

The Urology Checklist towards a Structured Consultant-Led Ward Round

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Abstract

Objective: Formulating a comprehensive, practical, and urology-focused ward round checklist to enhance safety, efficiency and clear documentation for the Urology ward team when reviewing in-patients.

Design: Identification of important parameters which should be addressed in every patient interaction. FIASCO – VH was coined for ease:

- Fluid balance
- Investigations
- Intravenous access
- Antibiotics
- Analgesia
- Stool
- Catheter status
- Observations
- Venous thromboembolism (VTE) risk assessment
- Home and follow up.

Baseline measurement followed by implementation of the checklist and completion of three plan-do-study-act (PDSA) cycles.

Setting: Single-centre district general hospital within the United Kingdom

Participants: 279 ward round interactions with Urology inpatients

Intervention: Implementation of the ward round checklist

Main outcome measures: Adherence to parameters identified in the urology checklist

Results: Stool (23.5%) and pain (30.6%) were worst assessed at baseline, with median 39.3% parameters assessed over all interactions. Significant improvement in assessed parameters after first (median 74.3%), second (median 84.0%), and third cycles (median 100%). These were associated with positive patient outcomes. There was discrepancy between factors verbally addressed and clinically documented (median 84.0% to 57.7% after second cycle). A dedicated third cycle reduced this gap (median 100% to 97%). 100% junior doctors surveyed believed the checklist has enabled addressing of factors which might have otherwise been missed.

Conclusion: The use of a comprehensive, urology-focused, easy-to-memorise ward round checklist is feasible and led to sustained, well-documented improvements in all measured aspects of patients' care, and perceived level of care by the team.

Keywords: Ward round; Checklist; Urology; Surgery; Safety

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Introduction

The daily consultant-led ward round is a structured strategy employed in most hospital trusts within the United Kingdom. In our hospital trust, there is a daily ward round of all urology inpatients led by a Urology consultant. These are performed to assess any new patients admitted with emergency conditions, and to review any previous admitted emergency patients and patients that have been admitted for elective operations. These ward rounds are important to ensure a senior medical decision maker assesses any new patient and ensures an appropriate management plan is in place.

Poor quality of assessment on the ward round is directly related to preventable patient complications, and one study highlighted that 41% complications in surgical patients could have been diagnosed earlier or prevented by more thorough ward rounds [1].

Clinicians require essential pieces of information to formulate a suitable management plan. Factors which may affect variability and loss of information include suboptimal handover, distractions, variability in previous assessments and documentation, differences in team composition, differences in how the ward round is led, and lack of involvement by junior members of the team. This may further be exacerbated by the time limitations of the ward round. A New Zealand study found that the average time spent assessing each individual patient on the ward round was less than 3 minutes [2].

It is clear that variability and loss of information decreases efficiency and compromises patient safety. One strategy which has proved efficacy in many contexts is the use of a checklist [3,4]. In particular, the World Health Organisation (WHO) surgical checklist has been adopted worldwide and has robust evidence for improving safety [4]. The Royal College of Physicians and the Royal College of Nursing recommend the use of safety checklists to minimise errors and to ensure full team participation [5]. Furthermore, NICE guidance suggests that structured ward rounds were a cost-effective strategy to promote timely discharge, and ensure more reliable care for the patient [6]. Many quality improvement projects spanning multiple cycles have demonstrated the effectiveness and feasibility of implementing a checklist to create a structured ward round [7-9]. One method by which checklists can address the problems of variability and communication outlined above is through clinical documentation, which is ultimately important for continuity of care [10].

Methodology Adopted

The daily urology ward round is carried out by one consultant urology surgeon for 3 or 4 consecutive days with variable junior members of the team such as a Foundation Year 1 (FY1) doctors, trust doctors or an advanced nurse practitioner. All of the data was collected by two FY1 doctors.

A checklist was developed for the daily Urology consultant-led ward rounds to improve the quality of the review of patients on ward rounds, and the documentation of these patient assessments. This checklist would include parameters important for clinical decision-making regarding management for urological

patients. The standards used for this checklist were based on the Royal College of Physicians and the Royal College of Nursing ward round guidance, and the concept of the checklist was adapted from the WHO surgical safety checklist.

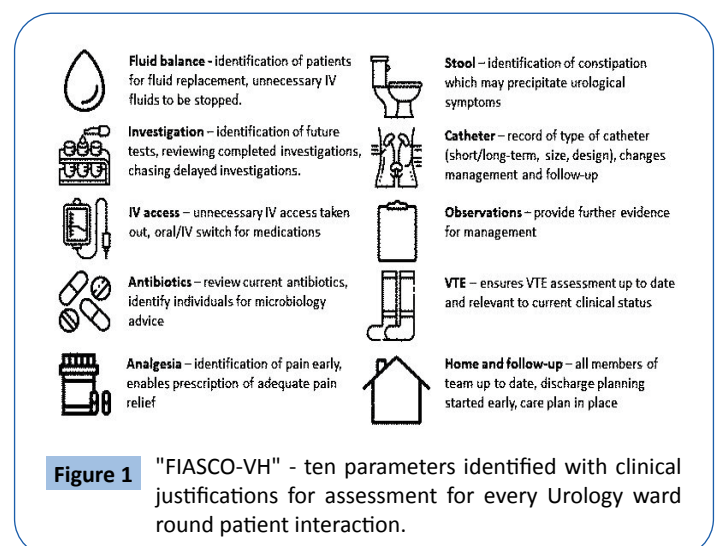
First, important parameters for clinical decision making for urological patients were identified. This comprised the National Early Warning Score (NEWS), Venous Thromboembolism (VTE) risk assessment, antibiotic stewardship, fluid balance, catheter status, assessment of analgesia, assessment of investigations, intravenous access, stool status, and home and follow-up plans (Figure 1).

A baseline measurement was taken by two FY1s on surgery on their Urology rotation over two weeks of ward rounds to assess whether the parameters were addressed. After this, the checklist was implemented and publicised through posters, laminated cards given to all relevant clinicians, and presentation at the urology audit meeting. This was followed by completion of three plan-do-study-act (PDSA) cycles to assess adherence, feasibility, improvements in documentation, and whether clinical management changed for patients.

PDSA Cycle 1

We identified ten parameters which would be important in the context of a ward round setting for every Urological patient. These were: fluid balance, investigations, IV therapy, antibiotics review, analgesia review, stool, catheter status, observations, VTE assessment, and home and follow-up. These parameters were drawn from previous ward round checklists that improved care, and tailored to the Urology ward round based on expert opinion from a panel of urology decision-makers.

Fluid balance assessment will enable identification of patients for fluid replacement and allow unnecessary IV fluids to be stopped. Investigation review will identify tests to be scheduled for the following day, as well as reviewing completed investigations and chasing delayed investigations. IV therapy review can lead to unnecessary IV access taken out, and appropriate oral/IV switch to be made. Antibiotics review enables unnecessary antibiotics to



be discontinued and the overall course to be reviewed. Analgesia review identifies pain early, enabling prescription of adequate pain relief. Stool review allows identification of constipation which may precipitate urological symptoms. Catheter review enables correct identification of catheter status (appropriate size, long or short term, and catheter design), as well as bag contents and volume, which directly affects management and follow-up. Observations are important to provide further evidence for management. VTE assessment will ensure the VTE assessment is up to date and relevant to the patient's clinical status. Finally, home and follow-up enables the team to be up to date with the plan, allowing discharge planning to be started early. This prevents unnecessary increased length of stay due to a care plan which is not ready.

A baseline measurement was conducted over 10 ward rounds with 3 different urology consultants. 98 ward round interactions with patients were assessed over this time. 91.8% of interactions had observations discussed in the ward round. The areas which needed improvement were stool review, analgesia review, antibiotic review, and IV access review, which were found in less than 35% of all interactions (**Figure 2**).

The action plan was to create and implement a urology checklist with the acronym "FIASCO VH" for ease of memory and dissemination. A laminated poster with the checklist and initial baseline measurement findings was put up on wards with urology patients. All consultants and junior members of the team

were given a laminated card with the checklist, and a free text function was developed on the local electronic record system (Lorenzo™) for the parameter headings to be easily included into the electronic note. These initial findings were communicated and presented at the departmental urology audit meeting.

In order to assess the effect of implementing the checklist, a second audit was conducted to measure if these factors were assessed on the ward round. Furthermore, the benefits of adherence were monitored throughout this process. This measurement was done over 7 ward rounds with 3 different urology consultants, and 68 ward round interactions with patients were assessed over this time. This revealed an improvement in every single domain (**Figure 3**). The most well addressed factor remained observations, with 97.1% interactions having observations discussed on the ward round. The worst well addressed were stool review and analgesia review, with 57.3% interactions for both.

The effects on patient care were recorded over this time for 55 of these patients. 8 patients had missed VTE prophylaxis picked up as a result, and appropriate therapy was prescribed during this period. 2 patients had unnecessary cannulas removed, 1 patient had constipation recognized and appropriate laxatives prescribed, and 1 patient had inappropriate prescription of antibiotics recognized and amended during this period of time.

PDSA Cycle 2

The preliminary results suggested that implementation of the

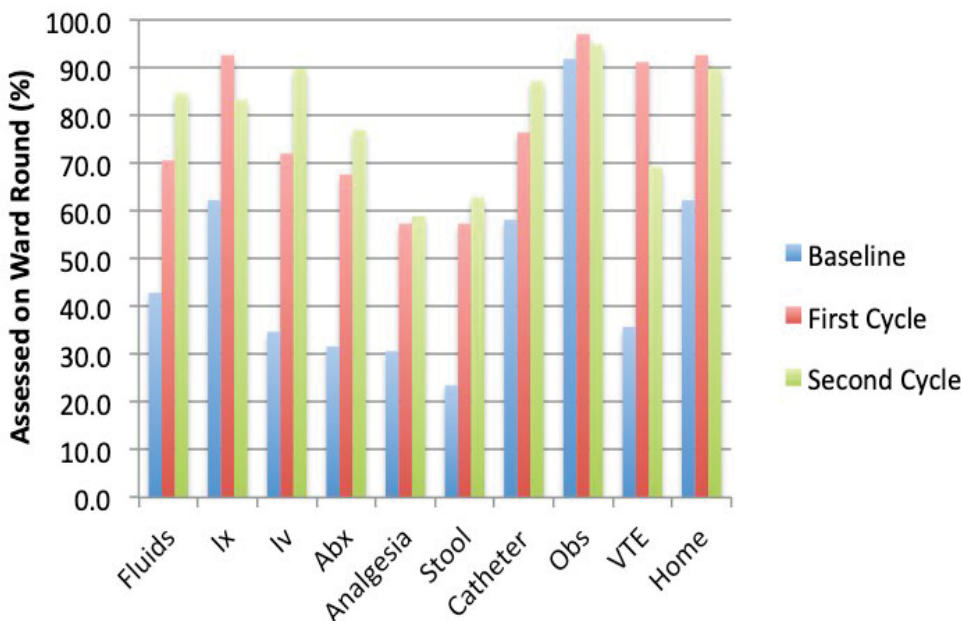


Figure 2 **Blue:** Baseline measurement of parameters assessed on the urology ward round: fluids (42.9%), investigations (62.2%), intravenous access (34.7%), antibiotic status (31.6%), analgesia (30.6%), stool (23.5%), catheter (58.2%), observations (91.8%), VTE prophylaxis (35.7%), home and follow-up (62.2%).
Red: improvement in every single domain following implementation of the ward round checklist, audit 2 revealed results of: fluids (70.6%), investigations (92.6%), intravenous therapy (72.1%), antibiotics status (67.6%), analgesia (57.4%), stool (57.4%), catheter (76.5%), observations (97.1%), VTE prophylaxis (91.2%), home and follow-up (92.6%).
Green: Results of the re-audit, showing sustained improvement from baseline with regards to all parameters, audit 3 revealed: fluids (84.6%), investigations (83.3%), intravenous therapy (89.7%), antibiotic status (76.9%), analgesia (59.0%), stool (62.8%), catheter (87.2%), observations (94.9%), VTE prophylaxis (69.2%), home and follow-up (89.7%).

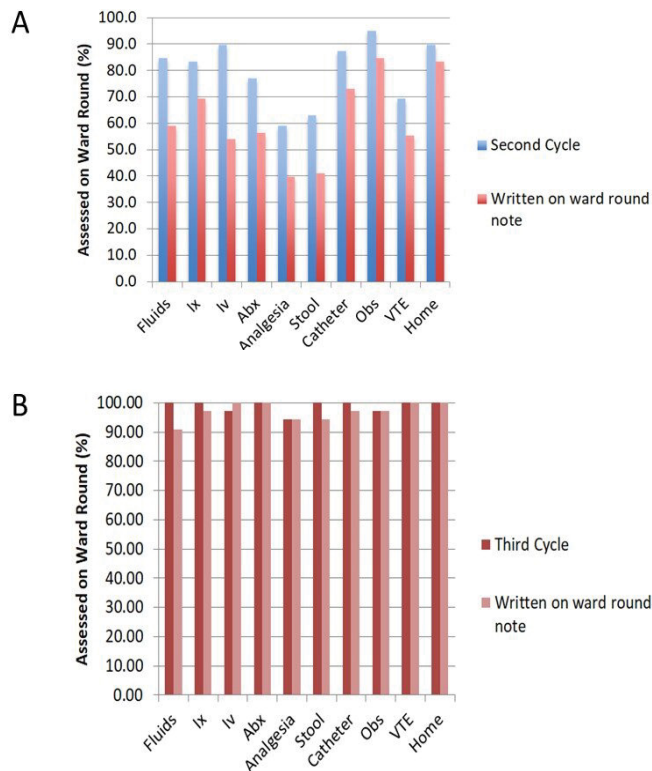


Figure 3 (A) Comparison between ward round discussion to documentation on ward round note during cycle 2. Documentation values were: fluids (59.0%), investigations (69.2%), intravenous therapy (53.9%), antibiotic status (56.4%), analgesia (39.7%), stool (41.0%), catheter (73.1%), observations (84.6%), VTE prophylaxis (55.1%), home and follow-up (83.3%). (B) Results of the PDSA Cycle 3, showing good adherence to the ward round checklist structure for all parameters both addressed recorded on the ward round note.

audit checklist had increased assessment of these parameters on the ward round, leading to improvement in all domains. This had led to positive effects on patient care, especially in VTE prophylaxis assessment, but stool status and analgesia review remained parameters often not asked about on the ward round. A further action plan was conducted involving circulating the results of the first cycle to the whole of the urology team, with a further reminder of the areas which needed improvement.

A re-audit was conducted over 7 ward rounds with 3 different urology consultants, and 78 ward round interactions with patients were assessed over this time. The parameters assessed on the ward round were recorded, as well as the recording of parameters on the electronic ward round Lorenzo documentation.

Generally, the improvements were maintained or improved slightly. Observations remained the most well addressed domain, stool and analgesia remained least well addressed but there was an improvement from baseline. The effects on patient care were also addressed over this time. 6 patients had constipation picked up and laxatives prescribed, 4 missed VTE prophylaxis assessments were picked up and had relevant prophylaxis prescribed, 4

patients had new IV fluids or current IV fluids stopped following review of fluid balance, 1 patient had an unnecessary cannula removed, 8 patients had antibiotic therapy optimised in the form of unnecessary therapy stopped or oral switch initiated, and septic arthritis was picked up in one individual after specifically asking about pain. However, transferring from ward round discussion to electronic documentation was identified as a problem. There was a decrease in all domains when recorded documentation was audited.

PDSA Cycle 3

The previous quality improvement cycle indicated that implementation of a ward round checklist led to feasible and maintained change. However, this identified the problem of a disconnection between discussion on the ward round and documentation on ward round notes. Recording in ward round notes is especially important as the composition of the team varies day-to-day, and important information may be lost in handover without an accurate ward round record. An action plan was decided after presenting the results of the previous quality improvement cycle in the urology audit meeting. The consensus was for the junior doctors to prepare the ward round notes with the relevant parameter headings before the ward round, to encourage all doctors to speak up if a relevant parameter had not been addressed, and to include a laminated copy of the checklist on all ward computer desks.

A final re-audit was conducted over 6 ward rounds with 3 different urology consultants, and 35 ward round interactions with patients were assessed over this time. These results reveal good adherence to the ward round checklist, with improvements in all domains. There was also good transfer from the verbal ward round to the ward round note (**Figure 3A**).

Overall, the audit showed that implementation of the checklist improved assessment of parameters globally on the ward round, with a median of 39.3% at baseline, 74.3% following completion of the first PDSA cycle, 84.0% following completion of the second PDSA cycle, and 100% following completion of the final PDSA cycle (**Figure 4B**). Additionally, we conducted a survey amongst the junior doctors working on urology regarding their views on the implementation of the ward round checklist. 100% of junior doctors surveyed reported that they believe the ward round checklist has enabled the team to address factors which might have otherwise been missed in the ward round. 20% of junior doctors surveyed believed it led to greater empowerment of junior doctors on the ward round (**Figure 4**).

Discussion

Considering the multiple variables involved in the daily ward round process, the need for a reference checklist remains paramount. These variables include nursing and medical team working hours and shift systems, training backgrounds, ward round leadership styles, and the actual time dedicated for a daily ward round. The use of checklists in the high-risk industries such as aviation and army has been well documented to have positive repercussions [3]. The best example in the medical field was the

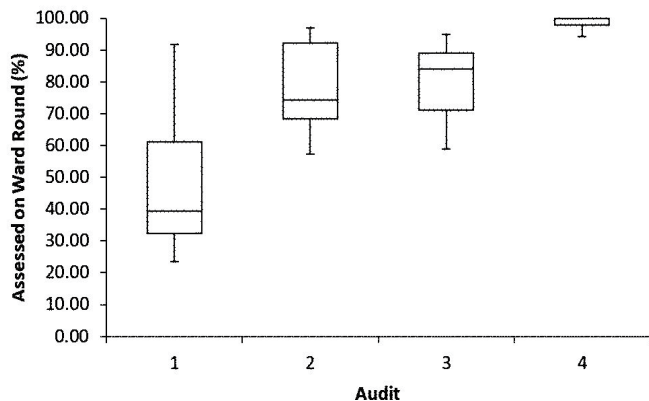


Figure 4 Summated results of all three PDSA cycles, showing the median, quartiles, and maximum and minimum values as box plots, median of audit 1 baseline (39.3%), audit 2 (74.3%), audit 3 (84.0%), and audit 4 (100%) were recorded.

WHO peri-operative checklist, which has reduced peri-operative mortality and complications [4]. The ideal checklist should encompass all the detrimental factors to the patients' acute and overall care. The items on the checklist should account for the holistic assessment for an acutely admitted patient who may or may not have a urological problem, considering that the admitting team may have not received urological training. On the other hand specific items pertinent to the urological patients such as catheter care and constipation should also be present. Compared to previously published checklists, we found our checklist easy to memorize, comprehensive and focused [8].

One factor that is particularly pertinent to surgical specialties

such as Urology is that the senior decision makers are often trying to fit in ward rounds around other clinical commitments such as operating lists and outpatient clinics [11]. However, in light of healthcare funding issues, it is essential that all clinical time is used as efficiently and effectively as possible and this makes the ward round a precious time that should be utilised in a structured manner. Overall, the study achieved 3 PDSA cycles, including a dedicated documentation cycle. The results of the study revealed that application of the ward round checklist was feasible and enabled reliable assessment of the ten factors identified on the ward round, and qualitative benefits in patient care were noted on a case-based basis. Additionally, all junior members believed the ward round checklist identified factors which may have otherwise been missed. The main limitation of the study was the relatively short duration over which the audit took place. This was partially compensated for by the satisfactory number of ward round encounters. Another limitation is that the study only reported qualitative examples of improving patient safety and care, but did not include quantitative measurable feedback.

Conclusion

Finally, this study did not include outcomes from the nursing perspective. The 'time out' section of the WHO checklist has demonstrated that a reviewer who monitors the process allows for accurate implementation of a checklist. Therefore as quality improvement, we suggest nominating a member of the team at the start of the ward round to monitor its implementation. The use of a comprehensive, urological focused, easy to memorize ward round checklist led to a sustained, well documented improvement in all measured aspects of patients' care. The nomination of a checklist monitor at the start of a ward round as a means of ensuring adherence is to be further explored.

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