WARD MANAGEMENT SYSTEM

AQSA TABASSUM (02)
SHAMSA KANWAL(28)
HIRA KHALID (08)

BUISNESS PROCESS ENGINEERING

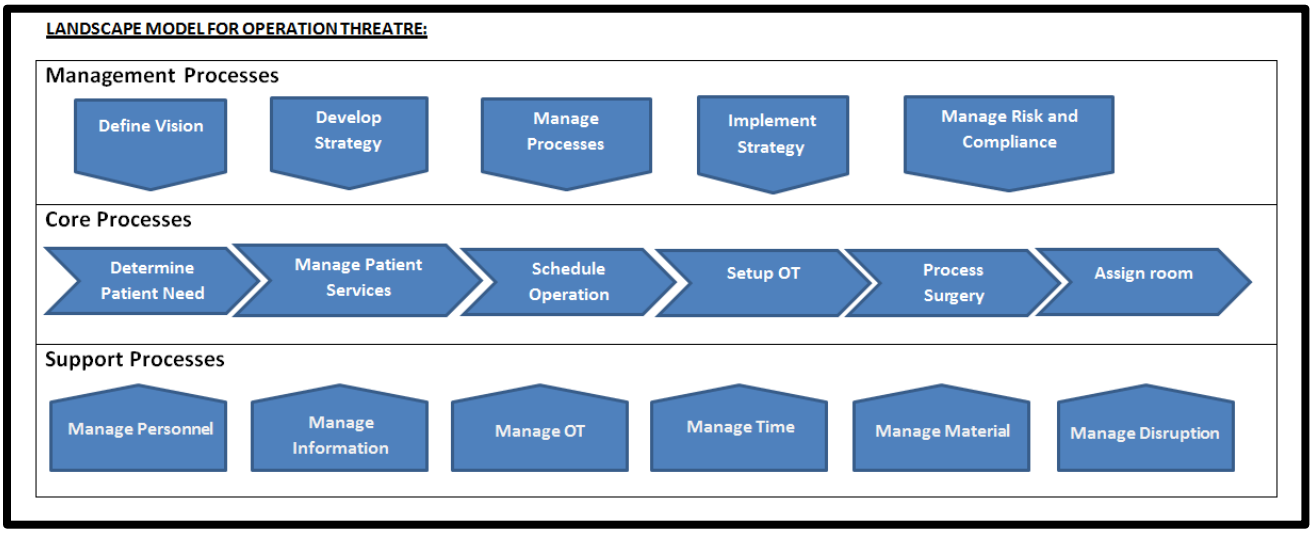
CLASS: BSE VA

WARD MANAGEMENT SYSTEM:

1. PROCESS DISCOVERY:

Our research showed that the ward round participants themselves already had a pretty good overview of their own ward round process. This however hasn't resulted into a documented overview of the ward round process. Hospitals need to understand that documenting the process is the first step in trying to improve it. The process overview allows clear communication between the different participants and it is the basis of a good process analysis.

LANDSCAPE MODEL:



PROCESS PORTFOLIO:

Determine Patient Need:

- Strategic Importance: 90%
- Feasibility: 40%
- Health: 90%

Schedule Operation:

- Strategic Importance: 95%
- Feasibility: 50%
- Health: 30%

Manage Patient Services:

- Strategic Importance: 85%
- Feasibility: 70%
- Health: 35%

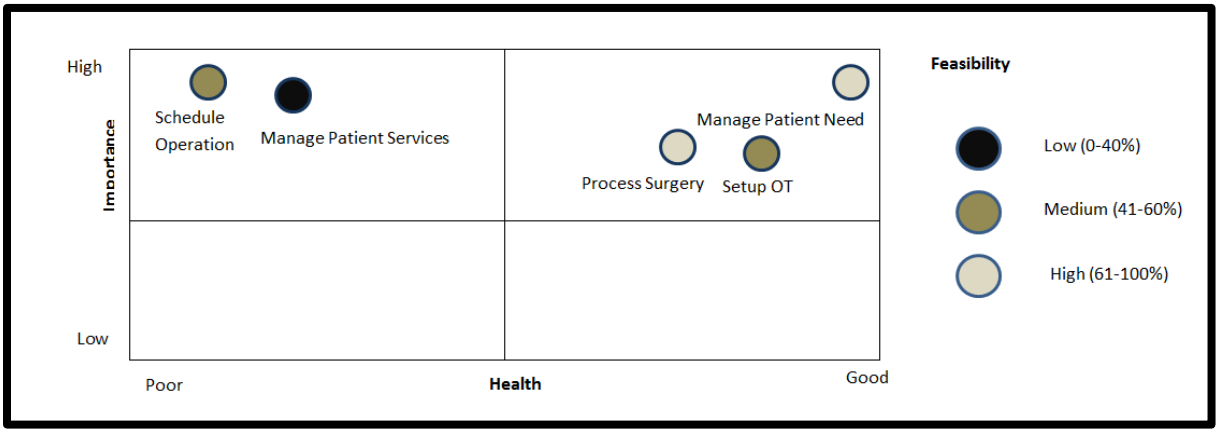
Setup OT:

- Strategic Importance: 80%
- Feasibility: 60%
- Health: 70%

Process Surgery:

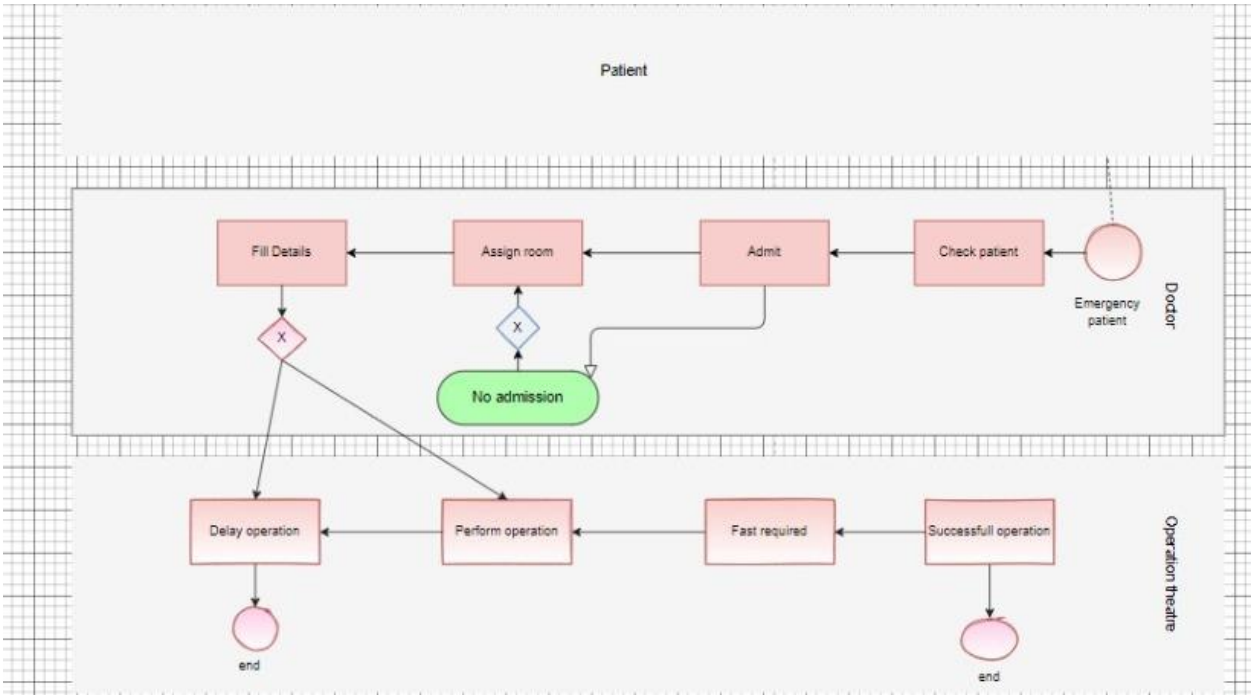
- Strategic Importance: 70%
- Feasibility: 65%

Health: 70%



2. PROCESS ARCHITECTURE:

AS IS MODEL:



Patient Satisfaction Fish bone Diagram:

STAKEHOLDER ANALYSIS:

Suppose that in hospital management system around 100 requests received per day and hospital makes 50 requests into account per day and more over only emergency cases are handled beyond that. Each request booking brings a profit of 100 Euro to the hospital management system and about 2% customers complained that they are not satisfied from their operation and 10% patients complained that there is delay in their operation.

ISSUE REGISTER:

ISSUE 1:

ISSUE NAME: Patient Satisfaction

PRIORITY: 1

DESCRIPTION: Staff, doctors and the equipment used in surgery makes feel to patients unsatisfied.

ASSUMPTION: About 2% of patients complained that they are not satisfied.

QUALITATIVE IMPACT: The patient severe from series of inconvenience and probably about 2% of patients that complained about satisfaction will leave this hospital for future.

QUANTITATIVE IMPACT: 2%*50*E100=Euro 100 per day

ISSUE 2:

ISSUE NAME: Delay in Operation

PRIORITY: 2

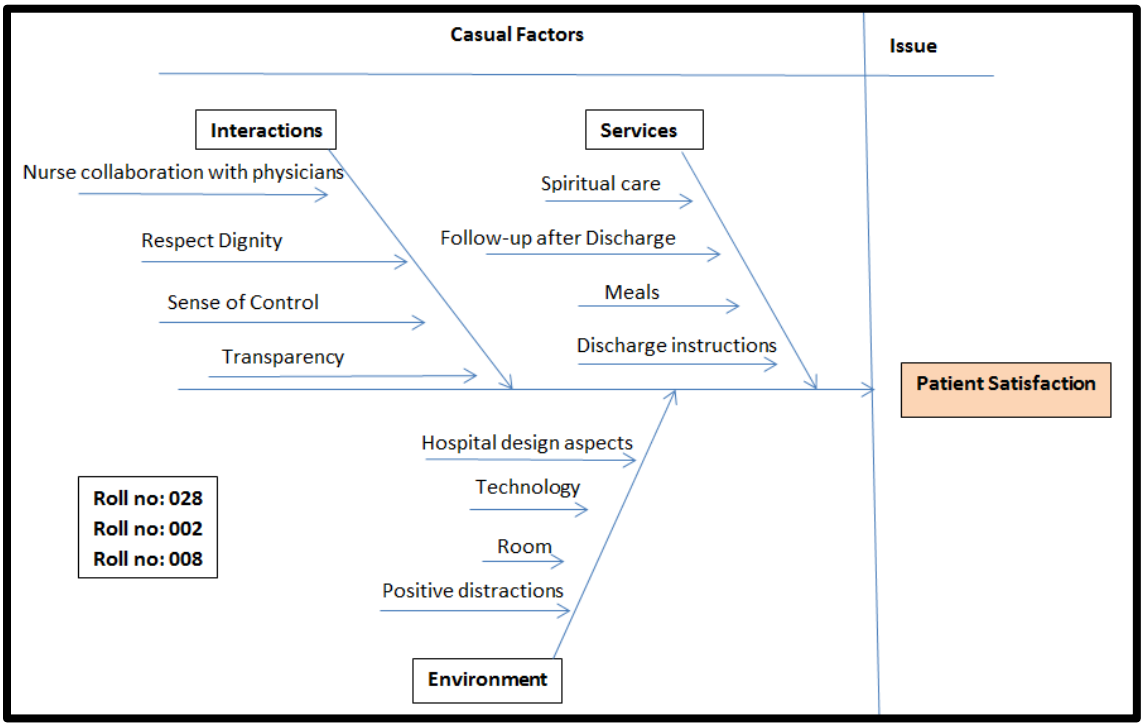
DESCRIPTION: Patients are not deal on exact time due to which operation is not conducted on time.

ASSUMPTION: About 10% of patient complains that they are not treated on the exact time of their operation time.

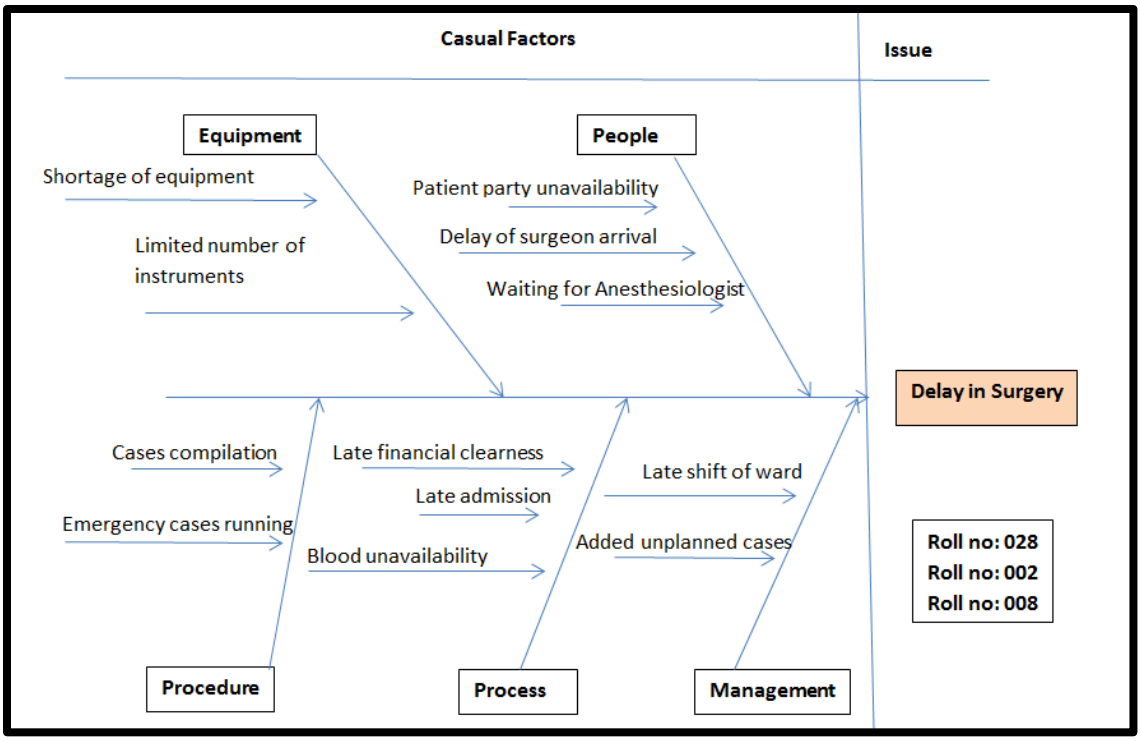
QUALITATIVE IMPACT: Not applicable

QUANTITATIVE IMPACT: 10%*100=10 inquiries per day

Patient Satisfaction Fish bone Diagram:



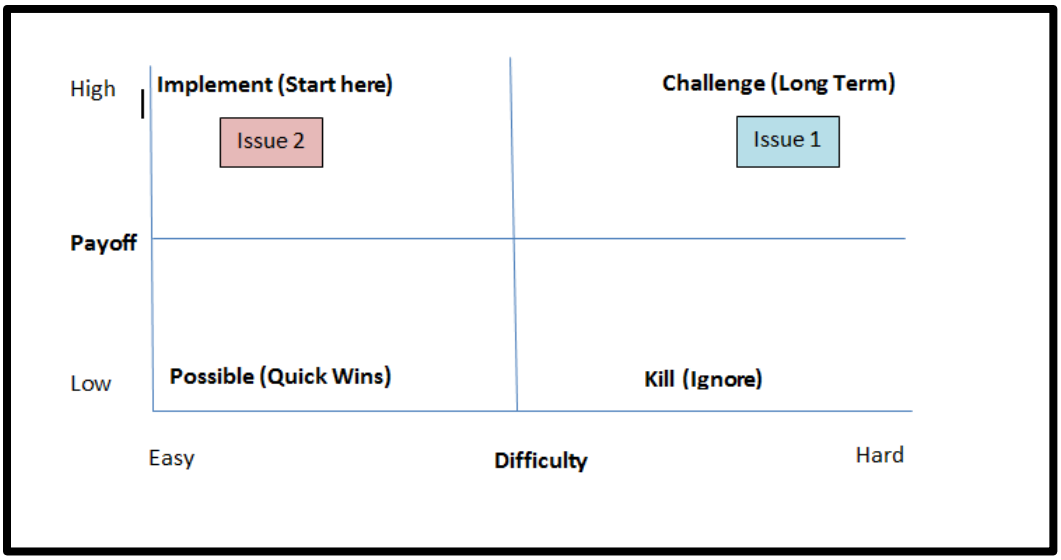
Delay in Operation Fish bone Diagram:



PICK CHART:

Issue	Difficulty	Payoff	Description
1. Patient Satisfaction	1	1	In order to satisfy the patient is a challenging task and it's hard to accomplish as well as customer pay high for the operation so there satisfaction matters
2. Delay in operation	0	1	Delay in operation can be easily managed by surgeon if he starts the operation on time and patient pays high for operation.

Difficulty	Payoff
Easy-0 Hard-1	low-0 High-1



3. PROCESS ANALYSIS

After you have made an as-is process model, it is important to start communicating about it with all the different process participants. The next step is to start analysing the performance of the ward round. What are the current problems and how can we improve? The process analysis should both be done in a quantitative manner as well as in a qualitative manner. The quantitative measures can be useful to understand what the cost drivers of the ward rounds are and where the doctors lose the most time. The qualitative analysis on the other hand might show some lack in quality of care, which is also very essential to the ward round. Previous sections already showed that the ward rounds have two big problems for process analysis. The first one is that nothing gets measured, so you just don't know the performance of the process. The second one is that known problems aren't documented. This section will give an overview of how hospitals can improve their process analysis approach. Then we will define performance measures for your analysis everything starts with understanding the goals of the process you are trying to analyze. What is important for the ward round? It is essential that you think about the goals of the different levels in your hospital. What are the hospital wide goals? What are the goals for our department? What are the goals for the ward round itself? This is

essential, because the ward round also has an influence on the department goals and the goals of the hospital itself.

DEVIL'S QUADRANGLE

Next to the ward round goals, it is also important to think about the overall hospital goals. The ultimate goal of a general hospital is to offer the best possible care to patients at the lowest cost. We will incorporate these goals into the process analysis by introducing the Devil's Quadrangle, which is a general process analysis method that focusses on four main goals

Figure 4 – Devil's quadrangle

It is called the Devil's quadrangle because of the trade-off between the different goals. More focus on cost will generally result in lower quality or lower flexibility. The idea behind it is that we want to improve the process as much as possible to improve all four of the dimensions. From that point, we want to make changes according to trade-offs and the preferences of the hospital management. Do we want more focus on cost? Or more focus on quality? Or on one of the other two dimensions

OBSERVED PROBLEMS OF THE CURRENT WARD ROUND:

During the 60 hours spend in hospitals for this research, several problems of the current ward round were noted down. This section will give an overview of these problems and discuss their effect on the goals previously discussed. This is not an exhaustive list of the problems of current ward rounds, so hospitals should still perform process analysis on their own ward round to get a good idea about the problems of their own ward rounds and the impact of them on their goals. 6.2.2.1 Micro-problems Some of the smaller problems of the ward rounds, that can mostly be fixed rather easy are listed in the table below.

Micro-problems of the current ward round	Time	Flexibility	Quality	Cost
Ward round gets interrupted by phone calls (doctors and nurses)	X		X	
Attention of ward round participants drops to the end of the round (in long ward rounds)			X	
Some hygiene matters aren't followed up like they should be			X	X
Patient privacy sometimes gets neglected				X
Short battery of tour car (Pc doesn't last the complete round)	X	X		
Slow computers	X	X	X	

MACRO-PROBLEMS:

The problems that have a bigger impact and aren't as easy to fix are listed below:

These problems have a much bigger impact than the ones discussed before and that is why we will go deeper into all three macro-problems. These problems do not occur in all the hospitals and most hospitals already have found a way to deal with these problems. It remains however important to discuss them to make sure we understand the reasons of their existence in the hospital which haven't fixed them yet.

1. Administrative work: Because of the responsibility of their job, doctors currently must fill in a lot of paper work and/or sign off on it. Although the reasons behind it are based on the goals of the ward round and are there to make sure that less mistakes in the ward round occur, the implementation hasn't been adapted to new technologies. This problem has a negative impact on all four dimensions of the Devil's Quadrangle and is accordingly very important to fix.

2. Communication errors: Some hospitals still work in a very old fashioned way where quite some communication happens via oral or paper communication. This has a clear impact on the amount of communication errors and diminishes the care offered to the patients. It also is the reason for double work, double checking and rework, which all have a very bad impact on the four dimensions of the Devil's Quadrangle.

3. Ward round scheduling: One of the returning problems in multiple hospitals is the organization of the ward round in the daily working routine of the doctors and nurses. In several hospitals, the ward rounds aren't planned in on a fixed time schedule. The doctors just pass by the department when it fits into their own schedule. This is very bad as it makes it hard for the nurses to be ready themselves and to prepare the patients for the ward round. It is also the one of the root cause of the micro problems of getting disturbed during the ward round. If you can perform the ward round on a scheduled moment, then everyone in the hospital will know when they can reach the doctor/nurse, or when they should postpone it. This macro-problem also increases the variability of the ward rounds, which is again very bad for the four dimensions of the Devil's Quadrangle. As you can see, all three of these problems have a negative impact on all four dimensions of the Devil's Quadrangle. This makes them very important and that is why hospitals should really focus to fix these issues. As mentioned before, some hospitals have done this and their ward rounds are working significantly better than the other ones.

GENERAL PROCESS ANALYSIS RECOMMENDATIONS:

The process analysis phase indicated three extra recommendations for the Belgian hospitals to improve their BPM approach:

Recommendation 1: Get an overview of the relevant goals Hospitals should clearly define their performance measures to be able to analyse the performance of their ward round and to be able to prioritize the biggest problems. It is important to decide on the relevant goals for your hospital and your department. The goals listed in this section can be used as a guide, but aren't fitting for every ward round. As mentioned before, ward rounds in an internal discipline will for example put more emphasis on really checking up on the treatment with the patient instead of just informing the patient, which is mainly the goal for surgery departments.

Recommendation 2: Measure the relevant performance measures both quantitative and qualitative. It is also important to measure those performance measures, since just having them doesn't provide you with the relevant information.

Recommendation 3: Document the performances and the problems. Following recommendation 2, it is of course also important to document these performances, since you otherwise can't perform any analysis on them. Hospitals in general already have started to do these kinds of things for their accreditation efforts. But this isn't enough. Accreditation is very important for hospitals and is a very good start, but it isn't a substitute for a good business process management. Hospitals should invest in both accreditation and BPM since

both can improve the effect of the other. Accreditation standards can for example be used to define the goals and performance measures of the BPM analyses

4.PROCESS REDESIGN

This section will indicate how hospitals should perform the redesign of their ward rounds. How can certain problems be fixed and what should the ward round look like according to the chosen goals?

Importance of the software system one of the main observation that was made during the empirical research was the effect of a good computer system on the efficiency of the ward rounds. The implementation of a correct system can significantly improve several of the micro- and macro-problems of the ward rounds. We will go over some of the listed macro problems and mention how a good system can improve them.

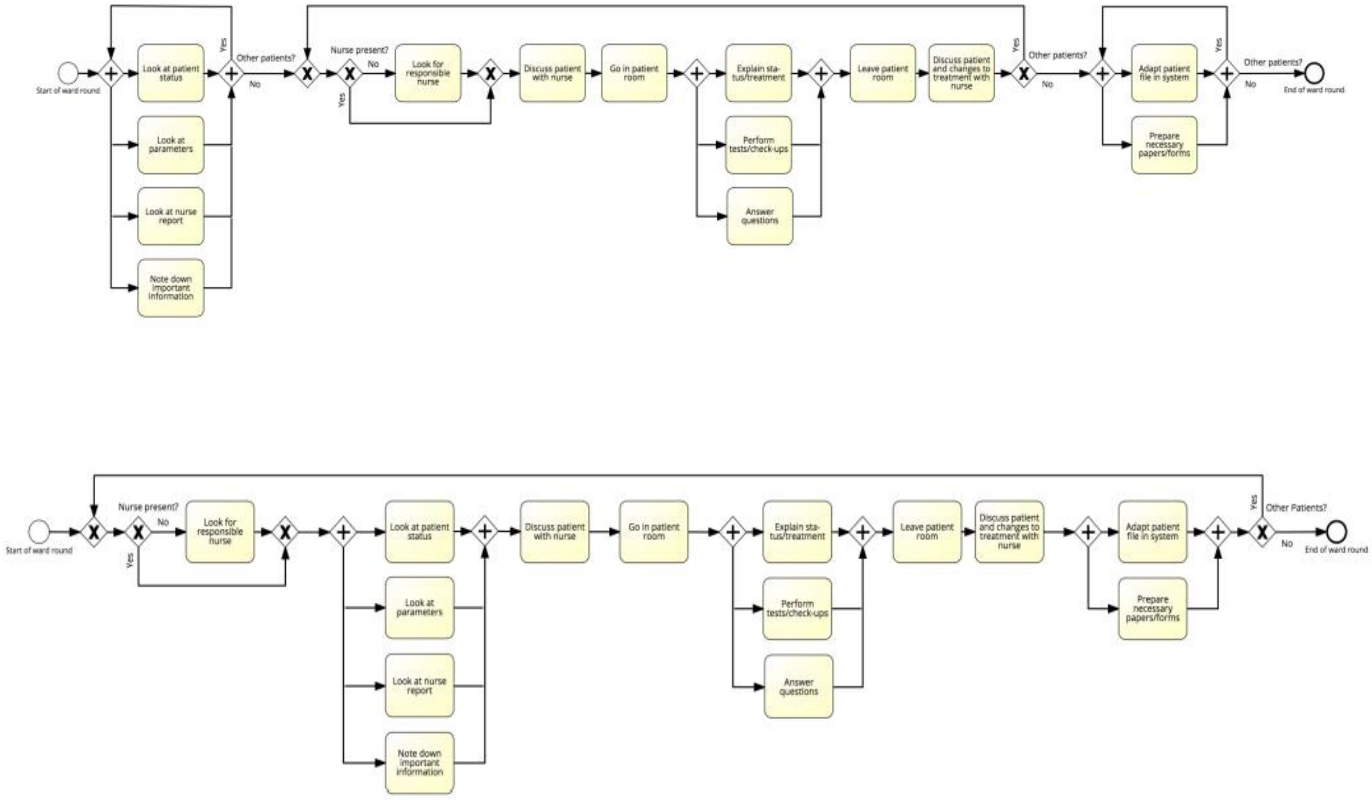
1. ADMINISTRATIVE WORK: the implementation of a good system allows the doctor to automatically generate the correct files and to digitally sign off on them by using his account. This saves an immense amount of time for the doctor and it also facilitates easier use of these documents. Discharge papers for example can be automatically filled in from the patient file and printed instead of having the doctor fill in the papers manually for every patient. The digitalization also lowers the amount of errors made in these documents. The same goes for lab requests, which had to be filled in manually before, and then had to be transported to the correct department. These papers easily got lost, or the information on them wasn't always easy to read, which could lead to significant errors or double work. This can easily be changed by doing the lab request via the computer system, which also allows the people from the other department to immediately ask if something isn't clear.

2. COMMUNICATION ERRORS: One of the biggest advantages of a good software system is the information overview it provides, not only to the doctor, but also to all other people involved in the care of the patients. The system allows doctors to digitally inform nurses of medical orders and explain why certain orders are made. All relevant doctors and nurses from the same department have access to the same orders, which diminishes the amount of communication errors significantly. It also allows communication to happen in between ward rounds and allows different doctors to take over the patients of colleagues

3. INFORMATION OVERVIEW: Although this wasn't one of the macro problems, the impact of a good software system on the information overview should also be mentioned. The information overview is very essential to the ward round since the ward round is all about communicating and gathering the correct information. The whole preparation phase of the ward round can be significantly

improved if the doctor has access to all the necessary information in a matter of seconds. In hospitals where the system is lacking, doctors must search through several piles of documents to find all necessary information on the patients and they aren't always sure that they have access to the latest results. A good information overview also allows nurses to more closely follow the treatment and the decisions of the doctors. Nurses know why they are performing several orders and aren't relaying anymore on the short explanation from the doctors during the ward round itself

TO-BE MODEL:



REDESIGN TIPS TO IMPROVE MICRO-PROBLEMS:

Several micro-problems where already listed in previous sections, but the solutions to these problems weren't discussed yet. Several small tips to improve these problems will be given next.

Micro-problem	Solution
Disturbances: calls, …	Fixed ward round schedules
Drop in attention towards the end of the ward round.	Shorter ward rounds or split up the ward rounds between different doctors/assistants.
Hygiene	Disinfectant in every room.
Patient privacy	Automatic log in system with private badge.

DISTURBANCES:

Micro-problem one can be fixed rather easily by implementing fixed schedules for the ward rounds. Doctors will still get disturbed for important and urgent matters, but other calls will be delayed until after the ward round.

ATTENTION DROP:

The attention drop can only be fixed by lowering the time a doctor must focus during his ward round. This can be achieved by improving the ward round itself, or by splitting the ward round between several doctors. Hygiene The third micro-problem focusses on the hygiene. This is one which already has received a lot of attention in hospitals and is thus already improved a lot by implementing disinfectant in every room. It now remains important to increase the awareness of the staff to utilise this disinfectant every time.

PATIENT PRIVACY:

The last problem occurs in ward rounds of the second model where they opt to take a tour car with them during the ward round. The doctor often goes into the patient room and leaves his computer unlocked outside of the room. This makes it possible for people that pass by to see private information. This can be fixed by utilizing a system which automatically locks if it isn't used and unlocks very smoothly if the doctor returns. To make sure that the doctor doesn't lose time while logging in every time after he has visited a patient, you can work with personal badges which automatically unlocks the system. One of the observed hospitals already used such a system.