 3[td] and 8th March 2000. (Form 1 in appendix)

The meeting regulation has been set up as follows.

1. The member will join the meeting at the Medical Information Unit twice a month.

2. There must be ¾ of votes to accomplish any agreement of meeting.

3. The meeting time is from 13.30 p.m. to 16.00 p.m.

4. Give opportunity to every member to express opinion.

5. Listen to opinion of other member and do not interrupt while a member is speaking.

6. Give information and reason for making decision.

7. Find conclusion which would be accepted by every member and share opinion for important decision-making.

Assessment

The problem of 852 of overdue and 480 of lost summary discharge charts affected mostly the work of Roi-Et Hospital. The chart is an important evidence that show details of ailment and medical cure given to patient by doctor. It is also used to assess the quality of medical cure and to be mentioned as legal evidence. Thus the record of medical record statistics has to be done orderly and reliably, easily checked. The most important thing is that charts show high accuracy and quality of information arrangement system done be the Medical Record Statistics Unit. They concern the budget granted by The Ministry of Public Health who uses DRGs to be criteria in allocating the medical budget to the hospital. Besides, charts are an important official document. Hence overdue and lost summary discharge charts should not occur.

As for the Cross Functional Team set up by the Center of Service Quality Development, the number of 16 representatives seem to be suitable and cover all the units dealing with problems. The team is composed of 4 doctors from Obstetrics and Gynecology Unit, Surgery Unit, Medical Unit and Pediatrics Unit, 4 nurses from all the nurse units, 6 personnel from Information Center and 2 personnel from Medical Record Statistics Unit. The Cross Functional Team arranged meetings in order to brainstorm on how to solve the problems. There were 8 meetings according to the Report of quality development activities. (Form 2 in appendix)

2. Define the System

Objective

To define the system of the Medical Record Statistics Unit

Questions for objective assessment

How can we define the system ?

What will we get from the definition of the system ?

Process

Analyzing the pattern of work system and writing a detailed process flowchart

The Cross Functional Team arranged a meeting to brainstorm and analyze the system of the Medical Record Statistics Unit. They wrote a detailed process flowchart with complete and detailed work.

Figure 4 : Detailed process flowchart

Presenting flowing of discharge summary charts of Roi-Et Hospital before launching the project
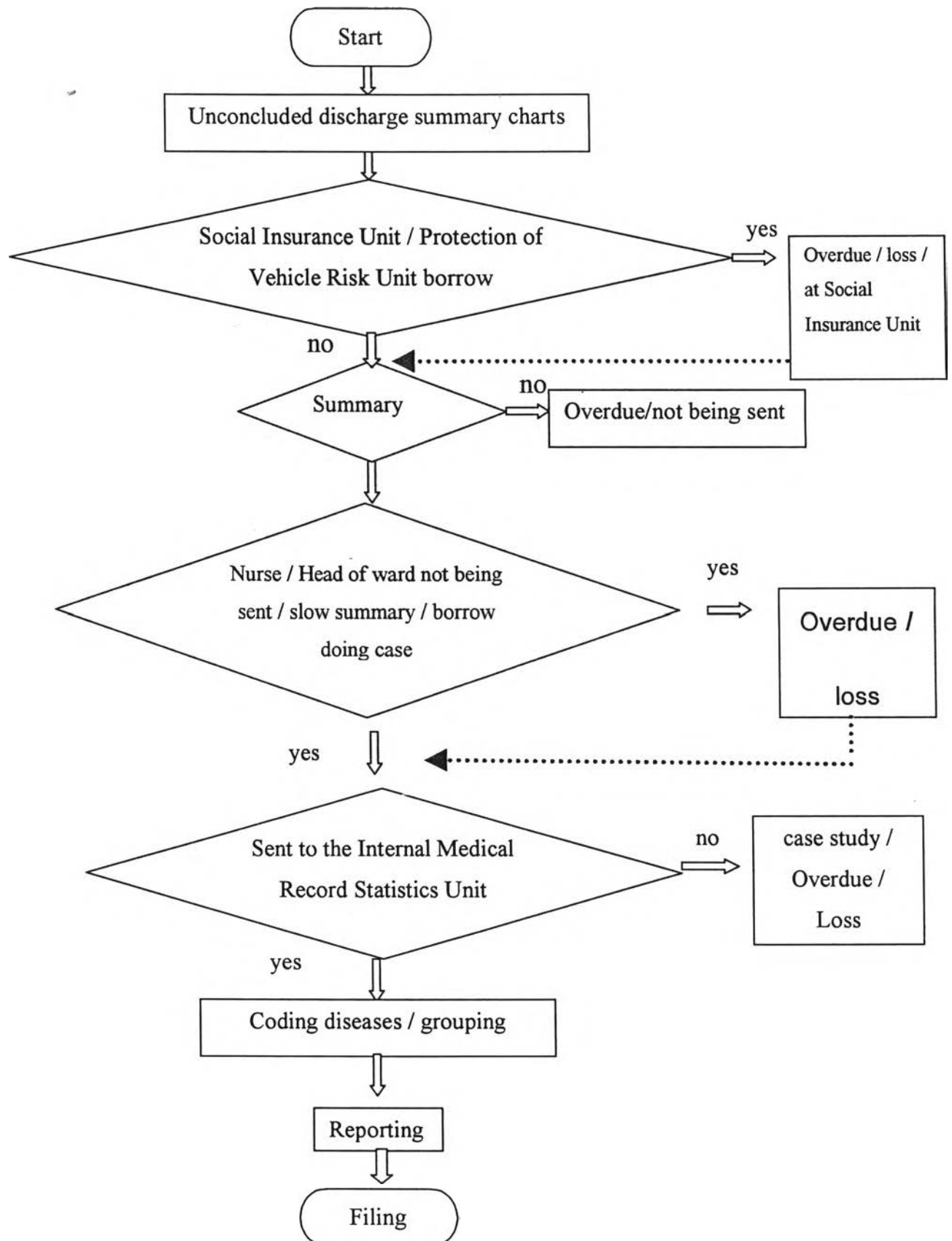
The circulation of discharge charts in Roi-Et Hospital before launching the project

1. When doctors discharged patients and allowed them to go home. Doctors summarized the treatment and the diagnosis in charts. Sometimes doctors did not summarize them or summarized them slowly.

2. Social Insurance Unit and Protection of Vehicle Risk Unit borrowed charts without an exact due time. There was no register of borrowing and returning charts. Charts could be overdue or lost.

3. In case that Social Insurance Unit returned charts to the wards, nurses would send them to doctors for summarizing. In case that doctors did not summarize charts, there would be overdue or not summarized charts.

4. In case that doctors had already summarized charts but nurses or the head of nurses did not send charts or else borrowed charts for a case study and did not return them to the Medical Report Statistics Unit, there would be overdue or lost charts.

5. In case that charts were already summarized and sent to the Medical Report Statistics Unit, they were borrowed for a case study. This would lead to a case of overdue or lost charts.

6. The personnel of Medical Record Statistics Unit coded and grouped diseases.

7. The personnel filed in number order of AN the charts in which disease coding and disease grouping were completed.

Assessment

The Cross Functional Team arranged a brainstorm meeting to understand the whole system and to draw detailed process flowchart.

3. Assess Current Situation

Objective

To study the results of work process before solving the problem

Questions for the objective assessment

Are the overdue and lost charts the real problem ? Why ?

Process

1. Define the indicators.

2. Design a form to record information.

3. Make graphs and interpret the results from graphs.

The indicator of the results is the percentage of overdue and lost charts.

Methods of data collecting

1. Using MIC Program created by Doctor Thavorn Rungsijumrus.

2. Using a form of daily patient discharge. (Form No 3 in appendix)

3. Collecting data from the form for chart borrow of the Internal Medical Record Statistics, of the life assurance unit, of the outpatient unit and crime unit. (Form No 4 in appendix)

4. Collecting data from the form for chart borrow of the Internal Medical Record Statistics in each building. (Form No 5 in appendix)

Figure 5 : Shows overdue and lost charts of March 2000
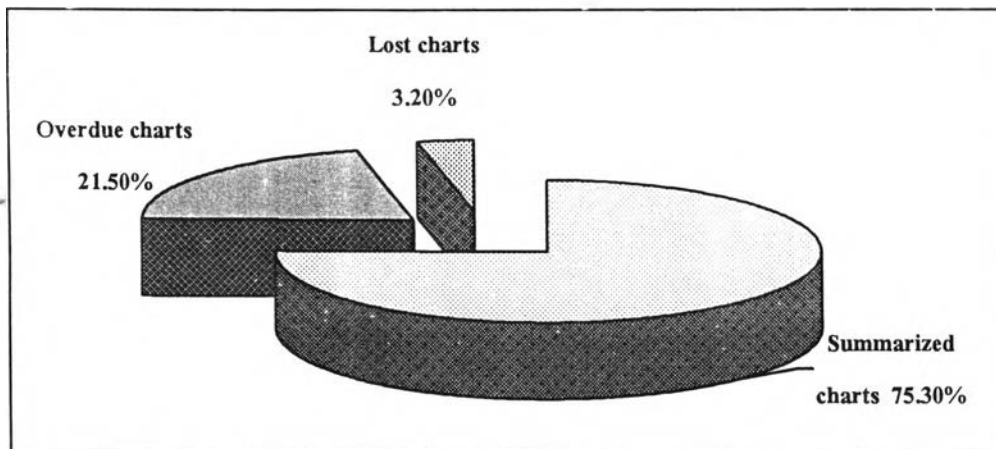
It was found that in March 2000 there were 744 overdue charts (21.50%) and 110 lost charts (3.2%) from the whole number of 3459 charts.

4. Analyze Causes

Objective

To investigate the common cause of overdue and lost summary discharge charts

Question for objective assessment

Which method will be used to analyze causes ?

Process

Brainstorming and arranging the conceptual system

Investigating the profound causes

The Cross Functional Team arranged meetings by using brainstorming method to analyze the causes and summarized the results which could be presented in form of problem tree as follows.

Figure 6 : Shows Analysis of overdue and lost charts by using problem Tree
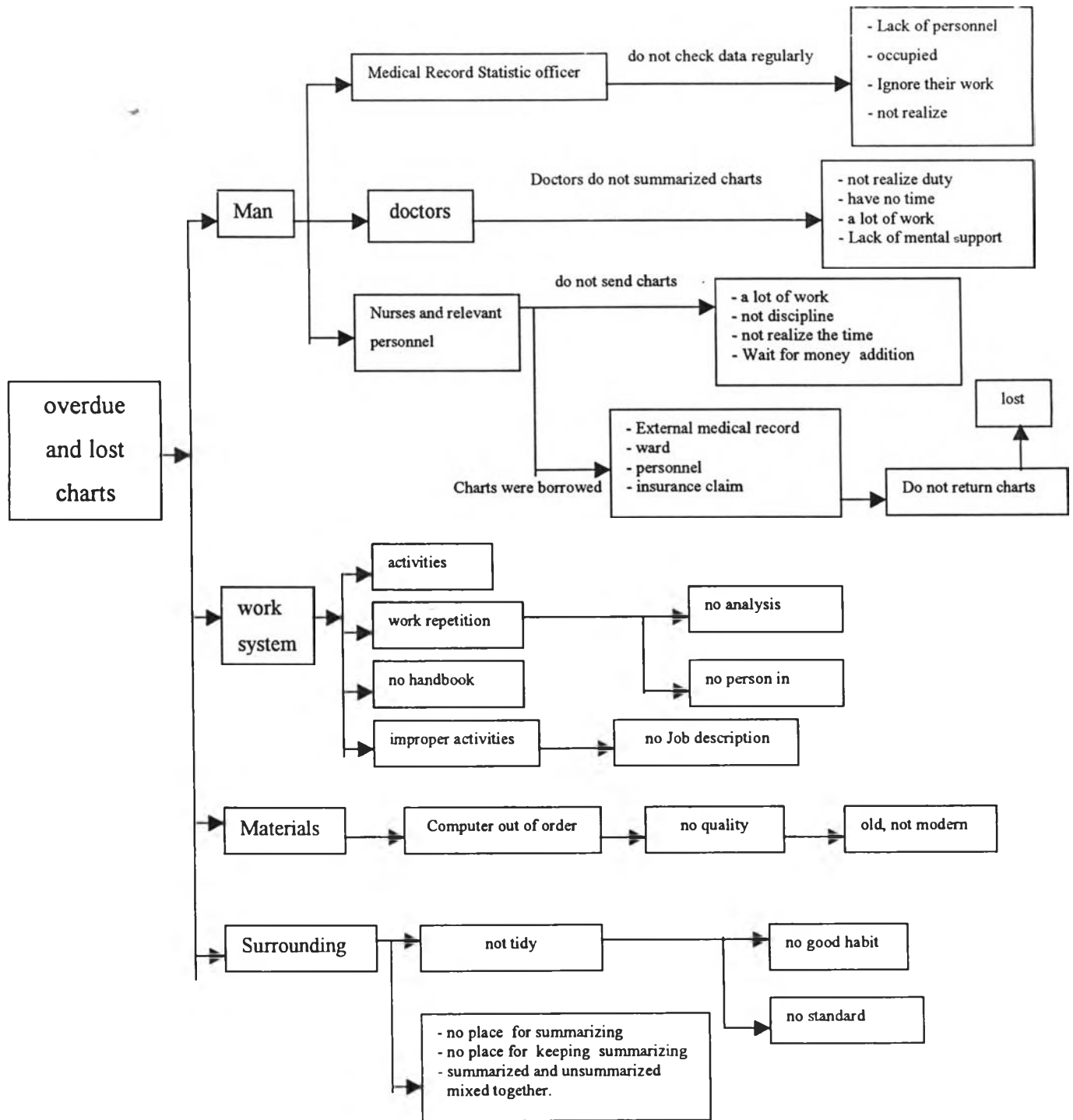
After analyzing the causes, it can be seen that the overdue and lost charts are caused by personnel such as doctors, nurses and the personnel of the internal medical record statistics unit; incomplete work system, ineffective materials and improper surrounding.

5. Analyze Alternatives

Objective

To take the analyzed causes to define alternatives for improvement

Questions for objective assessment

What method will be used to define alternatives?

Are the chosen alternatives suitable?

Process

Defining criteria for alternatives.

Brainstorming for creating alternatives

Assessing alternatives

Choosing the best alternative

Analyzing resistant and support force

Process of analyzing problem-solving method

The Cross Functional Team defined criteria of alternatives by using problem tree (Figure 6) and arranged a brainstorming meeting to assess alternatives. The team could define the cause of problem and its solution as follows.(Table 3)

Table 3 : Cause of Problem and solving Solutions

Causes	Solutions
1. Doctors did not summarized charts	1. The hospital authority announced the hospital policy to doctors to summarize charts within 7 days after discharging patients. 2. Medical staff organization informs all doctors to realize the importance of summary charts.
2. Nurses did not send charts	1. Coordinate with nurses' organization to inform nurses of any wards to arrange a system of keeping charts orderly and easily for checking. 2. Set up a record form of burrowing and returning charts
3. The personnel of Medical Record Statistics Unit did not check the data regularly.	1. Set up internal personnel to check numbers of charts sent by ward 2. Provide a place for incoming charts, charts waiting for record, coding diseases and keeping recorded charts for filing.

Causes	Solutions
4. Relevant personnel	1. co-ordinate with the committee to inform the hospital policy to any personnel to realize that charts are the hospital property and the secret data. It is prohibited not to take them out of ward without any permission.
5. Work system	1. Analyze work of all organizations and identify the person in charge. 2. Write obviously a manual of job description.
6. Materials	1. Plan for purchasing sufficient materials. 2. Materials are modern. 3. Process of sending computer to be repaired is not complicated and wasteful.
7. Disorder and not proportional location	1. Use the principal of 5 S 2. Set standard filing and classifying of charts 3. Provide suitable place for doctors to summarize charts

As for the restriction of the unchangeable condition, the Cross Functional Team met an agreement that increasing personnel in each unit could not be done because it would be against the hospital policy of economy and personnel reduction.

After that, the Cross Functional Team made a brainstorming by setting criteria weighting in order to create the best alternative that was suitable for personnel and units of Roi-Et Hospital. It was found according to the analysis of the Cross Functional Team that the work system problem should be firstly solved. So the importance of causes was classified as follows.

Table 4 : Classification of problems according to their order of importance

alternatives of causes	Criteria of selection								total of 2 criteria	order of importance
	Effectiveness x 2				Acceptance x 2					
	1	2	3	Total	1	2	3	Total		
Caused by personnel	-	-	16	96	-	-	16	96	192	1
Caused by work system	-	-	16	96	-	-	16	96	192	1
Caused by surrounding	7	8	1	52	10	5	1	46	98	3
Caused by material	10	6	-	44	12	3	1	42	86	4

Analysis of alternatives by using 2 criteria weighting.

1. Criteria weighting from effectiveness of solution (double notes)

2. Criteria weighting from acceptance of solved problems (double notes)

It was found that The Cross Functional Team gave their priority to solve the problems of personnel and secondly to work system. The problem of circumstance was considered thirdly and the problem of material came lastly. The Cross Functional Team also suggested providing a suitable place for doctors to summarize charts in ward. This would promote doctors' coordination. The result of analysis could be shown as Objective tree in Figure 7
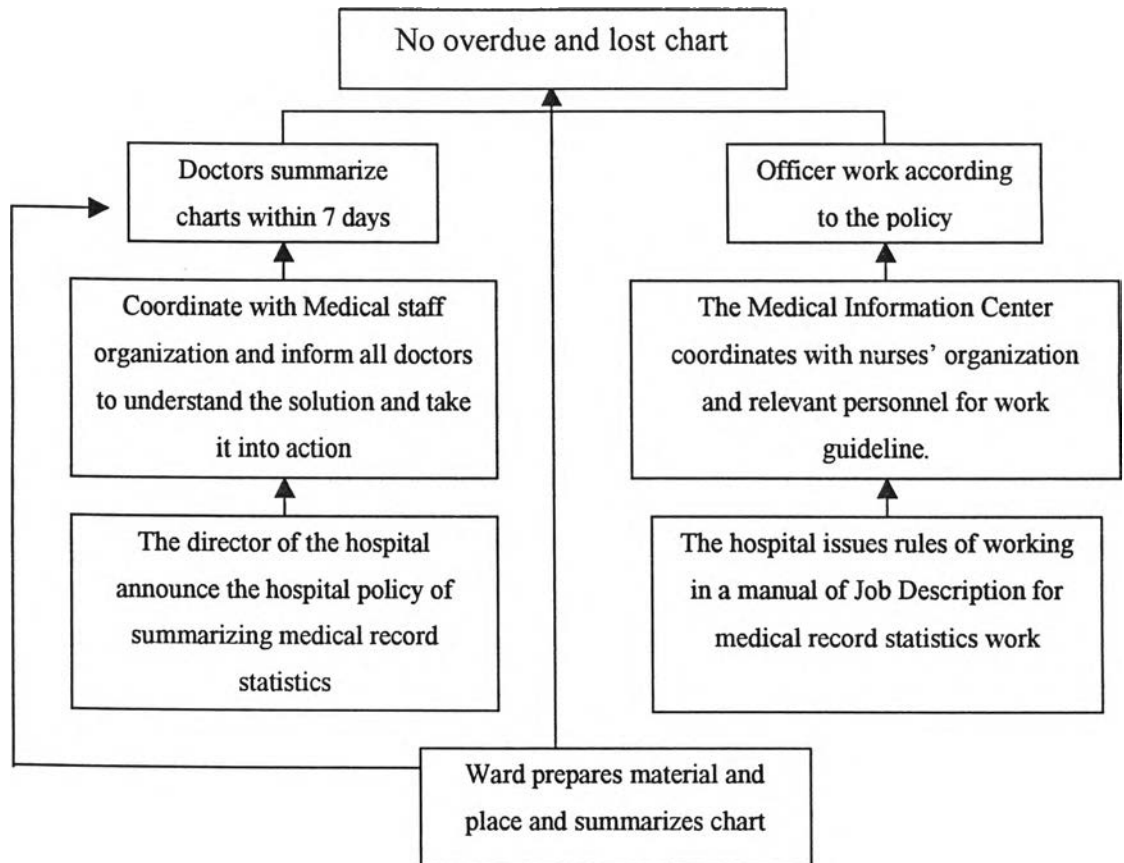
Figure7 : Objective tree

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                    ┌─────────────────────────────┐
                    │   No overdue and lost chart   │
                    └─────────────────────────────┘
              ┌──────────────┴───────────────────────┐
   ┌──────────────────────┐              ┌──────────────────────┐
   │   Doctors summarize    │              │  Officer work according │
   │  charts within 7 days  │              │     to the policy       │
   └──────────────────────┘              └──────────────────────┘
   ┌──────────────────────────┐          ┌──────────────────────────┐
   │ Coordinate with Medical staff │      │ The Medical Information Center │
   │ organization and inform all doctors │ │ coordinates with nurses' organization │
   │ to understand the solution and take │ │ and relevant personnel for work │
   │        it into action        │      │         guideline.           │
   └──────────────────────────┘          └──────────────────────────┘
   ┌──────────────────────────┐          ┌──────────────────────────┐
   │  The director of the hospital │      │ The hospital issues rules of working │
   │   announce the hospital policy of │  │ in a manual of Job Description for │
   │   summarizing medical record │      │   medical record statistics work  │
   │          statistics          │      └──────────────────────────┘
   └──────────────────────────┘
                    ┌─────────────────────────────┐
                    │  Ward prepares material and   │
                    │  place and summarizes chart   │
                    └─────────────────────────────┘
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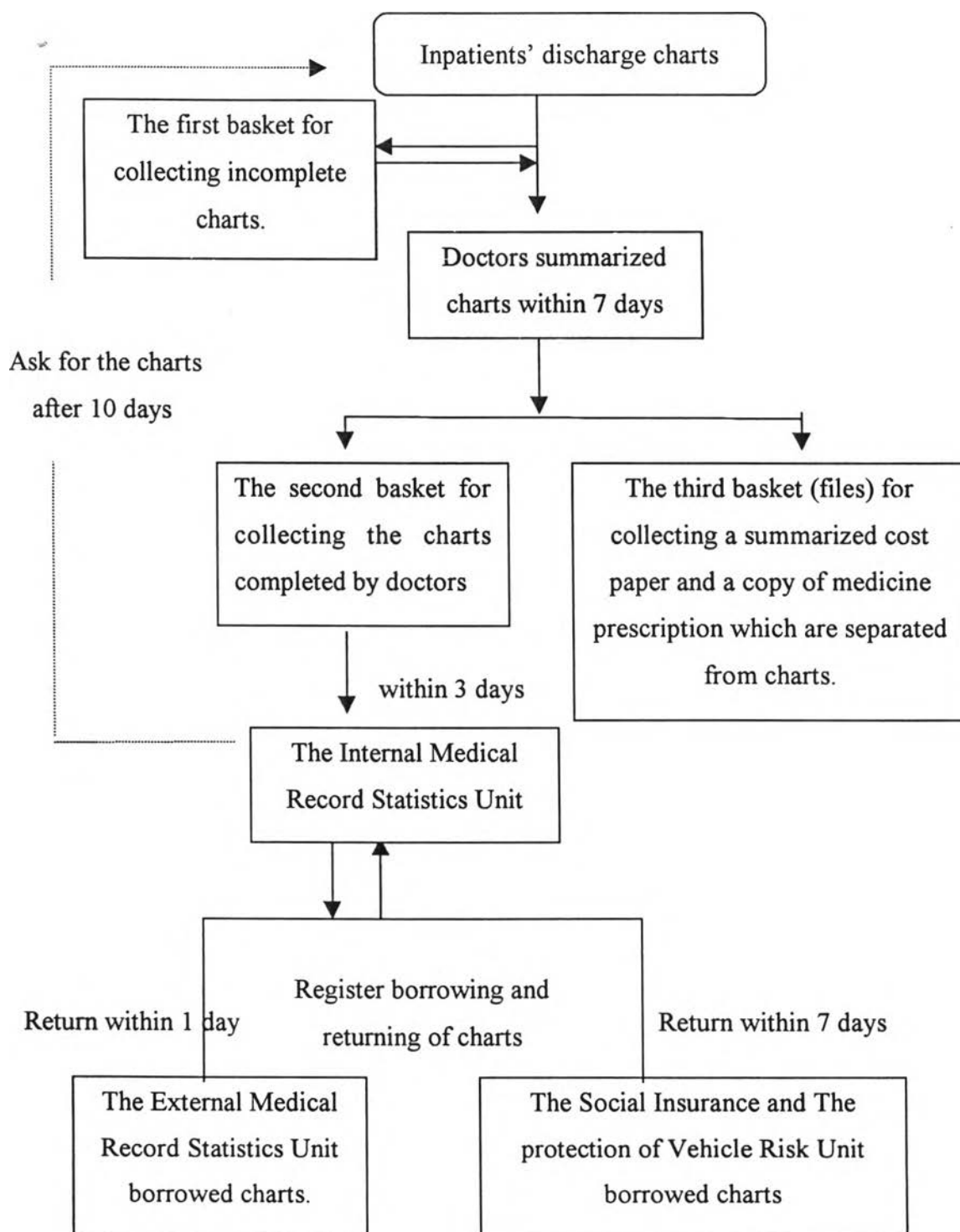
Figure 8 : Model of Implementation of inpatient at Roi-Et Hospital

It could be concluded from Figure 8 as follows.

1. In case that patients were discharged, doctors had to summarized charts within 7 days. After that, the personnel of building sent charts to the Internal Medical Record Statistics Unit within 3 days.

The measurement of collection charts were as follows.

1.1 Prepare the first basket for collecting summarized charts and prepare to send them to the Internal Medical Record Statistics Unit.

1.2 Prepare the second basket for collecting discharged charts which were not summarized by doctors and which were prepared by nurses for doctors' summarization within 7 days after discharging of patients. Doctors should summarized immediately the next day after discharging. If doctors did not summarize charts, nurses should send these overdue charts to head of each unit for following their causes.

2. After doctors had discharged patients' charts, the personnel of the Internal Medical Record Statistics Unit had to check and follow charts by using the following measurements.

2.1 If the personnel of the Internal Medical Record Statistics Unit did not receive charts within 10 days, the personnel of this unit had to follow charts by identifying HN and doctors' names to head of building. This would be the first ask for the chart sending.

2.2 If the personnel of the Internal Medical Record Statistics Unit did not receive charts with 3 days after the first ask. They should make the second ask.

2.3 Finally if the Personnel of the Internal Medical Record Statistics Unit did not receive charts, they should send a report to head of each group work to solve the problem.

3. Charts of patients who could ask for refund always face the problem of delay refund from their official establishment. These charts should be proceeded as follows.

3.1 Separate a cost paper and a copy of medicine prescription from charts. The wards should prepare a file for these documents in order to protect their loss.

3.2 As for Summary Charts and other charts, they should be prepared for doctors to summarize as usual and should be sent to the personnel of the Internal Medical Record Statistics Unit within the fixed time (not more than 10 days after doctors had discharged patients.

4. In case of admitting patients for the second time, which was not a distant time from the first cure. It could be proceeded as follows.

4.1 In case that patients were admitted in the same wards for the second time and their treatment background had been already studied by doctors, the patients' old charts, which were summarized by doctors, should be separated from the new ones and be sent to the personnel of the Internal Medical Record Statistics Unit within 10 days after the first patients' discharge.

4.2 In case that patients were accepted in new wards for the second time, the personnel of the new wards had to borrow charts from the first wards where patients had been treated. The first wards had to make a register of borrowing and fix the due time in 2 days. It was the first wards duty to ask for borrowed charts.

5. In case that patients used their right of Protection of Vehicle Risk Act, each wards should summarize charts as usual and send them to the personnel of the Internal Medical Record Statistics Unit. The personnel of Protection of Vehicle Risk Unit had to borrow summarized charts from the Internal Medical Record Statistics Unit who would make a register of borrowing and returning charts and fix the due time within 7 days.

6. It was recommended not to take charts out of wards except for the case of
4.2

7. In case that the External Medical Record Statistics Unit borrowed charts from the Internal Medical Record Statistics Unit. The personnel of the Internal Medical Record Statistics Unit would make a register of borrowing and returning by identifying name of the person who borrowed and returned, date of borrowing and signature of borrower. The due time was within 1 day.

8. In sending summarized charts, each building had to check their complete detail, prepare evidence of sending such as identify their number, give details of sending, identify patients' names HN. AN, date of sending, name of sender and receiver. The Internal Medical Record Statistics Unit had to check whether charts were complete or not before receiving and signing in the acceptance form.

Force-field Analysis

The cross Functional Team had analyzed the supporting force, the resisting force and the solution of the problem by using the Force-field Analysis as shown in Table 5

Table 5 : Shows the Force-field Analysis

the supporting force	the resisting force	the solution
- The hospital director - The head of medical service - The chairman of Medical staff organization, the chairman of nurse organization - Good cooperation from nurses in some buildings - Good cooperation from the personnel of the Medical Record Statistics Unit	- Some doctors do not understand and know the hospital policy. - Nurses feel that they have to work more than usual and they do not know what duty to do.	- The hospital administrators asked for the chairman of doctor organization to inform to every personnel about the negative effect toward patients and the hospital. - The hospital administrators informed all the personnel to realize the hospital policy and their duties to be done including the negative effect toward patients and the hospital

It was found from the assessment that the Cross Functional Team had set brainstorming meetings and defined the alternative of solving the problem by using the method of Criteria weighting. The Cross Functional Team shared their idea in order to solve the problems. They insisted on the method that could show the problems obviously and encourage all the personnel to solve the problems effectively.

6. Try out Improvement Alternatives

Objective

To apply the suitable alternative in solving problems and to collect essential data for further studies

Questions for the objective assessment

How difficult are the hospital regulations ?

Are they flexible for work ?

Is there any obstacle of applying the hospital regulations ?

Is the try out time suitable ?

Process

Make plan for testing alternatives.

Test alternatives

Collecting from the test

Working on the plan for testing alternatives

1. Arrange a meeting for working on the plan.

2. Present new regulations

3. Apply new regulations

4. Define the hospital regulations for work

5. Follow the results and evaluate them every month from April 2000 to July 2000. (4 months)

Phases of making a plan for testing alternatives

1. Arrange a meeting of the Cross Functional Team to brainstorm on the solution and select the persons who will participate in testing alternatives.

2. The personnel who participate in testing the alternatives have to work with data collection of the inpatient medical record statistics. So 6 personnel from the Information Center were chosen to join this data collection.

3. Arrange meetings for the explanation of phases and methods of data collection to the personnel who join the project. The phrases and methods are as follows.

3.1 Project time

The project time was fixed to 4 months from 1st April to 31st July 2000.

3.2 Data collection methods

The data collection method was done by dividing all the wards into four work groups. They are Obstetrics and Gynecology Unit, Surgery Unit, Medical Unit and Pediatrics Unit. The data collection will take place twice a month on the 15th and the 30th or 31st. It will be done as the form of overdue charts data collection which comprises a date of discharge, doctor's name, HN, An, a name of the head of building (shown in Form No 6 in Appendix)

3.3 Take summarized total papers of daily patients (according to Form No 3 in appendix) from the medical Record Statistics Unit to distribute into 23 wards apart and collect data continuously for 4 months.

3.4 Use the sending charts papers (shown in Form No 7 in Appendix) to check the summarized total papers of daily patients

3.5 Make record of charts due to be sent but not being sent according to the form of not summarized, overdue and lost charts.

3.6 Follow charts from each wards. These charts are discharges in due time as defined in the condition of data collection.

3.7 Use percentage in calculating the results in order to compare the data before and after testing the alternatives.

Phases of testing, data collecting and the results of testing

After 4 months o proceeding from 1st April to 31st July, it was found that there were 12,024 charts. There were 24 overdue charts and no lost charts.

Evaluation

It was found that the regulations presented by the Cross Functional Team were quite difficult to the hospital personnel of each wards. The personnel thought that these regulations increased their daily work and they did not know obviously about the hospital policy. Some doctors did not understand the policy. But after a short time of working according to the policy, all the personnel started to understand the policy and adjusted themselves to the new system of work. There was a good cooperation of work.

As for some obstacles of applying the new regulations, it was found that the personnel did not understand the new regulations at the beginning phase.

It was also found that the try out period of 4 months was suitable because the time is rather long enough for the Hospital to inform the new regulations too all the personnel. Besides, the of data should be compared monthly. Thus the period of 4 months seemed convenient for predicting the expected results.

7. Study the result

Objective

To study the result from the try out

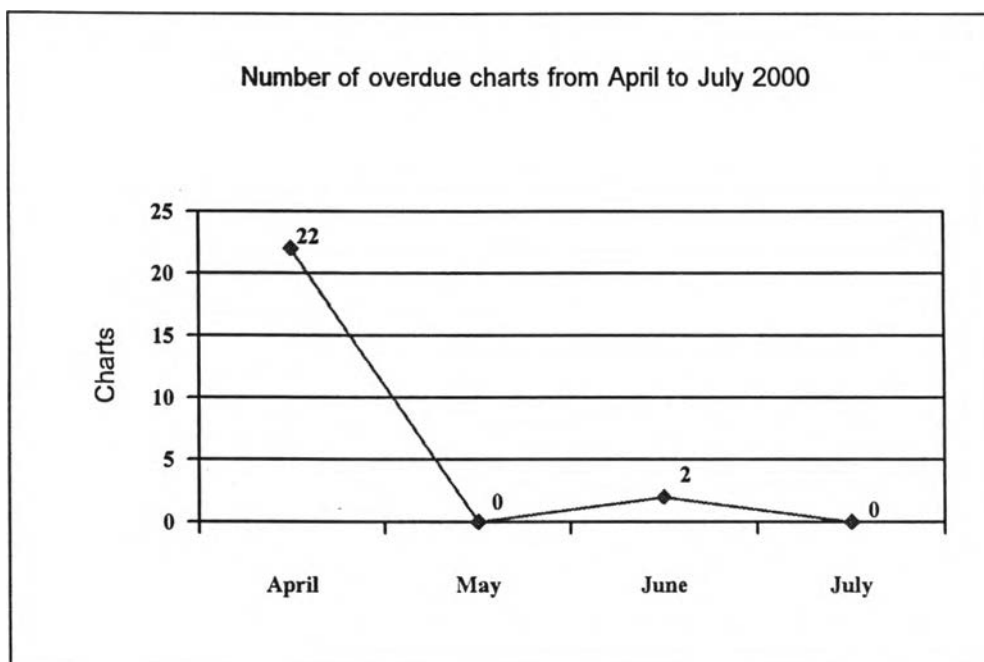### Question for objective assessment

Does the study result achieve the objective ?

Process

1. Analyze the data from the try out.

2. Summarize the result from the try out.

The process of analyzing the result acquired from the try out

Figure 9 : Shows numbers of overdue charts within 4 months

Number of overdue charts from April to July 2000

From the Figure 9, it was found that numbers of overdue charts tended to decrease. But in April, there were 22 overdue charts because the personnel in charge of charts had to wait for the head of the wards. The head had to check whether the charts were sent for money requisition or whether patients had paid for the treatment. So the personnel could not send charts to the Internal Medical Record Statistics Unit. Afterwards a meeting was arranged to explain the problem to the head of nurse service group. There was an obvious manual of job description such as the separation of money requisition paper from the chart and the permission to an acting person to be responsible for sending charts during the absence of head. This resulted in no overdue charts in May. There were 2 overdue charts in June because the doctors in charge of charts attended a meeting in another province.

Figure 10 : Shows numbers of lost charts within 4 months

Number of lost charts from April to July 2000
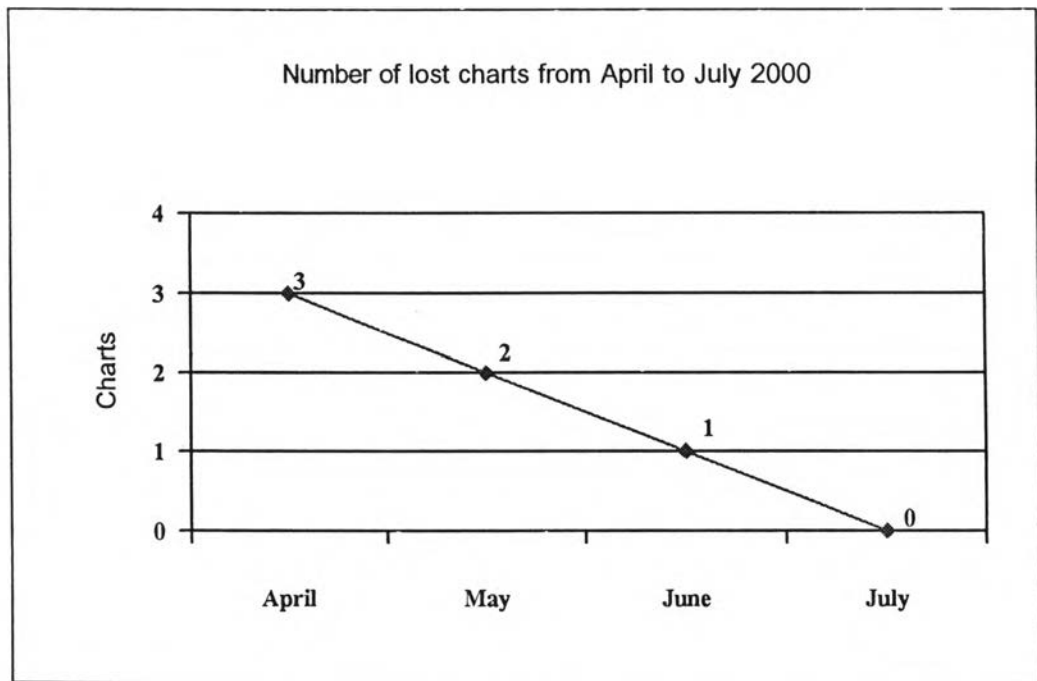
The Cross Functional Team had arranged a meeting to inform the policy of sending charts to buildings. It was found that numbers of lost charts without obvious causes reduced to 100% within 4 months.

Analyze compared information before and after using TQM process

Figure 11 : Shows percentage of summary, overdue and lost discharge

charts before using TQM process
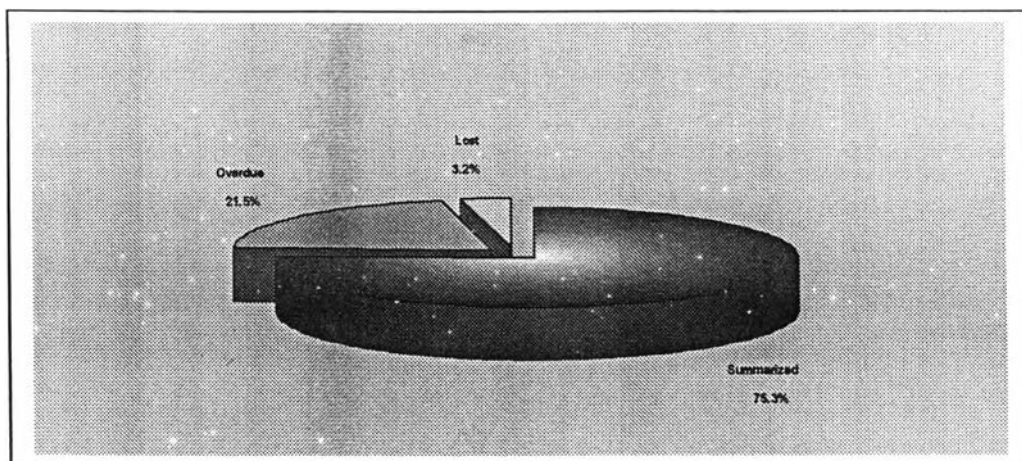
The Figure 11 shows results of information collected in March 2000. It can be found that from 3,459 charts there are 21.5% or 744 overdue charts and 3.2% or 111 lost charts.

Figure 12 : Shows percentage of summary, overdue and lost discharge

charts after using TQM process
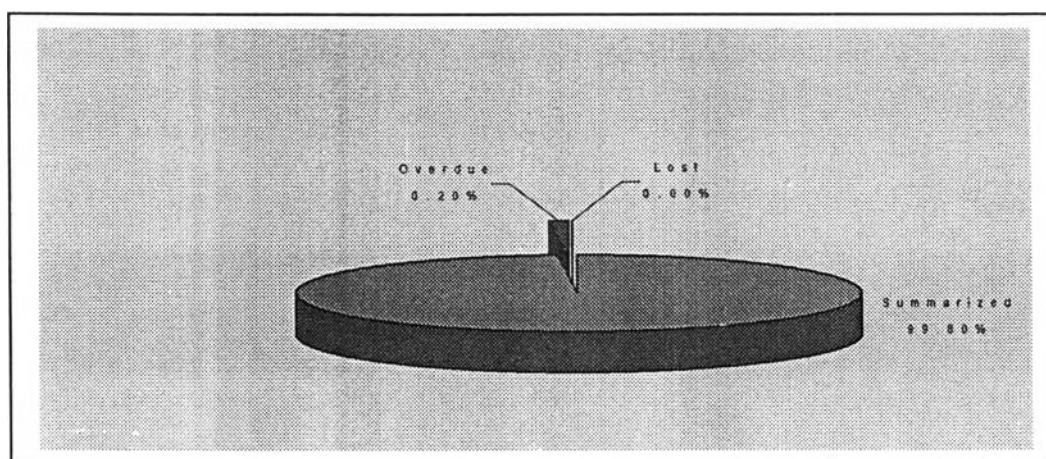
From Figure 12, it was found that after defining the policy and the method of summarizing charts and protecting lost charts according to the Roi-Et Hospital order No 61/2000 issued on the 30th of March 2000, the research team collected the data of delay, overdue and lost charts. After analyzing the whole data, the research team found 0.2 % of overdue charts and 0% of lost charts.

Conclusion of the research

It was found from the study of March 2000 as follows.

1. There were 3,459 charts and 2,605 charts or 75.3% which were summarized and sent to the Internal Medical Record Statistics.

2. There were 744 overdue charts or 21.5%.

3. There were 110 lost charts or 3.2 %.

The results from assessment are as follows.

After the Quality Control Center had solved the problem by organizing the Cross Functional Team to work upon the TQM for a period of 4 months (from 1st April 2000 to 31st July 2000), The results were as follows.

1. There were 12,024 summary discharge charts (99.8 %) which could be sent to The Medical Record Statistics Unit.

2. There were 24 overdue summary discharge charts.(0.2%)

3. There were no lost summary discharge charts.

From the comparison of the results before and after using TQM, it was found that the problem of overdue, delay and lost summary discharge charts was almost disappeared. This shows that using TQM as a tool of this research project achieves the objectives successfully and it satisfies all the persons who take part in this project.

8. Standardize improvement

Objectives

To improve a complete system and to decrease a chance of returning to the condition before the improvement

Questions for objective assessment

1. For what purpose do we standardize an improvement ?

2. Will the new system be permanent ?

3. Who will be in charge when a problem occurs ?

Process

1. Define a standard for the new system.

2. Work upon the new standard and set system of control

Working upon the defined standard of the new system

The Cross Functional Team arranged a brainstorming for a new system of working and applied it in the hospital. The standardization of flowing summary discharge charts was defined afterwards. (Figure 13 standard flow charts showing the system of flowing charts after launching the project). The new regulations of discharge charts was published to be used as a hospital standard in every wards.

After that, the personnel of The Information Center who were selected by the Cross Functional Team worked upon the new standard. These personnel are responsible for checking numbers of charts discharged from each building to the Medical Record Statistics and informing the checked result to the Cross Functional and Team Administration board every month.

Figure 13 : **The standard flow chart shows the circulation of summary discharge charts after launching the project**
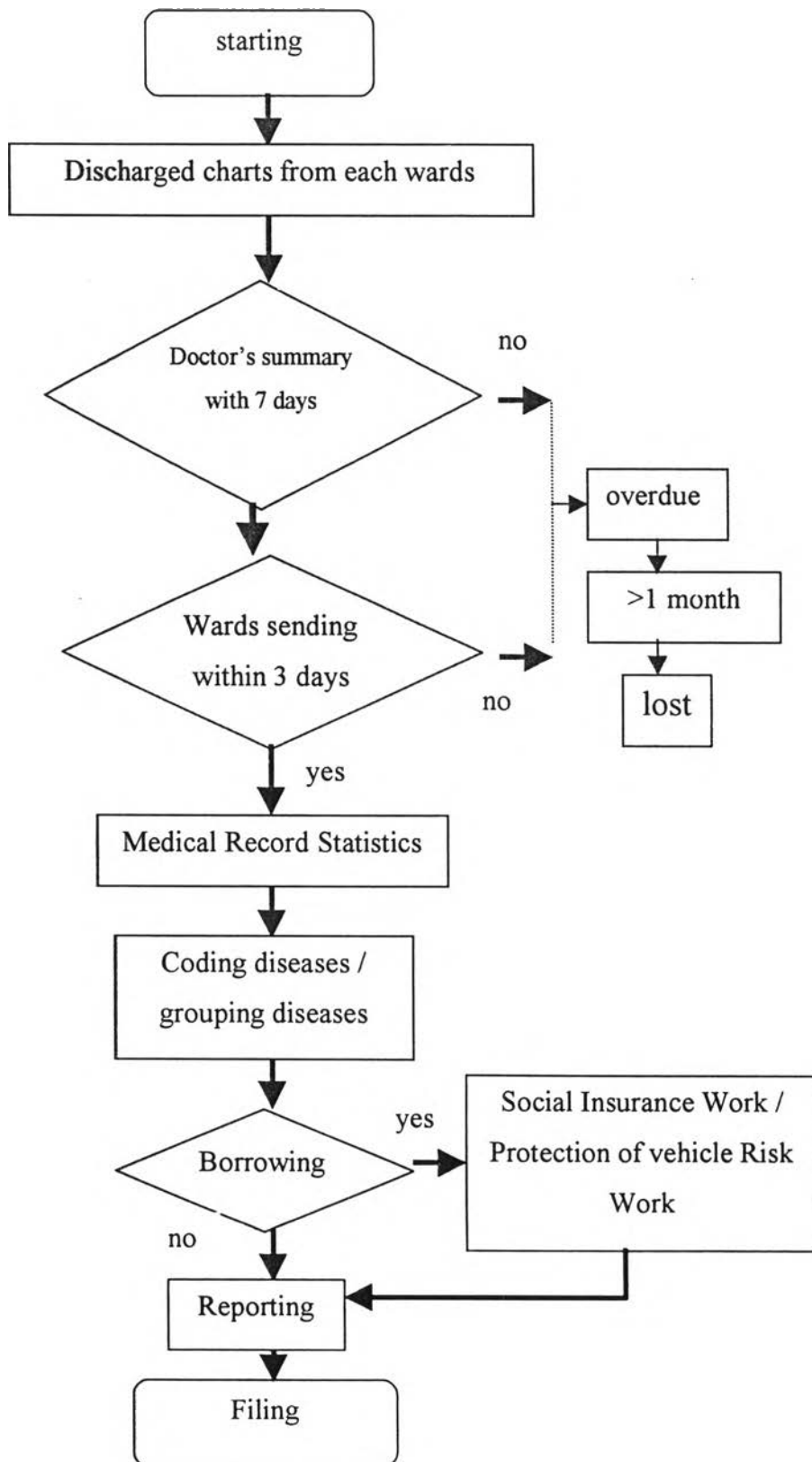
The new regulations of discharge charts

1. For patients' charts which doctor discharged from inpatient's wards of Roi-Et Hospital, the nurse in charge and the Head of the wards have to present these charts to the doctor for summarizing.

2. Checking the accuracy of charts within 7 days after discharging of charts. Recording charts which were sent to the Internal Medical Record Statistics work.

3. The Internal Medical Record Statistics Unit counts charts and records the coming of charts.

4. Checking the patients' charts which were discharged from wards within 7 days. In case that charts are overdue more than 7 days, the Internal Medical Record Statistics Unit will ask for the overdue charts from the wards by sending a list of overdue chart form with HN and AN to wards in order that the personnel in the wards of inpatients verify and take action within 3 days.

5. In case that there are no summarized charts and no overdue charts from the patients' wards more than 1 month, the charts will be considered as lost charts.

6. The Internal Medical Record Statistics Unit will code and group diseases.

7. In case that patients use their right of social insurance and vehicle risk protection, the personnel from social assurance and vehicle risk protection work will borrow charts from the Internal Medical Record Statistics Unit. The due time is within 2 days.

8. In case that the patients ask for evidence of refund, life insurance or accident insurance, the External Medical Record Statistics Unit will borrow charts from the Internal Medical Record Statistics Unit and make a record of borrowing together with signature. The due time is within 2 days.

9. Classify charts and arrange numbers of inpatients.

9. Plan continuous improvement

Objective

To examine the running system whether any obstacles occur or not.

Question for assessment

How can the continuous improvement plan be set up ?

Process

1. Setting team plan continuous improvement

2. Solving the new system while improvement

3. Presenting the hospital administrators

4. Setting a project of rewarding any unit that sends summary discharge charts completely, rapidly and punctually.