NYE OUS INTERNSHIP

PORTER PROJECT

Analysis of the ways porters can support nurses by transporting patients from the PO ward in Rikshospitalet.

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RELEVANCE

By 2026, for the first time, there will be more elderly people than children in the country. This demographic shift increases the pressure on healthcare systems, highlighting the crucial need for changes to enhance hospital efficiency. By reallocating tasks so that porters take on more logistics and support functions, hospitals can relieve nurses and improve operational efficiency. This strategic shift contributes to faster patient throughput and better resource utilization. Adapting task distribution and strengthening the use of all hospital staff, including porters, is essential for maintaining high-quality patient care and managing future healthcare challenges more sustainably (SSB, 2022).

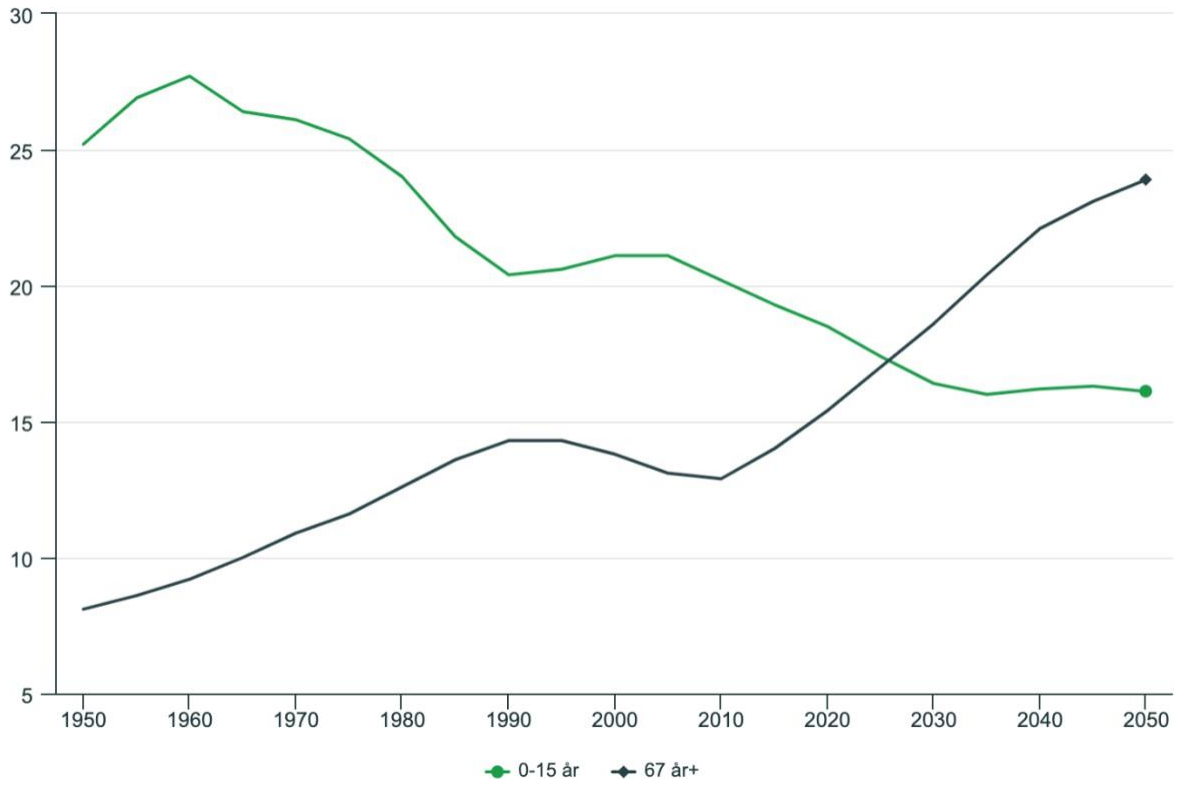


Figure 1, a graphical depiction of the rising aging population compared to decreasing younger population acquired from SBS (2023).

WHAT IS A PORTER & TASKS

The focus of the research is on the role of porters in the hospital facilities of Rikshospitalet and Ullevål. Hospital porters are those workers who have the responsibility of moving patients, equipment and medical supplies around the buildings, assisting and supporting nurses and doctors and facilitating the smoothness of operations. Although their role could be perceived as lateral, what they perform is essential to the logistics of the facility. There is a total of 23 porters reported at Rikshospitalet and 59 at Ullevål. In addition to them, the hospitals benefit from the service of extra staffing: 14 are the people that help out at Rikshospitalet, while there are 37 at Ullevål. The tasks they are assigned are numerous; however, depending on the hospital, some tasks are not performed. The following table shows an overview of the tasks that are performed by porters at the two hospitals visited:

	Rikshospitalet	Ullevål
Patient transport		
To operating room	No	Yes
From postoperative	No	Yes
Intensive care patients	No	Yes
From helipad	No	Yes
To and from bus Health express	Yes	Yes
To and from x-ray and other treatments/examinations	Yes	Yes
Transfer of patients to and from patient arrival/departure	Yes	Yes
Assist in transfers of patients	No	Yes
MORES (care of the deceased)	Yes	Yes
Moving between bed units	Yes	Yes

Moving patients from reception to bed post	Yes	No
To and from KAD*	No	No
Medicines		
Regular and/or scheduled rounds	Yes	Yes
Between departments transport	Yes	Yes
From pharmacy	Yes	Yes
Return medicines to the pharmacy	No	Yes
Return packaging	Yes	Yes
Cytostatic	Yes	Yes
Samples/medical tests		
Sample rounds	Yes	Yes
From departments to the lab	Yes	Yes
Frozen section procedure	Yes	Yes
Samples from external locations	No	Yes
Blood products		
Collecting blood through the pneumatic tube system	No	Yes
Collecting blood at deliver/distribution unit	Yes	Yes
Return of blood	Yes	Yes

Delivery from blood bank to other locations	Yes	Yes
Beds		
Delivery of bed to departments	Yes, for *mottak*	Yes
Collecting dirty beds to the bed central	No**	Yes
Cleaning and disinfection of beds and putting on new linen	No**	Yes
Distribution of equipment for beds (IV stands, bed rails,…)	No**	Yes
Gas		
Delivery/distribution of gas to departments	Yes	Yes
Collecting empty gas cylinders	Yes	Yes
Scheduled rounds	Yes	Yes
Various tasks		
Collecting of wheelchairs	No	Yes
Collection and delivery of styrofoam cases back to the blood bank	Yes, at night	Yes
Luggage handling	Yes	Yes
Delivery of post	Yes	Yes

Delivery of equipment between departments and units	Yes	Yes
Equipment to and from MedTech	Yes	Yes
Delivery of patients' journals	Yes	Yes
Escort next-of-kin to the patient post	No	Yes
Collect material at the hotel for shredding	No	Yes
Sterile rounds	No	Yes
Goods from and to liquid storage	No	Yes
LUCAS (CPR) in emergency situations	No	Yes
Tasks related to disasters/emergency events	No	Yes
Renovation/waste	No	Yes
Internal food transport	No	Yes

Table 1, shows the division of the tasks for both Ullevål and Rikshospitalet based on tasks porters.

**Kommunal Akutt Døgnenhet*, Municipal Emergency Day Care Unit

**Rikshospitalet has a specific group of people that take care of the beds, while at Ullevål regular porters have that task.

PORTØRCOM WORKINGS

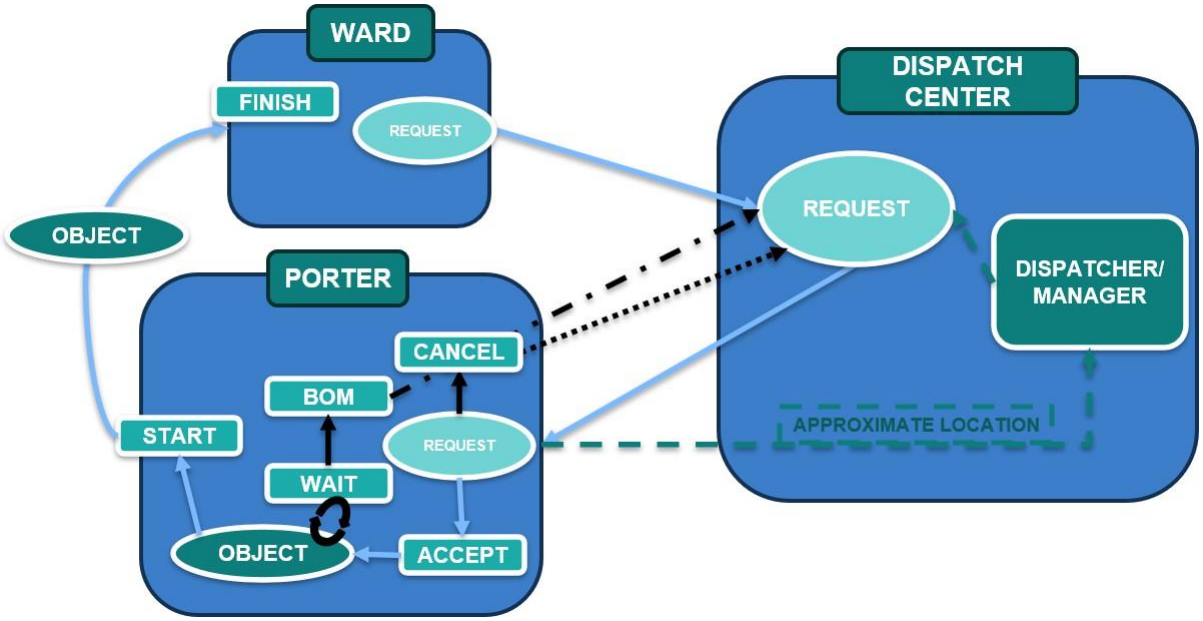


Figure 2, schematic representation of the inner workings of PortørCom.

The communication system used to send task requests between nurses and porters is PortørCom. PortørCom works as follows, a request is made in PortørCom by a nurse in the ward. This request is then sent to the dispatch centre where the dispatcher/manager assigns the request to a porter. Taking into account the location of the request as well as the location of all the porters based on the location of the last request the porter was sent to. The request is then sent to the closed porter to minimize travel time. The porter can then either accept or cancel the given task. When cancelled the task is redirected back to the dispatch center where the manager will reassign the request to another porter. When the request is accepted, the porter locates the object that needs to be transported. If the porter needs to wait, and the waiting time is within the send limit, the porter can wait. If not, then the porter needs to press “bomtur”, and the request goes back to the dispatch centre. At the dispatch centre, the request will be sent out again. If the porter can wait, the object will be transported to the ward and the tasks will be finished. As depicted in the image above, there is no direct communication between the ward and the porter. Leaving the ward clueless about the progress on the request. Also, the dispatcher only has an approximate location based on the location of the last task performed, this limits the

accuracy of the current location of the porter, possibly causing a longer transport time in comparison to other available porters. In addition, leaning heavily on the mental mapping capabilities of the dispatcher/manager. In addition, the PortørCom porter devices can show up to 3 tasks at the same time. Limiting the amount of requests sent to each porter.

HYPOTHESIS

Is it possible at Rikshospitalet for porters to support nurses in the transportation of patients from the PO ward to the regular ward?

METHODS

To answer the research questions of this paper, firstly interviews were conducted with the following stakeholders:

Hospital	Department	Interviewee
Rikshospitalet	Porters	Dispatcher & Porter
	PO	Lead Nurse & Nurse
	Cardiology	Surgeon
Ullevål	Lab	Department head
	Porters	Dispatcher & Porters
	PO	Lead Nurse
Union	Nurses	NSF
	Porters	Fagforbundet

Table 2, shows the different stakeholders interviewed from January 2024 to May 2024.

INTERVIEWS

For the interviews, a set of standardized questions was developed (see Appendix). The answers to said questions were to form a better view of the daily workings within their job as well as highlight possible problem points and propose possible solutions. The first interview was conducted in February with the porters at Rikshospitalet, whereafter the visit to the postoperative department of the same hospital was carried out, with a tour of the department after an introductory meeting (the postoperative will be referred to as PO form here onwards). For the reasons stated above, we also toured with and interviewed the porters at the Ullevål hospital. The following month we concluded other three visits in addition to a shadowing experience: the first one was the interview at the cardiological department at Rikshospitalet, then the nurse-shadowing experience at the PO department of Rikshospitalet, following the tour of the clinic for laboratory medicine at the Ullevål facility, lastly the interview and visit to the PO department at the same location. Another shadowing experience was carried out with a porter at Rikshospitalet in the month of April. In conclusion, one meeting with the Norwegian Nurses

Organization (NSF) and one with the Norwegian Porters Association (Fogforbundet) were held online during the month of May 2024.

SHADOWING

In addition to interviews, to get an even better scope of the porters and PO ward nurses' daily workings and better answer our research question, shadowing was performed at Rikshospitalet. Both PO nurses and porters were shadowed for one working day shift. The dayshift at the PO ward took from 7:30 AM – 15:00 PM while the shift at the porters took from 8:00 AM – 15:00 PM. The shadowers were instructed not to interfere with daily proceedings and only ask questions when appropriate. No patient data was recorded, and no patient was interfered with. The shadowing of both wards was performed by two different people on two different days, but both days were on a Tuesday.

INCLUSION CRITERIA

After qualitative data was collected through interviews and shadowing, an analysis of data from PortørCom was performed. The data set contained all requests for the tasks of both hospitals from the 1st of January 2024 till the 31st of March 2024. In both datasets incomplete requests were excluded, this includes blanks in the categories: From, To, Task order, Order time, Start time, Completed, Status and Type. Thereafter, only the day and evening shifts were included, which ranged from 7:00 AM to 23:00 PM. During the night shift, PortørCom is not used correctly. In addition, only tasks performed were included in the analysis, to exclude any duplication in tasks or ''bomtur'' tasks. Therefore, only tasks with the status ''Utfort'' were included. Therefore 99% of the original dataset of Ullevål was used while only 74% of the dataset of Rikshospitalet was included. After the exclusion criteria were applied calculation took place. The program Excel was used for this analysis.

DELAY CALCULATION

Firstly, the general delay for both hospitals was calculated. By calculating the difference between Completed and Order time, the time per request was calculated. Thereafter the requests were

sorted based on Type. The different types with their corresponding delay criteria are pictured in Table 2 below.

Hospital	Category of Task	Waiting Time Criteria
Rikshospitalet	Normal	30 min
	Urgent	20 min
	Critical	20 min
	Preordered	5 min
Ullevål	Normal	40 min
	Urgent	25 min
	Critical	20 min
	Preordered	5 min

Table 3, showing waiting time criteria for both hospitals divided by category of tasks.

Based on these delay criteria, the percentage delayed per hospital per type of task was calculated.

When looking at the table both hospitals can be compared. The table is divided based on the category of tasks with the categories being, Normal, Urgent, Critical and Preordered. Looking at the category Normal, it can be noted that there is a 10-minute difference between both hospitals. For the category Urgent, the difference in waiting time is 5 minutes. As for the category Critical, both hospitals have the same waiting criteria. Lastly, looking at the category Preordered, both hospitals have 5-minute waiting time criteria, which is quite small.

CAPACITY CALCULATION

In addition to the general delay per type of task per hospital, the capacity per hospital was also calculated. These capacity calculations are based on the average amount of tasks per hour per hospital. With 60-minute time increments, including only the day and evening shifts, so from 7:00 AM – 22:59 PM. The expected capacity was then calculated using the shift planning for the month of May 2024. Given that one porter per shift should complete 25 tasks. A day shift consists of working from 7:00 AM – 15:00 PM, which is 8 hours. The average expected amount of

completed tasks per hour is 3,125 tasks per porter per hour. The expected capacity was then plotted against the real capacity to calculate the difference and determine the under- or over-staffing of porters per hospital. As the data contained the time and date in the same cell a split cell was performed, separating the time and day. Afterwards, a column with the value of 1 per request was added. Thereafter a SUM IF calculation was performed to get the average amount of tasks per hour per hospital.

PO PILOT PROJECT

In March, the PO department at Rikshospitalet initiated a pilot project aimed at assessing the time required to transfer patients ready for discharge back to their respective wards following surgery, anesthesia etc. The assessment process began once a patient was deemed stable enough for discharge by the PO care team, who then notified the relevant department to collect the patient. Data capturing everything from notification to actual patient pick-up were systematically recorded by the PO secretary in an Excel sheet, from Monday to Friday, excluding weekends. In that sheet, it was written down “N” if a nurse picked up the patient, and a “P” if a porter picked up the patient. It was also written down if the PO-ward had to notify the respective wards more than once. In that sheet, you can see what time they were notified, and what time they were picked up at the ward. All values were recorded for one month allowing for the analysis that follows.

RESULTS

INTERVIEWS & SHADOWING

From all the interviews, visits, tours and shadowing experiences we were able to carry out, we gathered many observations that allowed us to perform a full analysis of the porter's role in the two hospitals, with a particular focus on what is particularly relevant for the PO department. All of the findings were then sorted into a table according to the SWOT analysis method, with a focus on the importance of those elements per department and per hospital. The SWOT analysis methodology allowed us to define what are the strengths, the weaknesses, the opportunities and the threats that are encountered in the workplace.

On the positive side, the strengths identified are multiple. Patients only leave the PO department when they are considered as stable: the parameters used are common to both hospitals (see Appendix).

Coordinators at both hospitals can change the urgency of the calls that they receive. Although it serves as a filter to make sure that the severity of the call is appropriate, coordinators do not know exactly if the label of the request is accurate. Porters serve as a good meeting point between the coldness of their professional role and the warmness of human interaction by chatting with patients during transportation, allowing them to distract.

The findings observed specifically at Ullevål include nurses helping porters by bringing the beds to the "bed central" in the basement when their shift is over at Ullevål. Secondly, porters' tasks related to rounds for blood/urine / other samples are highly appreciated by the clinic for laboratory medicine. They are almost always on time and do exactly what is needed by the laboratory specialists. Lastly, porters are responsible for taking all patients from the PO department back to their bedposts.

The findings observed specifically at Rikshospitalet include the project that was carried out at the PO ward during the month of March which allowed us to gain more quantitative insight to answer our research question. Furthermore, the efficiency of the nurse coordinator at the PO department at Rikshospitalet allowed all nurses to have assigned patients quickly with very little downtime in between one patient and the other.

Along with the strengths, weaknesses are detected. There are many observations common to both hospitals. PortørCom is a very slow-working platform and an old system. It can only be used up until 17:00 and the pagers can only receive up to three requests per time. There is an overuse of emergency calls: the coordinator can prevent this only partially.
Some tasks cannot be performed by porters as they would require additional medical training, for example, the switching of oxygen source from the wall plug to the oxygen tank attached to patients' beds. This creates conflicts and misunderstandings between porters and nurses.
Porters also have to wait for nurses when they bring patients back to the beds ward after visits. This can take time and porters might have to wait for a long time before accepting the next task.
Additionally, porters waste time searching for misplaced equipment such as wheelchairs or bed rails.
Decision-making is performed in the higher levels of the hierarchy, making it harder to solve issues in the lower levels of the hierarchy and making changes harder to be adopted.
Furthermore, since porters have a very diverse background (as they do not need a specific bachelor's degree), their knowledge is different, and it might be necessary to provide them with extra training.
The findings observed specifically at Rikshospitalet include the long waiting time for porters between one task and the other. At the PO department, patients are not collected by porters but by nurses. After 17:00, the PO ward has to call manually the porters to submit a request. Porters will be called directly by the wards until 7:00 the next morning, when the shift of the coordinator starts.
Moreover, the bed-washing machine is broken. It is expensive to fix it, however it takes a long time for porters to clean beds manually.
At Ullevål, after 23:00, PortørCom is set to "automatic", meaning that the tasks will be assigned randomly to porters without taking into consideration their last location.

The improvement opportunities are multiple. The most important is UniteTask, the new platform that is being developed to substitute PortørCom. This system has many more functions, it is

faster and would allow nurses and porters to communicate directly with each other through direct messages. Having direct communication possibilities would help solve misunderstandings and improve trust between porters and nurses. To support the new system phones are going to be purchased and used instead of pagers.

Porters could get additional certifications and/or additional training during their 14-day training period when they are first hired. Allowing porters to support nurses with some of the tasks would take away extra work from nurses and distribute it back to porters, allowing them to participate more in patient care. In particular, at the PO department at Rikshospitalet porters could take on the task of transporting patients back to the ward as the patients only leave when "stable", meaning they do not need medical assistance. The possibility for porters to perform those tasks could also be supplemented by the closure of the information gap. Nurses would feel more comfortable allowing porters to perform those tasks when informed about what porters' abilities and knowledge are. To further decrease the information gap, nurses could participate in the training for porters in some of those tasks. More training could also be performed by external players. In addition, using location tracking services for equipment would allow to always know where things are, without "wasting" time in searching for them.

The threats encountered are now the most important focus points. When nurses leave the ward to go to the PO department to pick up patients at Rikshospitalet, they leave behind the patients they have under their care at the ward, entrusting other nurses to take care of them in addition to their existing patients and creating a threat to patients' safety and security.

There is a lack of direct communication between porters and nurses and there are no direct means of communication that could be used by them. PortørCom does not allow that, and the feedback system used, Achilles, only reaches coordinators. It is mainly used for complaints and supervisors will refer the problem to the person concerned, leaving no space for explanations.

The culture is a big threat: the strong hierarchical structure of the hospital is fomented by the information gap between different groups. In its turn, the information gap creates severe trust issues that become a big problem in the prospect of the future merger.

What is particularly striking is the inefficiency of the system used. PortørCom is old and outdated. It does not allow for more than three tasks to be shown on the pager. The pager buttons do not always respond to normal pressure, in fact, it is sometimes necessary to press them multiple times before the selection is recorded. When a task is received from the pager, the porter has to press the accept button in order to be able to start the task. To start the task, the button has to be pressed a second time. To record the finishing of the task, the button has to be pressed a third time. Because of this button malfunctioning, sometimes the multiple pressing of the button accepts, starts and finishes the task in the same moment, creating logistics problems. The porter has to call the coordinator, ask for the reassignment of the task or ask for the task information in order to complete it. Considering that there is no communication platform, when delays happen or when this situation happens, nurses or doctors who are waiting for a porter to arrive are not aware of what is happening and will most likely complain about it. Pagers do also crash, not being able to receive tasks and wasting time to restart it. Oftentimes, pagers are delayed in receiving the tasks sent by the coordinators: it can take up to two minutes between the coordinator assigning the task and the task appearing on the pager.
In addition to this already lacking communication system, task requests for the most common patient transport are requested by the ward of arrival instead of the departing ward. Therefore, given no known notification to the latter where the patient needs to be picked up from, patients commonly are not ready for transport. This often results in long waiting times for porters, causing them to either “Bomtur” the task or pick up a delay.

PortørCom is not the only thing that appears to be lacking. Beds and wheelchairs that are used for transportation are often missing or require an extensive user's manual which is not given out. Porters learn their functioning based on experience causing a big delay in patient transport. In addition, the hospitals keep several different versions of equipment, each one used differently, causing physical strain upon nurses and porters who use them. As nurses are not taught how to move the beds correctly, they unbeknown stand in the way of porters trying to transport patients.

Looking towards the future and the common merger, porters seem to be hesitant. During the shadowing experience, the pilot project carried out in Ahus was discussed. Here porters are allowed to take blood samples themselves. Aside from the results of the pilot, porters outed their concern of not receiving the correct training to perform these additional tasks. In addition, some outed to not want to carry the responsibility of the additional tasks, stating that if they wanted to take blood samples, they would have trained to be nurses. Furthermore, it became clear that NYE OUS trains more porters than they can promise a place to within their facilities, theoretically wasting the investment made in them.

When asked about the merger, it became clear that they are unaware and kept in the shadows about what will happen in the future. The uncertainty about job security was noticeable as there does not appear to be a plan to guide the merger of the two groups of personnel and of the two different cultures.

PO PILOT PROJECT

The PO project aim was to investigate the duration patients ready for discharge from the postoperative ward had to wait, before being transported by a nurse or a porter. Nurses at the PO ward recorded the waiting time by writing down when they contacted the nurses or porters, and how long it took before they actually came to pick up the patient for transport. We analyzed this information and got some interesting findings.

During March, the porters were contacted 36 times, exclusively for C-section patients, while nurses from various departments were contacted 772 times. As of today, the porters are only supporting nurses at the PO-ward with C-section patients, because they are considered “stable” (see Appendix). The analysis revealed average waiting times of 14 minutes and 30 seconds for nurses and 14 minutes and 17 seconds for porters. The total waiting time in March accumulated to 19 hours and 34 minutes, giving us 11572 minutes in total. A cost analysis was performed to determine what the cost of the waiting time in March was. The postoperative stay costs NOK 61 232,00 per day at Rikshospitalet. This includes the average cost per day for nurse and doctor expenses at the PO, average goods cost per PO Day for doctor expenses, the average cost (goods and wages) per PO Day for doctor expenses, overhead sats as internal rent, electricity + heating,

management salaries and administration. Looking at the cost for the PO ward, this waiting time costs 492 067,16 NOK a month and an estimate of 5 904 805,87 million NOK a year.

2023 Postoperative Daily Cost Analysis at Rikshospitalet		March Waitingtime		
Average cost per PO day for nurse expenses	kr 42 943,05	March Waitingtime in hour		192
Average goods cost per PO day for doctor expenses	kr 562,55	March Waitingtime in min		34
Average wage cost per PO day for doctor expenses	6 673,51	Total March Waitingtime in min		11572
Average cost (goods and wages) per PO day for doctor e:	kr 847,54			
Subtotal	kr 51 026,66			
overheadsats (internal rent, electricity+heating, management salaries, administration)	0,2	Cost PO/day	NOK	61 232,00
		Cost PO/hour	NOK	2 551,33
Total cost per PO day at Rikshospitalet 2023	NOK 61 232,00	Cost PO/min	NOK	42,52
		Total cost of Waitingtime/year	NOK	5 904 805,87
		Total cost of Waitingtime/march	NOK	492 067,16
		Total cost of Waitingtime/week	NOK	123 016,79
		Total cost of Waitingtime/day	NOK	24 603,36

Table 4, showing the cost breakdown of the waiting time measured during the PO project performed at the PO ward of Rikshospitalet.

This is only for Monday to Friday; we can assume that the number would have been even greater if data from the weekends were also collected. If we estimate the numbers to be applicable for the rest of the year, including the weekends, only the waiting time would cost NOK 8 980 225,59.

As of right now, most of the transportation of the patients at Rikshospitalet is done by the nurses from different wards. This means that the nurses are leaving their respective wards to pick up the patients. The PO-ward has stated that an acceptable waiting time is 20 minutes. Of 808 patient transportations in March, 24% of them were above 20 minutes, with an average waiting time of 29 minutes. This indicates that the nurses that were notified about their patient being ready to be picked up, were not able to come. A nurse has other patients to take care of and has to

prioritize their time, so it doesn't affect the patient's security. Doctor visits, medication, and unexpected events are some tasks that are highly prioritized.

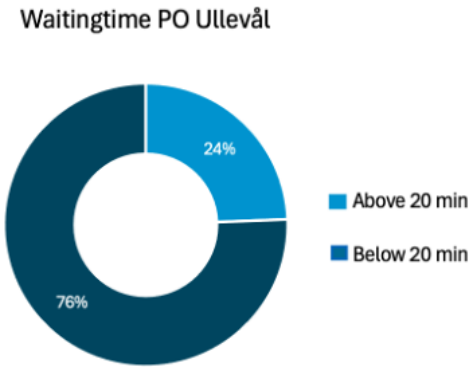


Figure 3, shows a pie chart of the percentage where waiting time was above the acceptable criteria of 20 min.

A pie chart was also made to show how many sections were in the postoperative ward throughout March, the black color represents the times that the porters are 'allowed' to transport as of today. The black section is 8 hours where patients were waiting for a porter, and all of the blue tones are 184 hours where patients were waiting for a nurse. This means that 184 hours a nurse left her respective ward, leaving strain on colleagues, compromising patient care, and increasing the risk of adverse events. Taking you back to the SWOT analysis about patient security being a threat, if we assume that these 184 hours are applicable for the rest of the year, this means that if this does not change, a nurse will lose over 2000 hours of hands-on time with the patient, equating to 92 days a year.

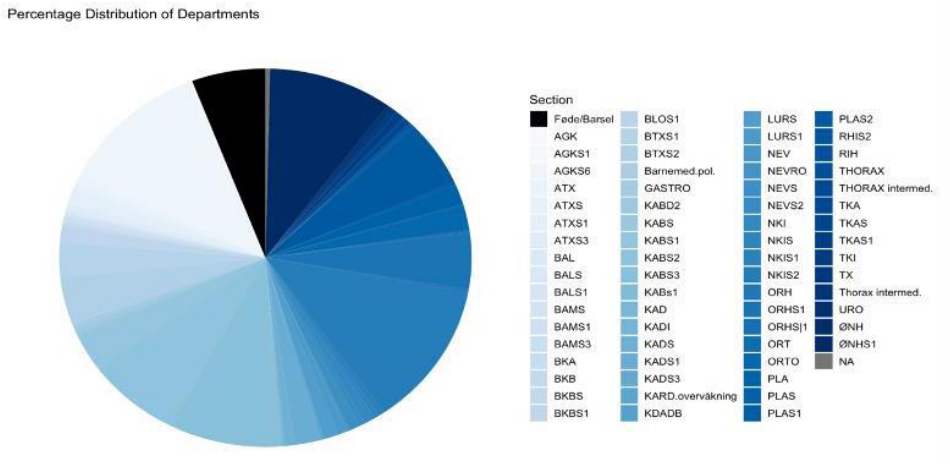


Figure 4 shows a pie chart where the black slice shows the percentage of transportation from the PO ward to the regular ward performed by porters while all other categories are covered by nurses.

Salary assessments indicated the median gross salary for nurses is NOK 721 700 and for porters NOK 651 000. When we look at the average waiting time for a nurse and a porter to pick up the patient, it shows us that 14 minutes and 18 seconds costs NOK 745,42 for a nurse and 14 minutes and 10 seconds costs NOK 666,12 for a porter. This is a difference of NOK 79,30 on average. If we estimate these numbers to be applicable for the rest of the year, the hospital will save NOK 818 740,63 a year solely by using a porter instead of a nurse.

Porter Waitingtime		
March Waitingtime hours		8
March Waitingtime min		30
Total Waitingtime March (mi		510
Average waiting time		00:14:17
Min waiting time		4 min
Max waiting time		35 min
Total patients March		36
Salary (median OUS)	NOK	465 000,00
Gross sallary (*1,4)	NOK	651 000,00
Gross sallary/hour	NOK	352,65
Gross sallary/min	NOK	47,02
Gross sallary/sec	NOK	0,78
Average cost for Porter	NOK	671,61
Total cost **Porter** March	NOK	23 980,50

Nurse Waitingtime		
March Waitingtime hours		184
March Waitingtime min		4
Total Waitingtime March (min)		11044
Average waiting time		00:14:30
Min waiting time		1 min
Max waiting time		1 hour + 47 min
Total patients March		772
Salary (median OUS)	NOK	515 500,00
Gross sallary (*1,4)	NOK	721 700,00
Gross sallary/hour	NOK	390,95
Gross sallary/min	NOK	52,13
Gross sallary/sec	NOK	0,87
Average cost for Nurse	NOK	755,84
Total cost **Nurse** March	NOK	575 691,93

Table 5, shows the average waiting time of patients at the PO ward, combined with the gross salary of nurses and porters, cost estimates were made.

CAPACITY

In Figure 5, the average task per hour is depicted divided by the type of tasks per hour of Rikshospitalet. The peak times can also be determined and are better visible in Figure 6. Here four distinct peak times are visible. That being from 9:00 – 10:59 and from 13:00 – 13:59 for normal tasks and from 8:00 – 8:59 and 12:00 – 12:59 for preordered tasks. The most tasks ordered per hour of the day are normal tasks, then preordered, as follows urgent and lastly critical.

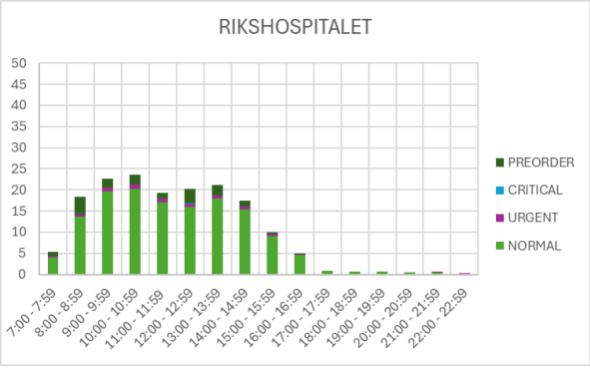
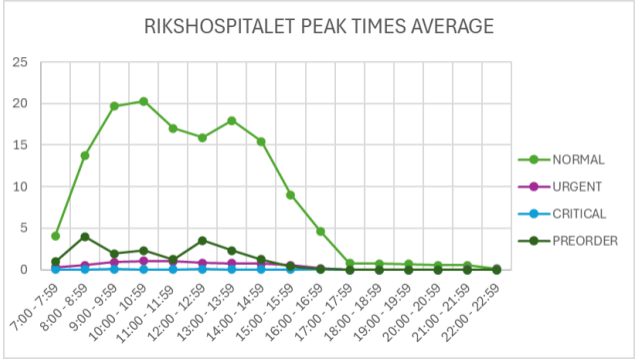


Figure 5, average tasks per hour per category for Rikshospitalet



ure 6, average peak times per day at Rikshospitalet.

In Figure 7, the real capacity, similar to what is plotted in Figure 5 is now compared with the expected capacity. The expected capacity is the amount of people working per hour increment multiplied by 3,125 (see Methods). Figure 7 shows that the real capacity is far below the expected capacity. The difference can possibly be explained by the standard being too high or

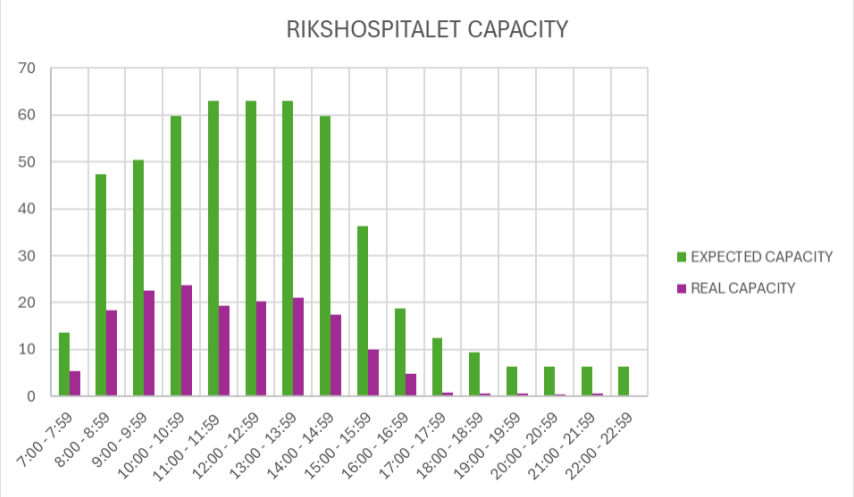
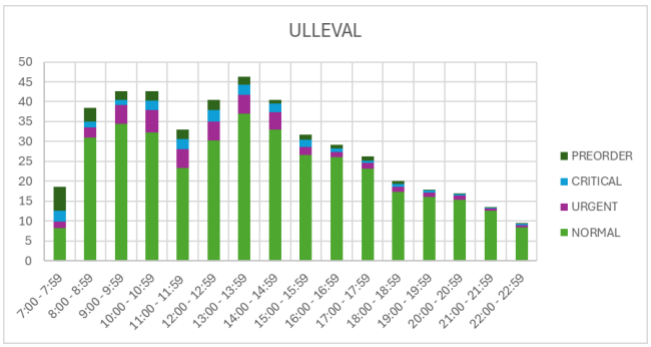


Figure 7, shows the expected capacity plotted against the real capacity for Rikshospitalet per hour increment on average.

the productivity of the porters being too low.

Now the same is performed for Ullevål seen in Figure 8 below. As can be noted Ullevål performs more tasks on average per hour than Rikshospitalet. But Ullevål has more staff. At Ullevål there is a bigger percentage of urgent tasks compared to Rikshospitalet as well as a higher percentage of critical tasks. Similarly, as last time, in Figure 9 two distinct peak times are visible for normal tasks, namely from 8:00 – 10:00 and from 13:00 – 13:59. Most common tasks are normal then urgent then critical and lastly preordered.



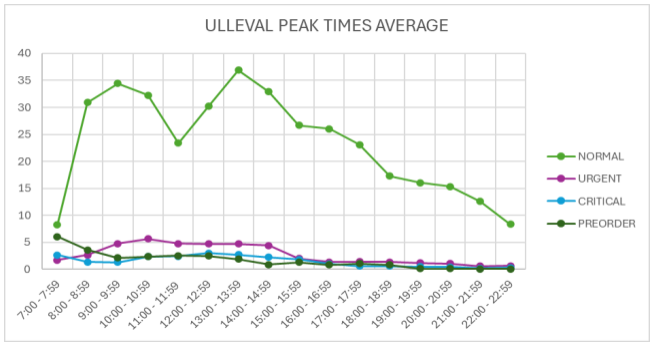


Figure 8, average tasks per hour per category for Ullev Figure 9, average peak times per day at Ullevål

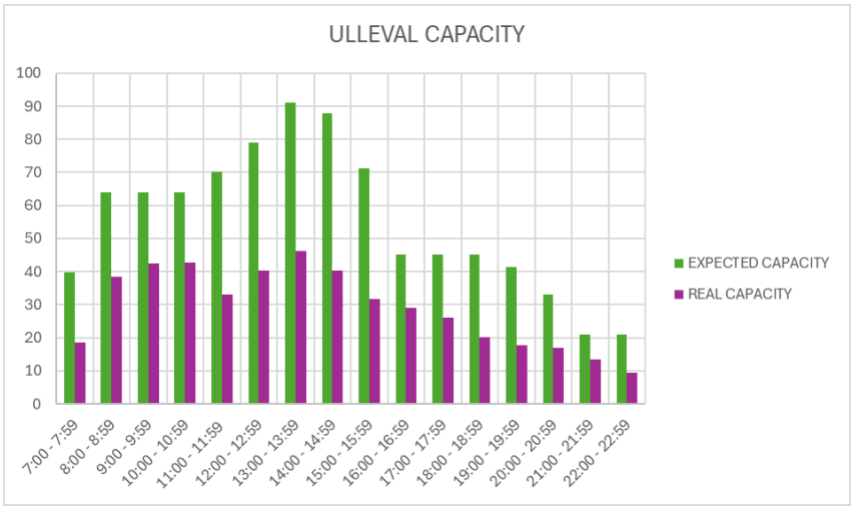


Figure 8, shows the expected capacity plotted against the real capacity for Ulleval per hour increment on average.

In Figure 10, the expected capacity is plotted against the real capacity. In this figure, the difference between them is very clear. With the expected capacity being way higher than the real capacity, the question remains what the possible cause for this could be, see discussion.

DELAYED TASKS

Thanks to the list of all tasks that were carried out in the months of January, February and March 2024 it is possible to calculate the total number of tasks and the percentage of delayed tasks per category over that period of time. The tasks were filtered using the exclusion criteria explained previously. For each category, the delay of tasks is defined based on the urgency of the call: at Rikshospitalet normal tasks are delayed if they take longer than 30 minutes to be carried out,

urgent tasks are delayed if longer than 20 minutes, for critical tasks the threshold is 20 minutes, for pre-ordered tasks it is 5 minutes.

Figure 99, normal delayed tasks for Rikshospitale *Figure 10, urgent delayed tasks for Rikshospitalet.*

The delayed tasks part of the normal category amount to 16,23% of the total amount as seen in Figure 9. This is 2.154 tasks out of 13.268. The value decreases by about 3 percentage points for the tasks defined as urgent in Figure 10, only as a result of 87 tasks over a total of 673.

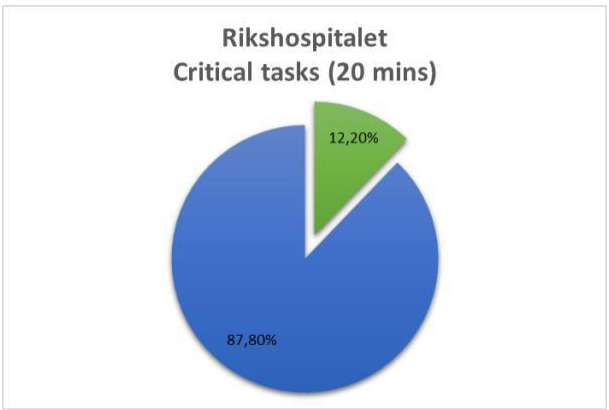


Figure 11, critical delayed tasks for Rikshospitalet

Figure 12, pre-ordered delayed tasks for Rikshospitalet.

Critical tasks are the ones required in the most acute situations. Delaying these tasks can have severe consequences on patients' health. Out of the 41 tasks part of this category, only 5 took

longer than 20 minutes to be completed, amounting to 12,20% of the cases as reported in figure 11. A much different picture is shown for pre-ordered tasks, those that are inserted in the system in advance and are part of the daily routine of porters. Because of their extremely low urgency, these recorded the highest percentage of delay: out of 2.510 tasks, 1.075 were recorded to take longer than the 5 minutes established as shown in Figure 12. Almost 43% of the total pre-ordered tasks were delayed.

At Ullevål, a similar pattern can be identified. The same exclusion criteria are applied but different thresholds are set; pre-ordered tasks are delayed when they take longer than 5 minutes, normal tasks have a threshold of 40 minutes, urgent tasks of 25 minutes while critical tasks of 20 minutes. The first main difference between the two is the significantly higher number of tasks that were not faulty and were possible to use for this analysis.

The total number of normal tasks was in fact 46.929; out of those, 4.460 were recorded as delayed, amounting to 9,50% as shown in Figure 13. This is almost 5 percentage points lower than at Rikshospitalet, however, this is based on a larger database which allows for better estimation. Urgent tasks delayed are slightly higher in percentage compared to Rikshospitalet: out of 4.496 total tasks, 658 were delayed more than 25 minutes amounting to 14,64% against the 12,93% of Rikshospitalet.

Figure 13, normal delayed tasks for Ullevål

Figure 14, urgent delayed tasks for Ullevål

Critical delayed tasks are significantly higher than at Rikshospitalet based on a much larger number of observations: 707 were delayed of 2.396 tasks. This ratio is much higher as seen in

Figure 15, almost 30% of the critical tasks took longer than 20 minutes considering that critical tasks are the most compelling to complete.

With regard to pre-ordered tasks, the frequency is lower, and the delayed percentage is 10 percentage points lower than at Rikshospitalet, however, it is still the category of highest delayed tasks per category taking over 5 minutes to be completed, 32,15% of the tasks as shown in figure 16.

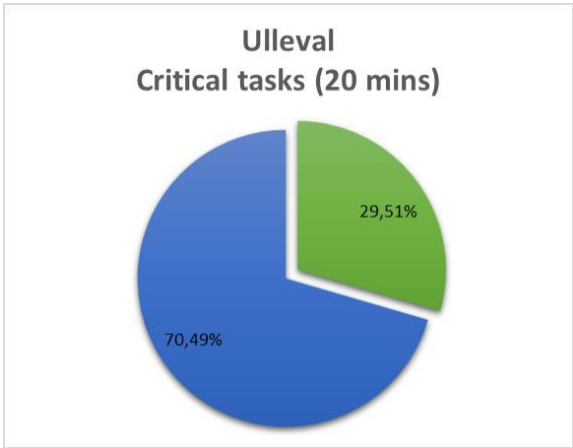


Figure 15, critical delayed tasks for Ullevål

Figure 16, pre-ordered delayed tasks Ullevål.

DISCUSSION

The primary aim of this study was to investigate whether porters at Rikshospitalet could support nurses by taking on the responsibility of transporting patients from the postoperative (PO) ward to the regular ward. This research was motivated by the need to improve hospital efficiency and alleviate the workload on nurses by reallocating certain logistical tasks to porters. The study sought to determine the feasibility and potential benefits of this task redistribution through interviews, shadowing, and data analysis.

The research involved a comprehensive analysis of porter tasks at Rikshospitalet and Ullevål hospitals, focusing on their potential to assist in patient transport from the PO ward. Data from the PorterCom system, along with shadowing and interviews with various stakeholders, provided insights into the current state of porter operations and the challenges faced. The project carried out at the PO ward in March provided valuable quantitative insights that helped address the research question. Patients are only transferred from the PO ward when deemed stable, based on specific health criteria, which ensures patient safety. The role of a porter does not require specific educational training, making it accessible to a broader workforce.

However, several weaknesses were identified. The PorterCom system is outdated and inefficient, allowing only three tasks at a time and frequently malfunctioning. This system does not support direct communication between nurses and porters, leading to miscommunication and delays. Furthermore, Rikshospitalet and Ullevål operate differently, posing a challenge for the upcoming merger. Some tasks require additional training that porters currently lack, leading to reliance on nurses and potential conflicts when nurses are interrupted from their duties. Despite these challenges, there are significant opportunities. UniteTask, the new system in development, promises to replace PorterCom with more functionality and faster operation. It would enable direct communication between nurses and porters, reducing misunderstandings. The research indicated that porters could support nurses in tasks such as patient transportation from the PO ward to the regular ward, oxygen handling, and patient mobilization. Closing the information gap about porters' capabilities would help nurses feel more comfortable delegating these tasks.

Additional training for porters, potentially supported by external trainers, could further enhance their ability to assist nurses.

There are notable threats to consider, particularly regarding patient safety. When nurses leave their ward to pick up patients from the PO ward, they transfer the care of their current patients to other nurses, which places additional strain on their colleagues and potentially increases the risk of adverse events. In March, nurses spent 184 hours transporting patients, whereas porters were utilized for only 8 hours. This strain on nurses compromises patient care and significantly increases the risk of adverse events. If this pattern continues, it could result in a loss of over 2000 hours of hands-on patient care annually, equating to 92 days a year, thereby critically affecting patient safety.

The pilot project at Rikshospitalet's PO ward revealed that porters currently assist only with transporting C-section patients. The analysis showed that porters had a slightly faster average waiting time (14 minutes and 17 seconds) compared to nurses (14 minutes and 30 seconds). Financial analysis suggested that using porters instead of nurses for patient transport could save the hospital approximately NOK 818,740.63 annually, considering the differences in salaries and waiting times.

The study also highlighted substantial discrepancies between expected and actual capacities, suggesting that porters are overburdened and understaffed. Normal tasks had the lowest delay rates at both hospitals, whereas pre-ordered tasks, constrained by a stringent 5-minute completion criterion, experienced the highest delays. This suggests a need to reassess the completion criteria for pre-ordered tasks.

In conclusion, the findings indicate that reallocating patient transport duties from nurses to porters at Rikshospitalet is feasible and could enhance operational efficiency and reduce costs. However, achieving these benefits requires significant improvements in communication systems, additional porter training, and better resource management. Addressing the identified weaknesses and capitalizing on the opportunities could lead to a more efficient and sustainable healthcare environment, particularly in view of the upcoming merger and increasing healthcare demands due to demographic changes.

LIMITATIONS

The findings we have presented until now do come with several limitations. Firstly, the data received from PortørCom was faulty, therefore taking into account the before-mentioned inclusion criteria, this resulted in a significant exclusion of data for Rikshospitalet. In addition, the budget plan contained a few mistakes resulting in wrong calculations and results on the cost analysis for the PO ward. Thirdly, as the PO project did not include weekends and only ran for a period of a month, the sample size did not pass the power test. Therefore, all results from this project cannot be perceived as significant, as the real values will be higher than what was discussed in this research. Fourthly, the usage of PortørCom in both hospitals was not adequate. The start and finish buttons on the pagers were not used correctly. Therefore, it influences the time spent on the tasks as this is the difference between start and finish. While shadowing was performed, it was however not done by the same person or performed on the same day resulting in a shadowing bias as no cross-section was performed. Due to technical errors, the shift schedule of May was used to calculate the expected capacity instead of the one from January to March. This could result in a possible drift when comparing numbers. Lastly, overall, there was a big-time constraint due to slow data collection and no extensive prior research. The load of this research was too much for the time constraint of 3 months, therefore influencing the results.

The research aim was to identify whether the role of porters could be broadened by allowing them to support nurses in the transportation of patients from the PO department ward back to their bedposts. According to all the interviews and shadowing experiences that we were part of, the general feedback is positive. Nurses affirm that they would be willing to give up that task and, additionally, assist in teaching them additional tasks that they could perform. Although porters described themselves as being overworked, the additional task of transporting patients from PO to bedpost could be implemented if the system used currently PortørCom was improved or directly substituted with UniteTask. That seems to be the main issue: because of how slow and unreliable it is, porters have to wait between one task and another, lowering their efficiency. The task of transporting patients from PO to bedpost is already assigned to porters at the Ullevål hospital, an indication that porters could have the same task at Rikshospitalet as well. There is no clarity regarding the reasons why it is not already assigned: on one side the number of porters is significantly lower at Rikshospitalet than at Ullevål, making it harder to cover the same amount of jobs; on the other side the conditions of the patient that can leave the PO department result to be the same at both hospitals since the same "stable" checklist is used. Therefore, once the patient is dismissed from the PO ward, there should not be a need for medical assistance on the way back to their ward. To allow porters to take on that extra task, additional resources should be implemented at Rikshospitalet: according to the budget from 2023, the money dedicated to extra staffing amounted to 1.050.000, 00 NOK. The possibility of hiring an additional porter could have been plausible considering its annual cost to the hospital of 651.000, 00 NOK. This assessment is performed considering the limitations mentioned above: further research should be conducted in order to define whether this is a viable option.

In terms of capacity, both hospitals result to have issues. The standard used to measure capacity is a number of 25 tasks per shift per porter. This means that porters should perform on average 3,125 tasks per hour, meaning an average time of completion per task of 19,2 minutes. Taking into consideration that normal tasks, which are the most numerous of both facilities, have an approximate completion time of 30 minutes at Rikshospitalet and of 40 minutes at Ullevål, it is clear how there are some incongruences. Given this, the real capacity of porters turns out to be

much lower than the expected capacity: expected capacity is the number of tasks that, according to the standards, porters should be able to perform hourly. The real capacity is what tasks porters are actually completing. From the tours and the interviews carried out, the porters reported working to the maximum of their capabilities given the instruments at their disposal. Accordingly, excluded this option, the explanation left is the excessively high standards to which porters are held to. Very similar conditions are the ones reported at Ullevål, with expected capacity surpassing real capacity. In this case, it is worth remembering that the number of porters is significantly higher, and they perform a broader set of tasks. Once again, the porters at Ullevål reported working at their maximum capacity. Another possible element that stands out from this analysis is that, given the limitations of the data, porters results to be understaffed: this means that they could benefit from the hiring of additional personnel to be able to work at the levels of expected capacity and, as mentioned previously, the budget could allow for it.

According to our findings on tasks categories and the respective delays, normal tasks were the most frequent. For both hospitals, the delay incidence of normal tasks is low, meaning that those tasks are the ones completed within the appropriate given times. Considering that transportation of patients from the PO to the bedpost is part of the normal tasks, there is a very low percentage of cases in which that task might be delayed, facilitating the smoothness of operations for porters and at the PO department. It is to note how in both hospitals the task category that was mainly delayed was the pre-ordered tasks one. The most plausible assumption is that the limit of 5 minutes to complete them is not necessarily the most appropriate: these are tasks that are pre-inserted into PortørCom and have no urgency. Porters prioritize the other categories of tasks and when the pre-ordered ones are assigned, they finish performing the task they were previously assigned and/or skip the pre-ordered ones in favour of others.

The pilot study performed at the PO department at Rikshospitalet highlighted significant financial and operational implications associated with PO waiting times for patient transfers. Using porters proves to be more cost-effective with an average of NOK 84,23 compared to nurses. The educational background is also to be mentioned: porters do not need a specific university degree to be hired by the hospital. They need a high school degree and demonstrate seriousness and capability in performing the tasks assigned to them during the 14-day training period when they

are first hired. On the other hand, nurses need a three-year bachelor's degree to be qualified to work. An additional key insight is the impact on the different wards' workflow when nurses are required to retrieve patients, leaving their initial duties and potentially increasing the workload on their colleagues. Such delays in patient pickup from PO not only result in inefficient use of PO beds but also could escalate to the extent where surgical schedules are disrupted, leading to patient reschedules. Addressing these inefficiencies is crucial, as the projected annual cost of these delays stands at approximately 818.740,63 NOK a year, only looking at the waiting time without the consequences of any rescheduling.

RECOMMENDATIONS

We therefore want to put forward some recommendations based on our findings. The Norwegian Nurses Organization (NSF) and the Norwegian Porters Association (Fogforbundet) were consulted about our proposals and the feedback was positive and proactive.

To improve the problems relative to capacity, we would recommend hiring an extra porter to allow for an easier transition to performing the extra task of taking patients from the PO ward to their bedposts. Although finances are always a critical aspect of these changes, according to the budget from last year, it would be possible to consider the option of an additional porter at Rikshospitalet.

In addition to the transportation task, which is the focus of our research, we would recommend porters to support nurses with two other tasks: oxygen handling and mobilization of patients. By law, they are allowed to perform those tasks as long as the hospital provides them with the appropriate training to perform them. This is why that training could be implemented in the 14-day training program every porter goes through when they are hired. Nurses could support with the training of some tasks, but in order to not overwork them even more, external training parties should also be involved. Both NSF and Fagforbundet were consulted about the matter and confirmed the possibility of implementing these proposals.

As highlighted throughout the report, the system PortørCom needs to be substituted promptly: it indirectly creates serious threats to patients' health, it generates misunderstandings between

porters and other workers within the hospital as there is no way to directly communicate between individuals, it is the source of delays because of practical malfunctions, pagers incur in shutdowns slowing down the workflow. UniteTask will be able to solve at least the technical difficulties: there will be a way of communicating through direct texts, the list of tasks visible will be longer than three, it will most likely be a more reactive system and, even if shutdowns of the devices are not avoidable, the new phones that will be used as support for the system will be easier manageable and newer.

To improve communication even more, we recommend having periodical meetings between department heads and, if possible, with nurses and porters as well to be able to directly discuss and address the issues and concerns that might arise. We would also suggest quarterly meetings between departments' heads and also between porters and nurses of the different departments. Improving communication has proved to work at Haukeland, where it increased trust and efficiency in the workflow. Part of the focus on clarity of communication should be pointed towards the merger. The future turned out to be quite unknown to both porters and nurses. They would benefit from a clearer image of what their reality will look like in the next few years.

Lastly, part of the finances should be dedicated to equipment and their management. Most of the time it is lost and hard to locate. For wheelchairs, a sign-out sheet could be implemented: the person collecting the wheelchair would have to sign the sign-out sheet with name, time and destination in order to allow an easier identification of the location where the wheelchair has been brought if not already returned to the allocated "wheelchair parking". This system could be used for other pieces of equipment depending on their nature.

FOR FUTURE RESEARCH

Because of the time limitations that were already talked about previously, the research was not as extensive and as detailed as it could have been. Future research on this topic could be carried out in order to more closely identify further issues in addition to the ones already presented. The simulation proposed by Botnen & Hasle in their research could be applied in order to better understand the capacity problems of the hospitals and the reasons that could lead to delayed tasks.

As mentioned above, the actual budget available for porters should be evaluated thoroughly to have confirmation of the possibility of hiring an additional porter to increase efficiency and improve logistics.

Gathering feedback from porters and nurses is extremely crucial: distributing a questionnaire to all workers would help collect more general and unbiased information. It would allow for a greater number of inputs to be taken into account, speeding up the collection process.

It would be interesting to allow porters to perform the extra task of transporting patients from PO back to the bedpost for a limited period of time and to repeat the pilot project that was carried out at Rikshospitalet during the month of March in order to record the waiting times with only porters picking up patients. Implementing this would allow us to understand whether porters are faster, and, in that case, money could be saved.

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STANDARDIZED QUESTIONS INTERVIEW

Standardized list questions for the interview

- Can you describe your tasks within your job?
    - Can you give an indication of the time spent on your most frequent tasks given?
    - Are you aware of a system tracking time spent on tasks? Are there maximums for time spent on tasks?
- Talk us through the day, are there certain peak times/waves?
- Are there tasks where you must wait for someone or something? If so, what?
    - Waiting on porter/nurse assistant/nurse specifically?
- Are you performing tasks which are not in the scope of your job description?
- When you feel overwhelmed by tasks given, which tasks would you be willing or able to delegate?
    - Are there any requirements for these tasks? "Based on their job description"
- How are the tasks delegated?
    - By which way of communication do you receive a task?
    - Are you assigned to a certain ward or tasks? If so, based on what are you assigned to this specific ward or task?
- Are there any co-factors/factors which cause problems while performing a task?
- Do you interact with nurses/porters? If so, can you characterize this interaction?
- Would be open to the idea of a standardized porter per ward?

Retningslinje

Delegert utskrivningsansvar for sykepleiere ved PO/Intensivavdelingen.

OSLO UNIVERSITETSSYKEHUS | Akuttklinikken (AKU)/Postoperativ- og intensivsykepleie Avd. for

Dokument-ID: 129888	**Dokumentansvarlig:**	**Godkjent av**	**Godkjent fra:**
Versjon: 1	Anita Dahl	Kristin Sem Thagaard	08.02.2019
Status: Godkjent	**Utarbeidet av:**		
	Anita Dahl, Inger M Tradin...		

1. Endringer siden forrige versjon

Ny retningslinje. Den erstatter lokale retningslinjer for utskrivning av pasienter over 18 år.

Revidert versjon: Retningslinjen gjelder for alle seksjonene i PO/Intensivavdelingen som behandler postoperative pasienter.

2. Hensikt og omfang

Retningslinjen omfatter pasienter over 18 år innlagt i Postoperative seksjoner eller i andre seksjoner ved PO/Intensivavdelingen som behandler postoperative pasienter. Resteffekter etter anestesi og konsekvenser av det kirurgiske inngrepet innebærer risiko for svikt i vitale funksjoner med behov for kontinuerlig overvåking (Glick m.fl., 2018). Hensikten med retningslinjen er å skape standardiserte og sikre kriterier for utskrivelse fra seksjoner ved PO/intensivavdelingen til sengepost/intermediærpost. Dette vurderes i form av generelle utskrivningskriterier med utgangspunkt i et skåringssystem.

Kriterier og skåringsverktøy skal ikke brukes alene, men alltid understøttes av sykepleierens/spesialsykepleierens faglige kompetanse og kunnskap.

3. Ansvar

Seksjonsleder er ansvarlig for å gjøre retningslinjen kjent til sykepleiere/spesialsykepleiere i sin seksjon.

Anestesilegen er medisinsk ansvarlig for pasienten.

Sykepleiere/spesialsykepleiere ved seksjonene har ansvar for å ha kunnskap om, samt følge retningslinjen.

4. Fremgangsmåte

Følgende kriterier må være oppfylt:

- Pasienten > 18 år
- ASA < 3, eller ASA mindre enn eller lik 3 hvis pasienten har oppnådd sin normale tilstand
- Ukomplisert kirurgisk inngrep eller diagnostisk prosedyre
- Ukomplisert anestesi og forløp i oppvåkningsenheten
- Blodtap < 500ml

Alle pasienter vurderes og skåres i forbindelse med overflytting til sengepost/intermediærpost. Ytterligere skåringer (etter ankomst, midtveis under oppholdet) kan være relevant for å følge utviklingen i pasientens postoperative forløp. Det gjøres minimum 1 skåring. Utskrivningskriteriene dokumenteres i EPJ/papirkurve.

- Sykepleier kan skrive ut pasienten dersom alle delskår er mindre enn eller lik 1 og summert skår er mindre enn eller lik 4 (dvs maksimum 4 enkeltskår med verdi 1).
- Når en pasient har delskår lik eller større enn 2, eller en total summert skår over 4, skal det konfereres med anestesilege dersom sykepleier vurderer pasienten som utskrivningsklar.

Pasienter som ikke oppfyller utskrivningskriteriene vurderes og skal skrives ut av anestesilege før overflytting. Pasienter med avtalt nattplass på seksjoner ved PO/Intensivavdelingen ("overliggere"), skal skrives ut av anestesilege hvis ikke annet er avtalt.

Skåringssystemet inneholder 8 fysiologiske parametere til vurdering av pasientens tilstand: sedasjon, respirasjon, saturasjon, blodtrykk, puls, motorikk, smerter og kvalme.

Område	Poeng	Kriterium	Beskrivelse

1.Sedasjon	0 1 2 3	Våken Sovende, vekkes ved verbalt stimuli Sovende, vekkes ved fysisk stimuli Sovende, kan ikke vekkes	Bevissthetsnivå vurderes ved pasientens reaksjon på rolig tiltale, lett fysisk berøring, samt reaksjon for øvrig. Pasientens oppvåkning bør ikke fremprovoseres. Smertestimuli bør kun anvendes, hvis pasienten er i overhengende fare for å utvikle cerebrale skader.
2.Respirasjon; pr min	0 1 2 3	RF 10-30, normal respirasjon RF 10-30, snorkende respirasjon RF < 10 eller > 30 Apnoeperioder eller obstruktivt mønster	Respirasjonens kvalitet observeres regelmessig med hensyn til frekvens, dybde og regelmessighet, samt inspiratorisk og/eller ekspiratorisk besvær, som hørbar rasling fra luftveier eller cyanose. Avvik i respirasjonens kvalitet dokumenteres i EPJ.
3.Saturasjon, % (ingen oksygentilførsel i 10 min.)	0 1 2 3	SAT større enn eller lik 94 SAT 90-93 SAT 85-89 SAT < 85	Saturasjon monitoreres kontinuerlig. Ved utskrivelse til sengepost uten oksygen, skal pasienten ha blitt observert i minimum 10 minutter på forhånd. Hvis pasienten har en SAT < 89 på romluft (poeng 2), skal anestesilege godkjenne at pasienten klareres og flyttes med oksygentilførsel.
4.Blodtrykk, systolisk; mmHg (ingen inotropi)	0 1 2 3	BT 100-220 BT 90-99 BT 80-89 eller BT > 220 BT < 80	Sirkulasjon vurderes ut fra hudens farge, varme og tørrhet. Kartlegging med hensyn til inngrepets art, blodtap / erstatning, samt pre- og peroperativ tilstand.
5.Puls; pr min	0 1 2 3	Puls 50-100 Puls 101-120 Puls 40-49 eller 121-130 Puls < 40 eller > 130	Pulsoksymetri, inkludert perifer puls og rytme. Kartlegging med hensyn til habituell kardiell tilstand og evt. medisinsk behandling. Ved endring i hjerterytme konfereres med anestesilege.
6.Motorikk (gjelder spinal og epidural anestesier)	0 1 2 3	Beveger underekstremiteter fritt Kan kun bevege føtter og bøye knær Kan kun bevege føtter Beveger ikke underekstremitetene	Observasjon av epidural- og spinalanestesiens virkningsgrad. Ved kontinuering av epidural analgesi, dokumenteres observasjoner i Metavision eller på papirskjema der det er aktuelt. Ved regional blokade til ekstremiteter kan pasienten utskrives uten å ha oppnådd førlighet og bevegelse.
7.Smerter (i hvile)	0 1 2 3	Ingen (NRS=0) Lette (NRS 1-3) Moderate (NRS 4-6) Uttalte (NRS 7-10)	Rapport om smerte fra anestesi når pasienten kommer fra operasjon og plan for postoperativ smertebehandling. For vurdering av smerter, se Standard for pasient til overvåkning ved postoperativ avdeling PO/INT - voksne og barn og observasjoner ved bruk av epidural analgesi. Pasient bør observeres i 15 minutter etter siste dose av intravenøs opioider for å vurdere virkning/bivirkning.
8.Kvalme	0 1 2 3	Ingen Lett Moderat Uttalt	Rapport om kvalme fra anestesi når pasienten kommer fra operasjon og plan for postoperativ kvalmebehandling.
Sum			

Tilleggsobservasjoner:

Diurese- og blærefunksjon: Vurderes hos alle pasienter. Pasient uten permanent urinkateter omfattes av prosedyre: Urinretensjon med overfylt blære - observasjoner og tiltak. Hos pasient med permanent urinkateter skal det observeres mengde og utseende. Urinproduksjon dokumenteres fortløpende i EPJ/papirjournal.

Temperatur: Tilstrebe normotermi 36,5 til 37,5 grader. Ved avvik følg prosedyre: Hypotermi perioperativt - forebygging og behandling, voksne

Utover nevnte observasjoner, følg: Standard for pasient til overvåkning ved postoperativ avdeling PO/INT - voksne og barn

Enkelte av seksjonene har lokale avtaler med hensyn til postoperativ liggetid. Disse skal følges inntil videre.

5. Referanser

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Vedlegg

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