Improving The Efficiency of Task Completion and Time Management for Surgical Junior Doctors During Their Surgical Foundations Rotations/Placements

Abstract

Task completion and time management for surgical junior doctors during their surgical foundation trainings and placements were investigated amidst techniques for improvement and efficient service delivery in the big health facility setting in East and North Herts NHS Trusts by us, a group of medical scientists.The factors reducing and impeding efficient service delivery were presented which included lack of organisational equipment and availability leading to delayed job completion and patient output.

Introduction

Patient safety and the quality of patient-centred care provided are of utmost importance. Quality improvement projects in surgery are vital as we can highlight and rectify issues that may arise through them. We determined that a critical problem lies in the inefficiency of job performance among surgical junior doctors due to a lack of equipment organisation and availability. This inefficiency results in a delay in job completion and potentially poor patient outcomes. Surgical junior doctors are becoming increasingly frustrated at the lack of availability and organisation of equipment required to perform urgent and non-urgent patient care during their shifts. Through our detailed research, we aimed to improve the efficiency of surgical junior doctors' task completion by reducing the time required for completion of tasks through the

production of surgical equipment packs to improve equipment availability and accessibility to facilitate efficient urgent and non-urgent patient care.

Methodology

We collected data via analysis and evaluation of responses from initial and post-implementation surveys sent to surgical junior doctors working across a range of specialities and different NHS trusts around the country.

Results

The initial survey demonstrated that most of the time taken for task completion was spent on sourcing/gathering equipment. The post-introduction of surgical equipment packs survey indicated that over 80% of the responders found them helpful in carrying out practical jobs. More than 60% of responders reported that 0-10 minutes are needed to complete practical employment with the help of surgical equipment packs. Comparatively, only 30% could complete practical tasks within 20 minutes before implementation.

Conclusion

Results showed that surgical have improved equipment accessibility and, overall, improved task completion efficiency. 80% of responders would continue using surgical equipment packs to improve efficiency in ward-based practical jobs.

Categories: Quality Improvement, Surgery, Surgical Equipment.

Keywords: Patient care, Surgical junior doctors, Survey, Equipment packs, Performance.

Introduction

Background to the Study

Patient-centred care and patient satisfaction and outcomes have a positive association. Surgical doctors and healthcare providers should ensure that their healthcare activities focus on patient care over other activities, more so multi-morbidity and complex care patients, since it enhances patient-doctor relationships and outcomes [1]. Current surgical and post-surgical care faces numerous obstacles that limit adequate care before, during, and after surgical procedures. Some essential dimensions of patient-centred care include access to care, coordination, information and education, physical comfort, emotional support, continuity, and patient preferences [2]. Surgical doctors face barriers and issues akin to traditional practices and structures, the development of patient-centred interventions, and professionals' attitudes and stereotypes [3]. While these barriers adopt an ever-changing paradigm, they impact patients and medical professionals more.

Quality improvement in healthcare is sectorial and holistic since every health sector plays a compulsory role in improving and maintaining its outcomes while supporting other interrelated sectors. For instance, the surgical sector should ensure maximum care, precision, and operating room efficiency when handling patients and undertaking surgical procedures [4]. However, patient care teams in the postoperative sector must maintain quality care and maintenance procedures to prevent infection and ease recovery. Healthcare facilities management must provide all essential materials for successful operation and service delivery. Notably, the improvement of time management and efficiency in task completion for surgical junior doctors during their surgical rotations and placements is an arena for quality improvement. Engaging

appropriate strategies will improve surgical junior doctors' effectiveness and overall work quality [5]. Also, these interventions can improve patients' outcomes in the surgical sector.

Research Context

Our research foundation aims to come from evidence collected from medical experiences. We acknowledge that a critical issue lies in the inefficiency of job performance among junior doctors due to a lack of equipment organisation and availability. This inefficiency results in a delay in job completion and potentially poor patient outcomes. Lack of adequate instrumentation contributes to actions that risk quality, such as surgery delays, postponement, disruption, and cancellation of urgent and non-urgent surgical procedures [6]. Surgical instrument packaging quality and sufficiency correlate with the safety and quality of surgery and overall health outcomes [7]. For instance, inadequate equipment during surgical rotations leads to rationalisation, which decreases sterilisation time, risks the overall surgical process and affects patients' outcomes negatively [8]. Our shared purpose drew from the realisation that junior doctors were becoming increasingly frustrated at the lack of availability and organisation of equipment required to perform urgent and non-urgent patient care during the shifts. Understanding tips and strategies for time management is critical since it allows medical practitioners to cope with emerging demands and effectively utilise skills and resources [9]. We believe that through an appropriate intervention, we can eliminate inefficiency, reduce the time taken to perform tasks, and consequently reduce delays in patient care.

Materials and Methods

Research Aim

We developed our aim accordingly with SMART principles of goal setting. First, our aim was specific. The time taken for surgical jobs to be carried out - surgical jobs in this regard refer

to many tasks that are required daily, such as routine bloods via venepuncture, venous blood gases, arterial blood gases, blood cultures and NG tube insertions. Second, it was measurable. Our team aimed to measure the medical obstacle using objective and subjective surveys provided before and after our intervention. Third, our aim was measurable. The aim statement also requires the participation of the Surgical juniors in filling out our surveys and engaging with the intervention in place. The aim is attainable as there are clear steps from implementation to achieving the aim. Fourth, the aim was realistic. Acquiring the surgical equipment packs is a factor that can be acquired in our work environment. Additionally, juniors have access to the surgical office across all hours of the day, allowing them to access the equipment packs when necessary. Lastly, our aim is timely. Our team focuses on enabling healthcare practitioners to achieve efficiency within the surgical teams regarding jobs by the end of the current surgical rotation.

Methodology

Our research employed a qualitative online survey and a descriptive quantitative research design. The primary purpose of descriptive studies is to formally describe phenomena, events, individuals, or conditions within a research space [10]. Descriptive research designs such as surveys lack a hypothesis, causalities, and variant manipulation [11]. To understand the extent of our problem, we collected data by sending out initial surveys to our colleagues. Surveys allow random and non-random participants to answer designed questions, describe situations, and provide feedback regarding phenomena [12]. Quantitative studies use synchronous and asynchronous survey methods such as focus-group interviews for unwritten feedback or questionnaires for written feedback.

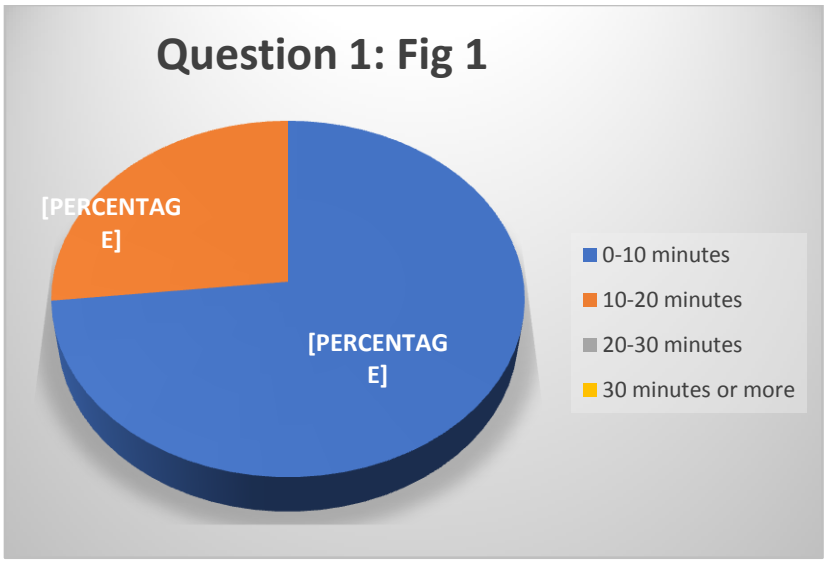
Our research team conducted surveys through online questionnaires in two phases. First, we conducted initial surveys to colleagues to understand the extent of our problem with task completion and time management. Notably, after sending out questionnaires to surgical junior doctors, only fifteen individuals completed the questionnaires. A probable reason or problem experienced in the survey method is misunderstandings, confusion, low response rate, and carelessness [13]. Six questions provided data for phase one. Data collected in phase one informed the implementation of the new strategy. Post-implementation surveys occurred after the new strategy took place. The survey was directed to surgical junior doctors working across various specialities and different NHS trusts nationwide. Six questions provided data for phase two in the post-implementation survey.

Results

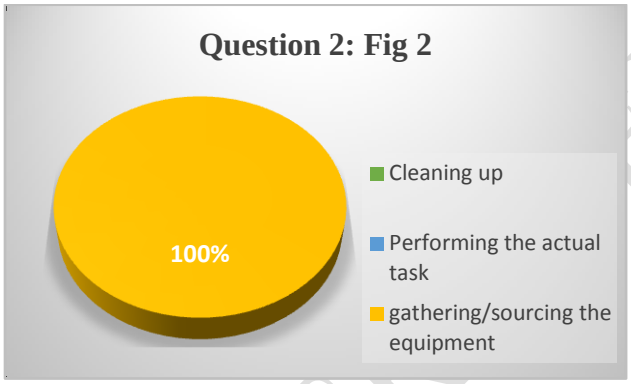
The initial survey demonstrated that most of the time taken for task completion was spent on sourcing/gathering equipment. The post-introduction of surgical equipment packs survey indicated that over 80% of the responders found them helpful in carrying out practical jobs. More than 60% of responders reported that 0-10 minutes are needed to complete practical jobs with the help of surgical equipment packs. Comparatively, only 30% could complete practical tasks within 20 minutes before implementation.

Fifteen doctors responded to the survey questions in the first phase, as shown in the charts below. These responses aided in need determination and strategic intervention.

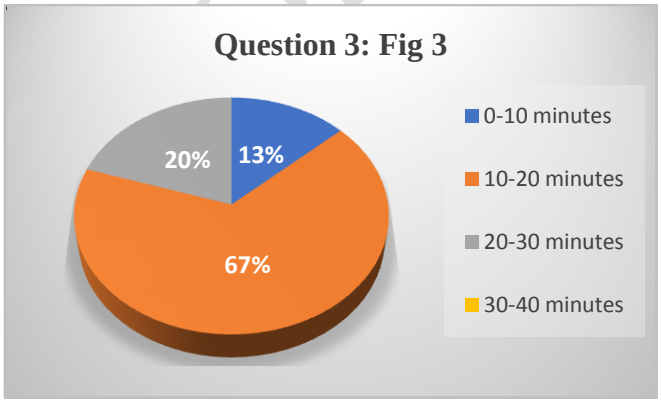
Question 1: How long does it take you, on average, to perform a practical task such as venipuncture (this includes the time it takes to source the equipment, perform the task, and dispose of and clean up the equipment)?



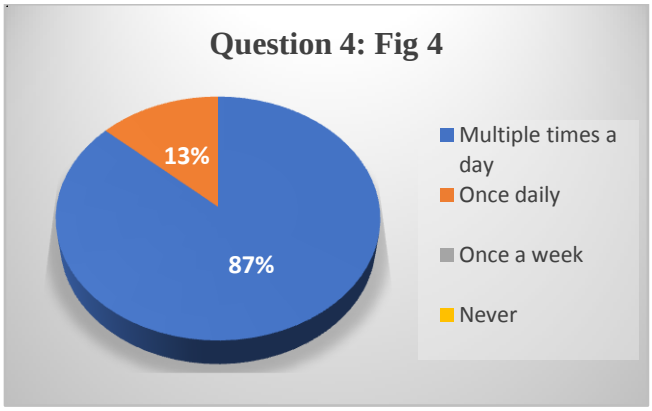
Question 2: In your opinion, what was the most significant limiting factor in performing a job on wards/on-call?



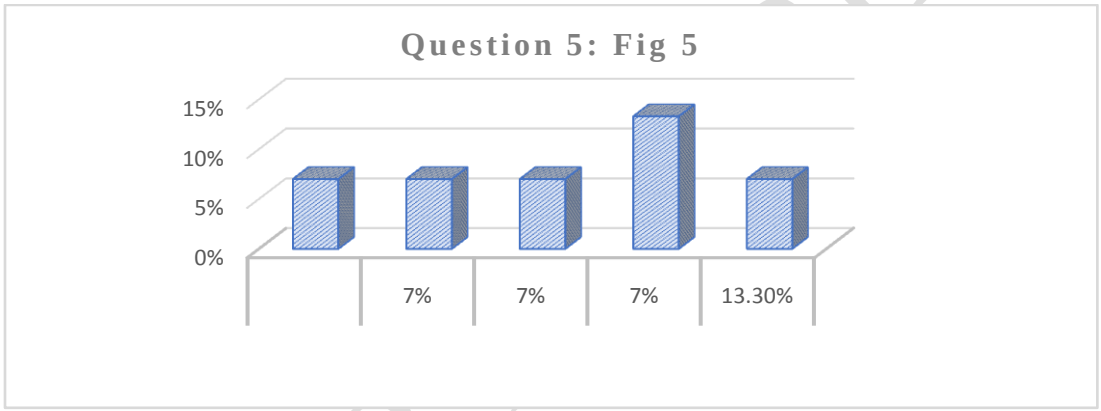
Question 3: How long, on average, does it take you to find equipment for a task?



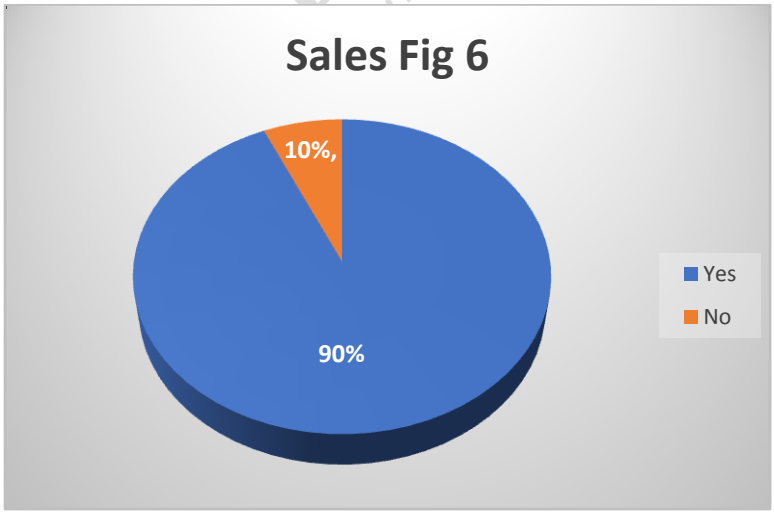
Question 4: How often do you find yourself unable to find equipment due to low stock/equipment?



Question 5: What pieces of equipment do you have the most difficulty finding

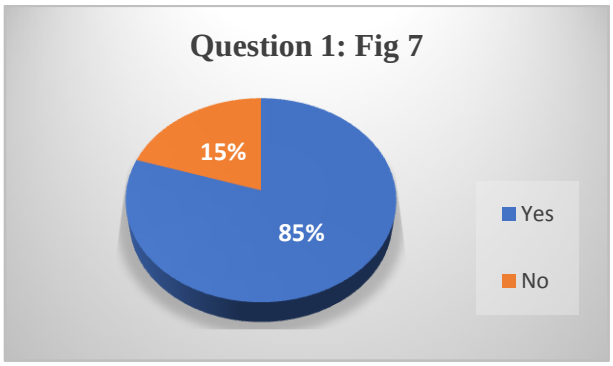


Question 8: Would you find a designated equipment bag in the doctor's office useful?

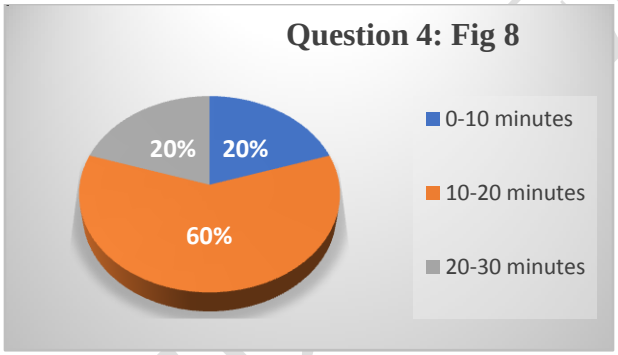


Five surgical junior doctors completed the post-implementation survey. The data was crucial in determining the intervention's effectiveness and attaining the research's aim.

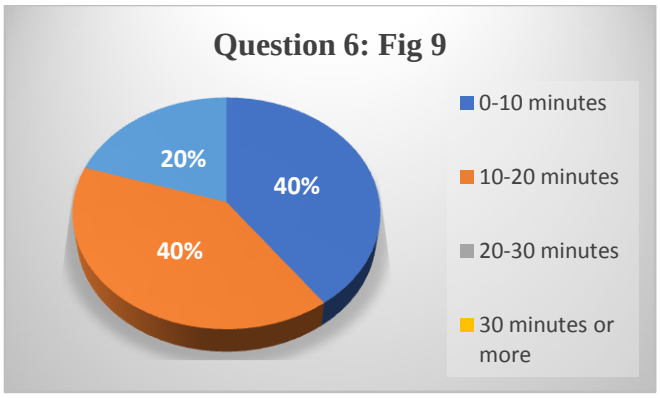
Question 1: Have you used the surgical equipment packs within the surgical offices recently?



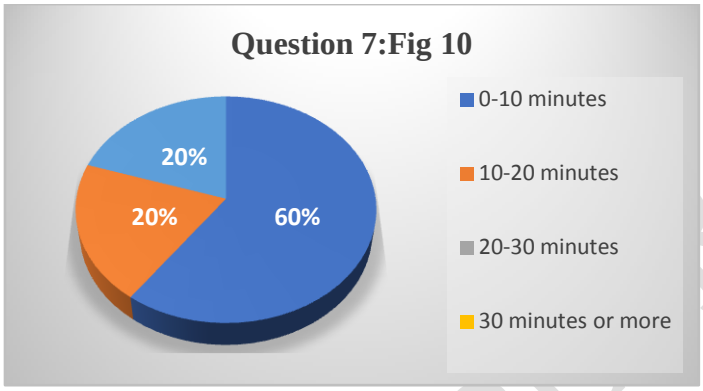
Question 4: How long does it take you, on average, to perform a practical task such as venipuncture (this includes the time it takes to source the equipment, perform the task, and dispose of and clean up the equipment)?



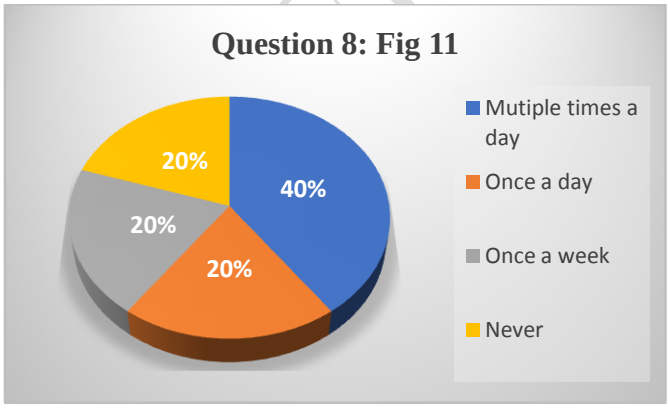
Question 6: If you found that the surgical equipment packs have helped with your time efficiency, how much time do you estimate you have saved now on the most time-consuming job you carry out?



Question 7: How long, on average, does it take you to find equipment for a task now using the surgical equipment packs?



Question 8: How often do you find yourself unable to find equipment due to low stock/equipment now?



Discussion

To understand the extent of our problem, we collected data by sending out initial surveys to our colleagues. The initial survey demonstrated that most of the time taken to complete practical surgical tasks by junior doctors within the ward-based setting was due to sourcing and gathering equipment. More than 60 % of the responders highlighted that it takes at least 10 to 20 minutes on average to find necessary equipment in surgical wards. Shortfalls in the access and provision of surgical equipment in surgical facilities affect the quality of surgical care and limit effective outcomes where doctors spend enormous time searching for equipment, compensating, or improvising to prevent adverse outcomes [14]. Over 85% of the responders found it challenging to complete practical tasks due to low stock levels, experienced daily on multiple occasions. From the survey, the majority found cannula packs and blood culture equipment difficult. We implemented a driver diagram to aid the development and achievement of our final aim. Our primary drivers were to reduce time wasted looking for equipment and to improve the quality of performed tasks. Medical doctors can utilise the saved time in patient care and prevention of patient harm [15,16].

During the implementation phase, the Plan-Do-Study-Act model (PDSA) allowed for a progressive assessment of the role played by strategic changes in equipment organisation and availability. The PDSA model allowed researchers to monitor the relationship between the provision of surgical equipment packs, the time spent accessing them, and surgical junior doctors' quality of performed tasks. The PDSA proves effective in fostering quality improvement and management of proposed changes during implementation [17]. The PDSA allowed for the strategy implementation. The implementation involved the production and use of a surgical equipment pack. While each ward has a preparation room and cupboards alongside the entrance

of the wards, many times, it has been challenging to source the exact equipment on either side of the ward or across an entire floor, resulting in a lot of wasted time sourcing the materials from a different floor or ward altogether. While there are some similar packs in circulation, such as the sepsis bundle/ 'go bags' where in the management of a septic patient, the use of the sepsis 'go bags' provides the surgical juniors ease of access in carrying out parts of the sepsis six in a time efficient manner. The vascular team's mobile equipment case can be utilised on the go for required equipment during their ward rounds and reviews, such as handheld Doppler and dressing changes; nothing is available to perform surgical junior doctors' daily tasks.

Initially, a survey was shared with the juniors on the surgical team, which allowed us to gain information on the specific areas in which equipment or lack of it, was causing delays in the day-to-day roles conducted by the junior team. The next step was to arrange provisions of specific equipment in one place accessible for all surgical juniors. With no dedicated surgical ward, it was not sensible to have this equipment in a ward-based setting. However, with the surgical office being a hub where the juniors can access space and equipment efficiently, this was the most sensible and accessible place to store the equipment. It has also been found that following ward rounds, the teams of the different firms usually regroup within the Surgical office to consolidate the list and jobs in order of clinical priority.

More than 60% of responders reported 0-10 minutes in completing practical jobs with the help of surgical equipment packs compared to only 30 % who were able to complete practical tasks within 10 to 20 minutes before the implementation. Additionally, 80% of responders would continue using surgical equipment packs to improve efficiency in ward-based practical jobs. Having a surgical equipment kit ready to access within the Surgical office allows the team to prepare what equipment is required, thus enabling patients to receive timely care with the

required interventions. Surgical equipment inaccessibility for junior surgical doctors limits them from conducting their rounds faster and shifts their focus on quality and safety [18]. Informing the team of the location of the equipment and the kind of equipment provided reduced the time needed to look for these pieces on the wards. Packs for phlebotomy, cannulation, catheterisation, blood gasses and NG tube insertion were organised in shelving in the office as well as in an on-the-go bag, allowing juniors to collect equipment from one location and taking it with them to conduct their jobs on various ward where surgical patients were being cared for. Once pieces of equipment had run low in stock, they were replenished. This intervention in a well-used area was also more helpful than on the wards as ward stocks are used by a wide variety of teams who may not be monitoring when stocks of specific items are depleted. Another reason the use of the office was apt for this specific project. A survey was re-conducted to see if any difference had been made to the team and the efficiency with which they had conducted jobs. The post-introduction of surgical equipment packs survey indicated that over 80% of the responders found them helpful in carrying out practical jobs. The outcome indicated increased efficiency in accessing equipment, better patient-centred care, and quality patient outcomes [19].

Conclusion

The post-survey found that the surgical packs are helpful in ease of access for all equipment needed for day-to-day jobs and improved efficiency compared to the initial survey. Therefore, healthcare facilities can use surgical equipment packs to gradually improve the efficiency of task completion and time management for surgical junior doctors during their surgical foundations' rotations and placements. The implementation benefits healthcare facilities through enhanced quality and surgical junior doctors during their work. Therefore, an email will be circulated to the new rotation surgical junior doctors, informing them of this implementation.

A rota will also be produced to allocate doctors responsible for replenishing the surgical packs. This QI project will be presented to raise further awareness of the permanent change that will occur as the outcome of this project.

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