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RESEARCH ARTICLE

IMPROVING ONGOING PATIENT CARE THROUGH GUIDING DOCUMENTATION OF WARD ROUNDS: A QUALITY IMPROVEMENT PROJECT IN A GENERAL SURGICAL UNIT WITHIN THE NATIONAL HEALTH SERVICE

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Abstract

Aim: Increasing pressures within the National Health Service has led to busier ward rounds. Documentation of information can be sacrificed to accommodate the pace of (ward) rounds. This quality improvement project aims to implement a user-friendly proforma for surgical ward rounds, with the view both improving patient safety via directing documentation and supporting the junior doctor.

Methods: Plan, Do, Study, Act (PDSA) method was used for this quality improvement project. Primary and secondary parameters were established, and baseline assessment undertaken 1 month prior to intervention with repeat data collection 1 month and 6 months after introduction of a pre-printed ward round proforma.

Results: A total of 106 entries were reviewed within the 6-month study period. Pre-printed ward round proforma led to an improvement in all assessed parameters. 80% of junior doctors (n=10) and 75% nursing staff (n=8) found the pre-printed proforma standardised documentation, improving communication of plans to the wider team. Antibiotic stewardship improved from 0% (N=50) to 98% (N=30) over the 6-month period. 100% of junior doctors (n = 10) and nursing staff (n = 8) found coloured paper facilitated and bettered identification of last consultant review.

Conclusion: The introduction of a pre-printed proforma allowed for standardisation of documented information for ongoing ward rounds, improved antibiotic stewardship and was received positively by junior doctors. Colour paper allowed for quicker identification of the last ward round entry which makes reviews of an unwell patient more efficient. Further work is needed to optimise and incorporate proforma within other surgical specialities.

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Introduction:-

The ward round process is part of every inpatient journey. Documentation of the ward round is variable and at the discretion of the documenting doctor which is usually the most junior member of the team. This means that, although guidelines and recommendations exist, on a busy surgical ward round vital information, as well as patient identifiers, may be inadvertently missed.

Fernando et al found that junior doctors on a surgical ward round failed to document the seniors' clinical findings

and management plan. On average, 6% of ward rounds have the clinical management and information provided to the patient fully documented [1].

The value of ward rounds is reduced if decisions, conversations, and/or information given to the patient is not recorded. Illegible handwriting is another factor that leads to the loss of information to other health care members that form part of the patients care team. It is imperative that accurate documentation takes place to ensure correct records about each patient encounter are made in the notes, not only for medicolegal purposes, but also to ensure good written communication between members of the health care team and thus ongoing care for the patient [2].

Literature, along with national guidelines have shown that a structured approach to the ward round process improves patient outcomes [3,4]. Studies carried out within medicine revealed that, through pre-printed ward round proformas or the use of checklists, improved documentation and communication has been noted [5,6,7]. Published literature regarding the use of checklists or ward round proforma primarily focus on medical patients or the “post take ward round” which is the first review on admission. However, there is limited data available to assess the use of a ward round proforma for the ongoing care of patients within the acute surgical daily ward round process.

Surgical ward rounds are historically renowned for being fast paced and brief. A study in New Zealand found that surgical teams spent an average of 2 min 57s per patient visit at the bedside [8]. This fact remains especially true for general surgical patients within a district hospital. The primary explanation for the fast pace of the ward rounds is that senior decision makers (Consultants, Senior Registrar) have other commitments such as Theatres, Clinics, or Endoscopy, as well as the ward round process, and so time efficiency is critical. Although in an ever-changing National Health Service (NHS) and practice, this may be a changing issue with individuals now being elected as ward round leads.

An aging population combined with the delays on elective procedures due to COVID-19 [9], means that patients are coming in potentially frailer when compared to the previous typical surgical patient and thus stay on the unit for longer. As a result, ongoing care should aim to maintain the high standards, seen on admission, throughout the patient journey.

The General Medical Council (GMC) and The Royal College of Surgeons (RCS) have both published information guiding the documentation process and highlighting the importance of accurate documentation. There have also been many acronyms developed to help guide the documentation process within medicine and surgery. More common ones include SOAP, which stands for subjective, objective, assessment and plan of treatment, and more recently SNO CAMP which incorporates SOAP but with the addition of nature of presenting complaint, counselling and medical decision [10]. These acronyms are meant to be used as a prompt to ensure ongoing high-quality care on the ward round review. The ward round is when the decision maker and/or senior member of the team make plans for the patient going forward and ensure progress of care is as expected. The ward round forms a crucial part of the patient’s day, and it is vital that this is optimised and documented correctly to ensure ongoing, high-quality care.

The aim of this quality improvement project was to standardise and consequently improve documentation within the ward round process, as well as to assess whether it improved communication between the patient’s parent team and other healthcare professionals.

The quality improvement project was carried out in an NHS district hospital over a period of 7 month with set criteria, determined by literature published as well as guidelines and recommendations from the RCS and GMC, Commissioning for Quality and Innovation (CQUIN) and local trust guidelines.

Materials & Methods:-

A single centre, prospective study assessed documentation of a ward round against set standards set out by the RCS, GMC, (CQUIN) and local trust guidelines.

The Plan, Do, Study, Act (PDSA) method for quality improvement was used for this project. Baseline assessment of the quality of documentation of the ward round process was carried out over a two-week period prior to the intervention. Repeat data was collected one month and six months after the introduction of a pre-printed ward round proforma printed on yellow coloured paper.

Primary and secondary parameters were identified using trust values and national guidelines as well as published literature which gave guidance on the correct method of documentation. Table 1 highlights the primary and secondary parameters used for data collection.

Primary Parameters	Secondary Parameters
Patient Name	Ward Round Lead
Date of Birth	Ward Round Lead Grade
Identification Number	Test Results
Working Diagnosis	Documentation of antibiotics
Entry signed	HDU / ITU Admission * *
Entry Dated	Early Warning Scores (EWS)
Entry Timestamped	Errors Crossed and Initialled
Name of scribe	Black Ink
Signature of Scribe	Legibility
Identification number of Scribe e.g. General Medical Council registration number*	

Table 1:- Primary and Secondary parameters assessed when reviewing documentation of the ward round.

* GMC number represented the General Medical Council registration number affiliated with all registered doctors within the United Kingdom.

* * HDU / ITU admission represents admission to High Dependency Unit / Intensive Therapy Unit, also known as intensive care unit.

We used the recommendations set out by the aforementioned organisations to help guide the data collection as to what was considered to be compliant.

PDSA Cycle 1

We used the above parameters to assess the quality of the documentation for the surgical ward round process for all patients who had been admitted for over 24 hours. Time taken to prepare each set of notes for the ward round was also recorded. Data collection occurred over a two-week period. Patients that had been admitted into the hospital for less than 24 hours were excluded from the data collection, since these patients would have been seen as part of the post take ward round which already has a template in place to help guide the scribe.

Following the results obtained through the first cycle, we developed a template for the ward round proforma.

Development of the ward round proforma

The ward round proforma was developed using the primary and secondary parameters highlight following review of published literature. Pubmed and Medline were both used in order to assess work carried out on ward round standardisation and use of proformas.

The size of the box used for recording patient information, was measured against patient sticker size that the hospital uses for patient details to be printed on. This sizing of the box was to make the proforma user friendly for junior doctors as it allows junior doctors to stick a patient identification label in place of writing out the patient details.

The order of information set out for the recording of blood results and the early warning score was done as the information appears on screen using the online system incorporated within the hospital that this quality improvement project was performed in. This was designed to make it easier and thus more efficient when filling out the information so that junior doctors are more likely to complete this information on the proforma.

Operative intervention as well as previous stays on intensive care units or high dependency units can highlight frail patients. Literature shows duration of stay within the intensive care unit, can affect morbidity of patients and so ongoing care must account for this increased risk [11].

The use of a numbered list to record the management plan was to ensure clarity of plan/jobs generated from the round while allowing junior doctors as well as the wider health care team to assess which of these jobs had been performed or were outstanding, allowing efficient ongoing care.

Venous thromboembolism assessment (VTE) is a national requirement, set out by the department of health, to improve inpatient safety [12]. The role of completing the VTE assessments usually falls to the junior member of the

team. The incorporation of a check box for discharge letters and venous thromboembolism assessment was designed to act as a prompt for junior doctors to consider and complete both in a timely manner. The check box also allowed the patient's wider healthcare team know if these tasks have been completed or still outstanding. As preparation of the notes traditionally takes place prior to the round, the prompt to complete the VTE assessment can encourage the junior doctor to do it while they are preparing the notes.

Intervention

A pre-printed proforma (Figure 1), printed on yellow coloured paper was developed. Prior to the introduction of the proforma, a talk on how to use the proforma for ongoing surgical ward rounds was given to all junior doctors. A talk was also given at the surgical induction of every set of new rotational doctors.

The pre-printed proforma contained both the primary and secondary parameters being assessed as well as having space for recording antibiotics, aiming to improve antibiotic stewardship, and an area to record recent blood results and the EWS of the patient and prompts for VTE assessment and completion of discharge letters, to improve clinical documentation and patient outcomes [6].

Surgical Ward Round

Surgical Ward Round Lead Name

Surgical Ward round Lead Grade

Date of ward round

Time of ward round

Patient Name

Patient Date of Birth

Patient Identification Number

Please affix patient identification label here

Working diagnosis / On-going issues

1.

2.

3.

4.

Operation

Date of operation

ITU / HDU stay (please circle) YES NO

ITU/HDU Step down date to the ward

Patient on antibiotic (please circle) YES NO

Antibiotic Name

Antibiotic start date

Antibiotic to continue (please circle) YES NO

Clinical information and examination findings

Date of results:	
Sodium	
Potassium	
Urea	
Creatinine	
eGFR	
Bilirubin	
ALT	
ALP	
Hb	
WCC	
Neutrophils	
INR	
Other:	

Early Warning score	
Respiratory Rate	
Oxygen Saturation	
Blood Pressure	
Heart Rate	
Temperature	
Total EWS Score	

Management plan

1. 5.

2. 6.

3. 7.

4. 8.

VTE completed ☐

Discharge Letter completed ☐

Scribe Name

Scribe Signature

Scribe GMC number

Figure 1:- Ward round proforma that was developed following review of inpatients ward notes and base line data collection.

eGFR represents estimated glomerular filtration rate, ALT represented alanine transaminase, ALP represents alkaline phosphatase, Hb represented haemoglobin, WCC represents white cell count, INR represents international normalised ratio.

ITU represents intensive treatment unit, also known as intensive care unit.

HDU represents high dependency unit.

VTE represents venous thromboembolism assessment

As well as the talk given to the junior doctors and nursing team, we nominated nursing and medical representatives so that both nurses, and doctors could get in escalate concerns or highlight amendments to improve the proforma.

PDSA Cycle 2

Following the introduction of the proforma and introductory talk how to use the proforma, we allowed a period of 2 weeks for teams become familiar with using the document and then reassessed the quality of documentation. The standards used for initial data collection were used in the second cycle and again those patients who had been admitted for less than 24hours were excluded for the data collection for the above-mentioned reasons. We also recorded time taken to prepare the notes prior to the ward round.

The data was collected using notes of surgical patients on the acute surgical ward over a one-week period.

Intervention

Reassessment of data showed some improvement but not 100% compliance. To improve compliance, we held a question-and-answer session for all members of the wider healthcare team who part of the surgical ward is. We also nominated more than one doctor and nurse who acted as a point of contact should any questions arise outside the question-and-answer session. This was aimed to help encourage individuals to fully complete the document. Posters were also erected around the surgical ward and the acute surgical admission unit to introduce the concept and help guide how to use the template.

PDSA Cycle 3

Talks were given as part of the introduction into surgery for all new junior doctors. Nursing staff were given separate talks as to how to use the proforma, what each section means, and what to do if they had concerns.

We then reassessed the quality of documentation of the ward round for acute surgical patients who had been admitted for >24hours onto the acute surgical ward. Time to prepare the patients notes for the ward round was recorded as part of the data collection. Data collection occurred over one week and once again excluded those who had been admitted for less than 24hours.

The primary and secondary parameters used in the 1st and 2nd cycle were used for the 3rd cycle.

Results:-

Following incorporation of the pre-printed ward round proforma within the general surgical ward round process, a repeat prospective audit was preformed 1 month and 6 months after integration of the proforma.

Following review of collated data, improvement in all primary and secondary parameters assessed was noted. Documentation of patient name, date of birth (DOB) and patient identification numbers (PID) improved from 86%, 80% and 74% (n=50) to 100%, 93% and 100% respectively at 1 month (n=30) and 100%, 96% and 100% at 6 months (n=30). Figure 2 shows the trend of increasing compliance at subsequent assessments of the quality of documentation.

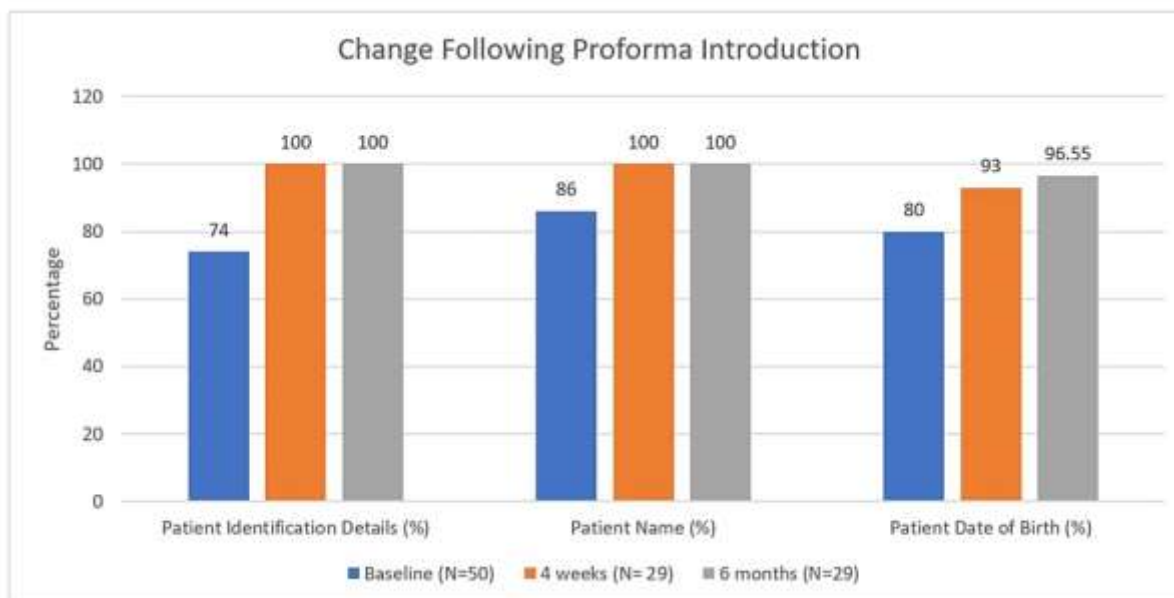


Figure 2:- Showing improvement in documentation of patient identifiers such as patient identification number, patient name and patient date of birth.

Documentation of the name of the ward round lead showed an 20% improvement, and documentation of the ward round lead's grade showed a 69% improvement when compared from initial baseline measurements to 6 months following incorporation of the ward round proforma.

Figure 3 shows how the incorporation of the proforma increased antibiotic stewardship from 0% to 98% over the 6-month period following introduction, and significantly improved the summary of the patient's journey thus far up to the most recent ward round.

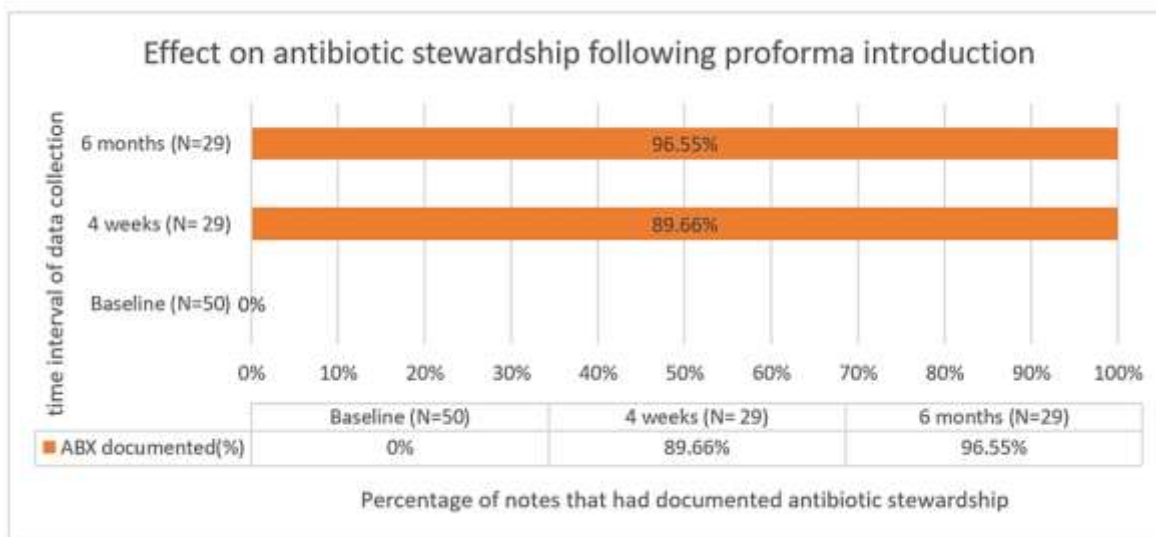


Figure 3:- Documented improvement in antibiotic stewardship following incorporation of the ward round proforma.

Effect on efficiency

Prior to the introduction and implementation of the ward round proforma, average time taken for preparation of the patients notes prior to the surgical ward round was on average 4 minutes 41 seconds. Preparation for the ward round required obtaining the patients notes, looking up test results, review of the early ward score and summarising care and history of the patient to date.

Following incorporation of the ward round proforma, average time was reduced to 2 minute 26 seconds at 1 month and 1 minute 38 seconds at 6 months after introduction of the ward round proforma.

The introduction of the ward round proforma prompted junior doctors to record blood results, surgical procedures the patient underwent during the acute surgical admission, and whether the patient required additional support in the form of intensive care unit / high dependency unit. This information was intended to highlight patients who may require additional support in their management going forward, both medically and socially.

Opinions on proforma

Prior to the introduction of the proforma, ward rounds were unstructured within the surgical team. Feedback from junior doctors and the nursing team showed that 80% of the junior doctors thought the proforma had improved the ward round process, 20% found no change to the ward round process (n=10), and 75% of nursing staff thought the proforma improved clarity of management plan (n=8).

There was limited information as to what aspect of the proforma led to the perceived improvement of the ward round process. Further work is required to assess this further to ensure high quality ongoing care of patients.

Use of Colour

Ward round entries were traditionally recorded on continuation sheets. A continuation sheet is a white sheet of lined paper. The incorporation of coloured paper for the proforma was designed to make identification of the ward round entry easier.

100% of junior doctors (n = 10) and nursing staff (n = 8) felt the proforma, due to the bold colour it was printed on, allowed for ease in identifying the ward round documentation and thus allowed for a more time efficient patient review / check of plan.

Discussion:-

The fast pace of a surgical ward round combined with the desire to provide ongoing, high-quality care was the driving force for the incorporation of the ward round proforma into the daily surgical ward round. Time taken for junior doctors to both prepare notes for the ward round and discharge letters due to inadequate or unclear documentation of the ward round was another factor when developing a ward round proforma with view to establish a ward round proforma that both made the ward round process efficient and improved patient safety.

Another indication for the use of the proforma was to make the ward round over the weekend more efficient. Prior to the use of the proforma, weekend ward rounds were renowned for being long. Long weekend ward rounds were attributed to the weekend team having to go through the entirety of the patients notes to see what had previously been documented to help guide future care for the patient. Previous studies have shown that guiding documentation on the ward round improves recording of the patient's observation, examination findings and diagnosis [3,4,13] Literature has highlighted these improvements in medical wards and during the initial review of surgical wards but there seems to be limited data to assess the effect of a proforma on ongoing care for surgical patients. Within general surgery, date of operative intervention and intensive care unit or high dependency unit admission are vital to providing ongoing care, improving patient mortality and morbidity by appropriately adjusting care for these factors [11].

The use of the ward round proforma, on colour paper, was aimed at reducing time taken to find the last senior clinician review. It also meant the weekend team had a summary of the patient's care at hand, so the weekend consultant was able to effectively see management to date and so collate management plan accordingly.

The use of the ward round proforma led to improvement in all assessed areas with both nursing staff and junior doctors finding it easy to use and helpful when documenting or interpreting the ward round plan or outcome. Similar results have been demonstrated by other authors, although the focus is usually more on the post-take ward round, as opposed to daily ward rounds which was the focus of this study. In his 2009 report, Wright demonstrated a significant improvement in documentation when a proforma was introduced for post-take ward rounds at a busy 400-bed city hospital [14].

Thompson et al (2004) examined 100 clinical records over a 3-week period investigating the documentation for a post- take ward round. Their results demonstrated that using a proforma leads to better communication and patient care [2]. The link between proforma use and improved communication and patient care shows the importance of structure and guidance in the ward round process, this includes the documentation of it [15].

The types of patients used in this study included urology and general surgical patients, as these were the types of patients found on the acute surgical ward. Trauma and orthopaedic patients have a separate ward at the district hospital that this quality improvement project was undertaken at. This shows that the data presented is reflective of the use of the ward round proforma in the general surgery or urology patient cohort, but more work would be needed to assess the feasibility of a ward round proforma on another speciality ward such as trauma and orthopaedic.

The district hospital where this quality improvement project was carried out is not a major tertiary hospital. This means that the number of junior doctors who took part in the survey was lower compared to a bigger, tertiary hospitals. More work needs to be done in order to gauge how useful junior doctors find ward round proformas for further development of the proforma to meeting the changing dynamics of the ward round process.

Carrying out the quality improvement project on the trauma and orthopaedic ward or the medical wards maybe an area for future work to gain a better insight into the versatility of the proforma across different specialities in order to standardise patient care delivery.

General surgery is renowned to be fast paced with a high turnover of patients, and a quicker ward round pace, so junior doctors have a limited amount of time to ensure they have all the information documented from the round. The proforma acted as a memory aid for junior doctors, to clarify important points while a decision maker was present. It also allowed junior doctors to prepare the notes beforehand without having the need to search the entire set of notes for key information. By not having the entire set of notes, while preparing for the ward round process, other member of the patient's healthcare team is able to continue to perform their role and thus improve patient care and outcomes as well as the patient's journey.

The use of colour paper made it easier to find the ward round documentation which was especially important when reviewing an unwell patient as it may have been the last time a senior clinician had seen the patient. The use of coloured paper for the proforma also made weekend reviews easier for the consultant in charge as they were able to find the last senior clinician review, which was usually consultant led, get an overview of the patient's care so far and what the parent team clinician had planned for the patient.

Although promising, the results of the quality improvement project would have been affected by Hawthorne bias as we highlighted to junior doctors that we were incorporating a surgical ward round proforma and that we were going to be assessing its use. This may have meant that junior doctor may have changed the quality of documentation or taken more care as they knew they were being assessed in the process.

The ward round proforma uses an A4 sheet of colour paper each day for each entry. Single sheet per entry may not be the most economical or environmentally friendly method of documentation of the ward round process. However, advances in technology and with the incorporation of electronic documentation into daily practise, the proforma can be transcribed electronically.

Following introduction of the ward round proforma, 80% junior doctors found it improved the ward round process. The proforma acted as a clinical guide for documentation for those with less experience in the specialty.

Literature has shown the importance of documentation and its effect on patient outcomes [11,12]. Ward round proformas have shown to have some benefit in improving documentation as well as communication between healthcare professionals [7,14,15]. Clinical incidents and root cause analysis carried out within the trust further highlighted the importance of improved documentation to improve overall patient care. The electronic proforma maybe an area for future work when developing software to electronically document patient care.

Conclusions:-

The introduction and integration of a pre-printed ward round proforma, on yellow coloured paper, which had headings to help guide documentation, allowed for standardised information to be documented on the ward round and thus improved both the process of the ward round and documentation of management plan.

Communication between teams was improved as the management plan was clear to other health care professionals and the proforma headings acted as a prompt to junior doctors. The use of coloured paper allowed for quick identification of the ward round entry, and identification of potentially the last senior review a patient received. This made it more efficient when reviewing an unwell patient or checking the management plan of patient to assess suitability for discharge and consequently improved patient flow.

Additional work is needed to optimise the proforma with a view to extend its use to other surgical specialities. The long-term goal would be to incorporate the proforma into an electronic medical record, which is believed to provide superior results. Another area for future work would be to assess how clinical outcomes were affected with the incorporation of the pre-printed ward round proforma, and how this can affect the patient's journey.

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