A QUALITY IMPROVEMENT PROJECT TO REDUCE TIME TO DIAGNOSTIC X-RAYS FROM ARRIVAL IN FRACTURE NECK OF FEMUR PATIENTS

Executive Summary

A quality improvement project to reduce time to diagnostic X-rays to less than 60 minutes in 90% of adult patients with fracture neck of femur as a primary aim is carried out based on the Royal College of Emergency Medicine Clinical Standards. The interventions were introduced through a series of PDSA cycles with a multi-disciplinary team approach. Overall there was an improvement in the time taken for the patients to diagnostic X-rays compared with the times before my QIP even though it could not reach the desired RCEM standards. The methodology, results, discussions, reflections, and suggested future work towards improvements are presented.

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Declaration

I hereby declared that this Quality Improvement Project is the result of all my work and I have acknowledged the work of others and references.

Word count – 5681 (excluding Appendices and References).

CONTENTS

LIST OF ABBREVIATIONS

ACP	Advanced Clinical Practitioners
ED	Emergency Department
FIB	Fascia Iliaca Block
NOF	Neck of Femur
NICE	National Institute for Health and Care Excellence
NIC	Nurse in charge
NEWS	National Early Warning Score
PDSA	Plan Do Study Act
QI	Quality Improvement
QIP	Quality Improvement Project
RAT	Rapid Assessment and Treatment
RCEM	Royal College of Emergency Medicine
SWOT	Strengths, Weaknesses, Opportunities, Threats

ABSTRACT

Background

A Quality Improvement Project (QIP) was undertaken at a district general hospital with university teaching responsibilities, with the intention to improve the care of adult patients with fracture neck of femur (NOF).

Methodology

Based on the Royal College of Emergency Medicine Clinical Standards, the interventions were introduced through a series of PDSA cycles to achieve the primary aim which is to reduce time to diagnostic X-rays to less than 60 minutes in 90% of adult patients with fracture neck of femur.

Results

The mean value of the time to diagnostic X-rays was **147 minutes** in November and December of 2019 of the preliminary audit period, that is, **20%** and **12%** of patients achieved the diagnostic X-ray within 60 minutes respectively.

During the PDSA cycles, the mean value of the time to diagnostic X-rays improved to **95 minutes** from March to November of 2020 throughout my quality improvement project. The percentage of patients who achieved the diagnostic X-ray within 60 minutes were at its best in April of **33%** and **25%** in both May and August 2020 and the least achievement was in October 2020 of 18%.

Conclusion

Overall my QIP did bring a positive outcome of an improvement in the time taken to diagnostic X-rays, which in turn facilitated the clinicians for better patient care such as longer-lasting analgesia and definitive management even though it did not reach the RCEM Clinical Standards of 90% of diagnostic X-rays performed within 60 minutes. I also identified the future areas of work for further QIPs.

INTRODUCTION

A) Background

This quality improvement project was carried out in the emergency department of Southend Hospital, a University Teaching hospital NHS Foundation Trust, in the Southeast of England. Our emergency department is attended by approximately 300 patients per day, that is, 110,000 Emergency Department attendances each year.

Each year, almost 30% of over 65s fall at least once; this equates to around 3 million people in England. There are an estimated 500,000 fragility fractures each year. A hip fracture is one of the most common fragility fractures. It is a major public health issue due to an ever-increasing aging population. [1]

In 2016, the National Hip Fracture Database (NHFD) reported that, 6.7% of people had died within 30 days of presentation with a hip fracture. The cost to the NHS is estimated to be £2 billion a year.[1]

The Public Health Outcomes Framework reported an age-standardized rate of emergency admissions for a hip fracture in people aged 65 or over as 575 people per 100,000 which tripled to 1,545 per 100,000 people over aged 80 in 2016/17.

All UK Emergency Departments admit 65,000 patients with fractured neck of femur every year. [1]

B) Problem Identification

When I started my rotation at the emergency department of Southend Hospital in August 2019, I was looking for an area to improve patient care as a potential quality improvement project in my new department.

C) A Clinical Case

It was one of our usual busy evening shifts.

I had seen Mrs V who was brought in by Ambulance Service on 20th November 2019 at 17:25 after she tripped and fell on the road. The paramedics gave handover to the triage nurse as a suspected fractured neck of femur patient as her leg was shortened and externally rotated. She had analgesia on route. Since we all were running a busy shift, she waited for ***30 minutes*** to be seen by a nurse at RAT area for initial assessments.

When I saw on Emergency Department patients lists (Medway) as “pelvic and hip pain”, I prioritized to see her and requested pelvic and hip X-rays. However, it was ***61 minutes*** since her arrival.

She was waiting for a major cubicle and a porter to transfer to radiology. Finally, she had X-rays after ***77 minutes*** of arrival. I promptly reviewed and referred to orthopaedics with adequate oral and intravenous analgesia as she was not suitable for a nerve block. She was transferred to the ward at midnight and hence, was in A&E for more than 6 hours.

From that experience, I did some reflective learnings on the areas that a quality improvement project from multidisciplinary team could improve the patients’ clinical care and experiences when they have a potential debilitating injury.
There are multifactorial and logistical problems in all steps of the journey in various forms of delay.

The Audit Reports:

Furthermore, I read two fracture NOF audit reports from 2017 and 2018 of our ED which showed only 16.6% and 21% of patients had their X-rays performed within 60 minutes from arrival respectively.

D) A Preliminary Audit:

To check my personal experience was representative of the department, I did a preliminary audit and analysed data of 90 patients with fracture NOF from November and December 2019. I was astonished to find that it took a mean value of 147 minutes from the patients' arrival to the radiology department for X-rays.

Our ED does not have an established NOF pathway with the basic principle of intention to fast track to reduce the patients' time in the Emergency Department. When I analysed the usual journey of a suspected fracture NOF patient presenting to our ED, this showed multi-factorial delaying reasons:

- Delay at nursing assessments at the Rapid Assessment and Treatment (RAT): depending on workload, it could take at least 15 to 30 minutes for the patient to be handed over, arrange blood tests, an ECG and administer analgesia.
- Delay at the clinician assessments: The assigned doctors at RAT will assess and order an X-ray after nursing assessments.
- Availability of RAT area: if RAT is unavailable for various reasons mainly staffing shortage and during pandemic, patients have to wait for all the above processes to be done at major cubicles.
- Delay in transfer to Radiology: the nurses or the floor – coordinators will order the porters by Teletracking system, a software overviewing of the whole hospital logistic system.
- Delay at Radiology: depending on the workload at radiology.
- Transfer back and forth from Radiology by porters.
- Review by the clinicians.

This meant that when the department was busy for various reasons, a patient with a fracture NOF will often have to wait hours to get an X-ray and sadly even for analgesia.

From an ED perspective, the patient presenting with an isolated fractured NOF should be a straightforward process of analgesia, diagnosis, and admission with pre-operative planning.

The main problem appears to be a delay in diagnostic imaging and also something that can possibly be addressed as some of the delays identified above was not be amendable to my QIP. Finding a way to improving this delay, in theory, should speed up the whole process for the betterment of patients. Therefore, I have to formulate a pathway from the arrival of the ambulance to start the clock for achieving the best care for the patients.

E) Literature Review

I explored the Royal College of Emergency Medicine (RCEM) Clinical Standards [4] and nationally recognized guidelines such as NICE [3] and RCEM national audits [7] to get an evidence-based standard to set up in our ED as a potential quality improvement project.

According to Clinical Standards RCEM by for Emergency Departments published in August 2014[4] set up the below criteria:

1. Pain managed as per CEM standard

2. 90% - X-ray within 60 minutes of arrival

3. 75% - confirmed fracture NOF referred within 120min of arrival, with the referral time in the notes

4. Admitted within 4 hours of arrival.

I am aware that RCEM Clinical Standards are no longer set by the RCEM for an ED to adhere to and instead they advise to follow the nationally recognised guidelines such as NICE guidelines.

However, I explored some more guidelines and evidence for Improving Patients Care:

1) National Institute of Clinical Excellence (NICE) guideline for Hip Fracture Management, updated May 2017 (CG124) [3] advised for *"timely analgesia and timing of surgery to perform on the day of, or the day after, admission".*

2) Royal College Emergency Medicine, Fracture Neck of Femur Clinical Audit 2017/18 National Report, [7] published in October 2018, advised the Key Recommendations as *"importance of analgesia and nerve blocks should be used where possible to limit the use of systemic analgesia".*

3) According to National Hip Fracture Database (NHFD) annual report 2017, over 65,000 of fracture NOF patients presented to 177 hospitals in England, Wales and Northern Ireland in 2016, *" only 40% were admitted to a ward within 4 hours, 71% received surgery by the day after their hip fracture and which reduced further to 70.7 % in 2018 report".* [5,6]

To deliver the best clinical care to the patients, those demonstrate useful timescales, such as, to admit to the speciality team and perform the definitive treatment in a timely manner and to administer a longer-acting analgesia like nerve blocks if appropriate.

From the very essence of this principle, the foundation to carry out the above measures is to formulate a way for the faster definitive diagnosis. It would be the way forward for betterment of the patients care from the very beginning of his/her journey from their arrival in ED.

Therefore, I chose a component of RCEM Clinical Standard as my primary aim of developing my QIP "90% - X-ray to be done within 60 minutes of arrival" with a multidisciplinary team of stake-holders.

F) Aim

I started to plan for an Aim with a ***SMART*** model of Specific, Measurable, Achievable, Realistic, and Time-bound measures.

Primary Aim: To reduce time to diagnostic X-rays from arrival to be within 60 minutes for 90% of the adult patients with fracture neck of femur presenting to the ED by December2020.

G) Stakeholders Identification

The first step in starting the QIP is to identify the stakeholders with a direct impact on a day to day basis to achieve the above aims.

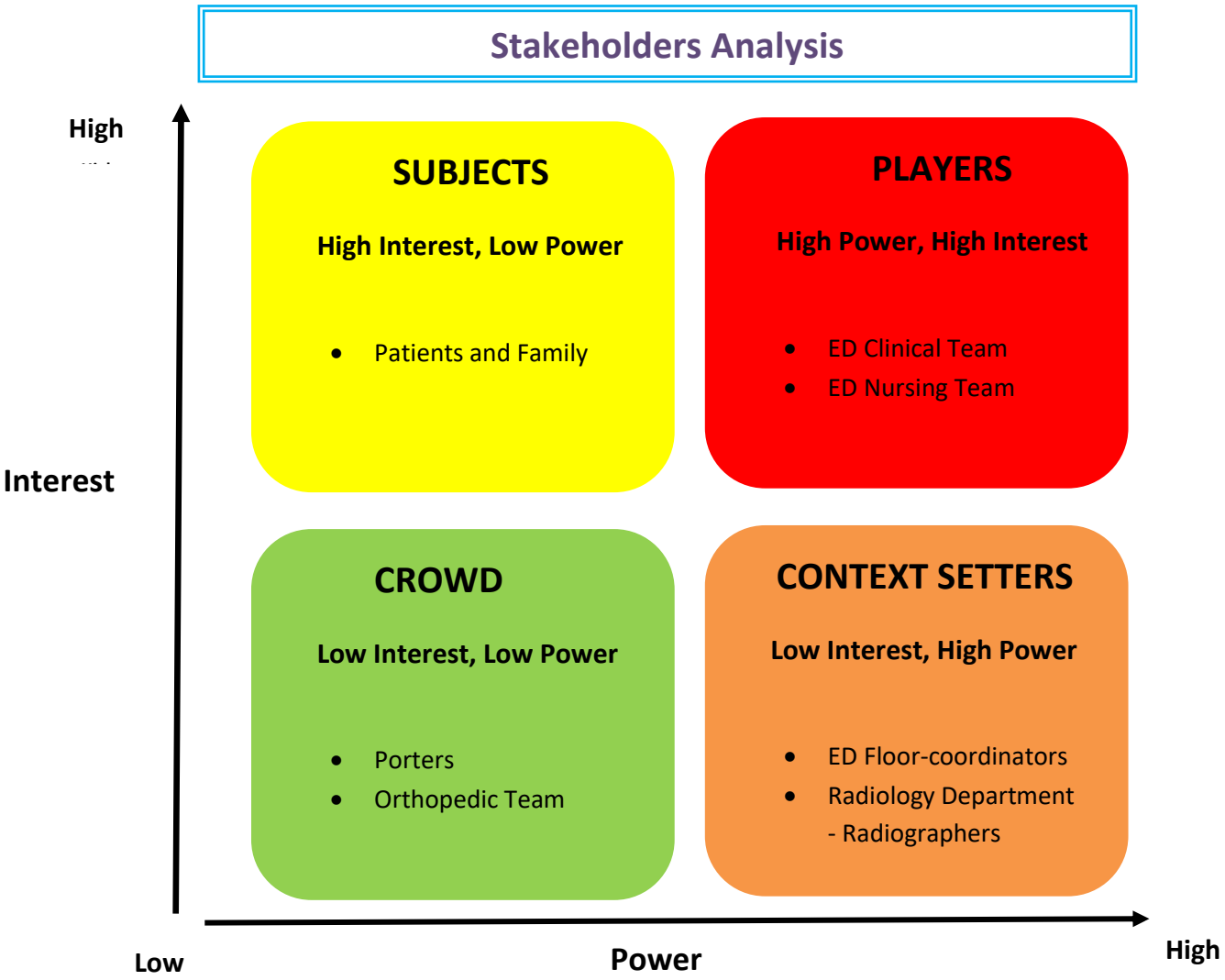


Figure 1. Power - Interest Grid

It was important to maintain strong working relationships with the stakeholders with the same vision to have committed participation from them throughout.

METHODOLOGY

A) Settings

This QIP was carried out at the Emergency Department of Southend hospital which is a 700 bedded University Teaching Hospital Foundation Trust and a trauma unit, serving the local population of 338,800 in the East of England. Approximately 110,000 patients attend ED every year. The department has a 5 bed- resuscitation area, 16 major bays, an area for minor illness and injuries, and a separate paediatric emergency department.

The crucial area for the development of my QIP is that ED has a 6-bedded Rapid Assessment and Treatment area (RAT) where the paramedics are greeted by a senior nurse-team to triage and a booking process is started.

B) Population

A total of **405 patients** met the set criteria and were included in my QIP during March to November of 2020.

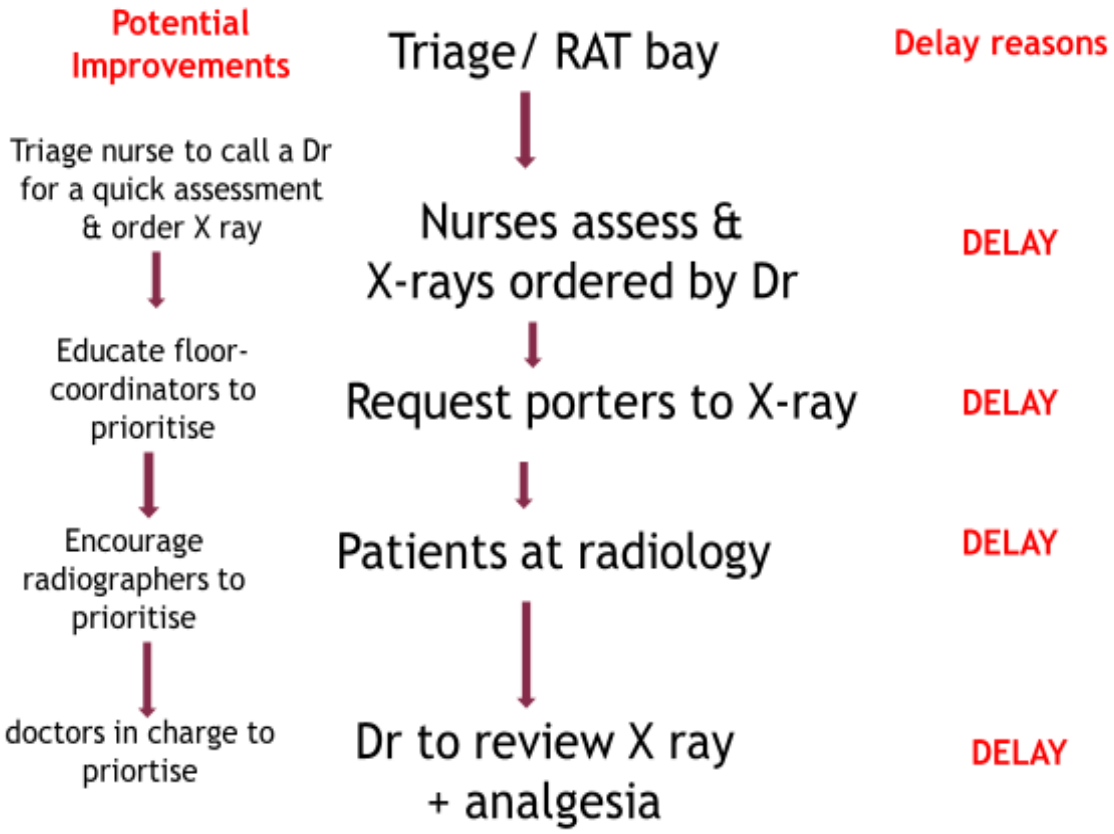
Inclusion Criteria	Exclusion Criteria
Adults patients of 18 years old and over, attending ED with traumatic hip pain.	**A)** Patients below 18 years old. **B)** Patients who meet the criteria of Trauma Calls or NEWS more than 2. **C)** Patients with suspected head, cervical spine, or polytrauma, or have other conditions that need immediate resuscitation.

Table 1: Inclusion and Exclusion Criteria

C) Methods

I designed a QIP flowchart to visualize how the whole project will be implemented in stages which aided visual recognition of the patients' flow in ED and how I could improve the necessary steps. (Figure 2)

1) Quality Improvement Project Flowchart of Fracture NOF patients

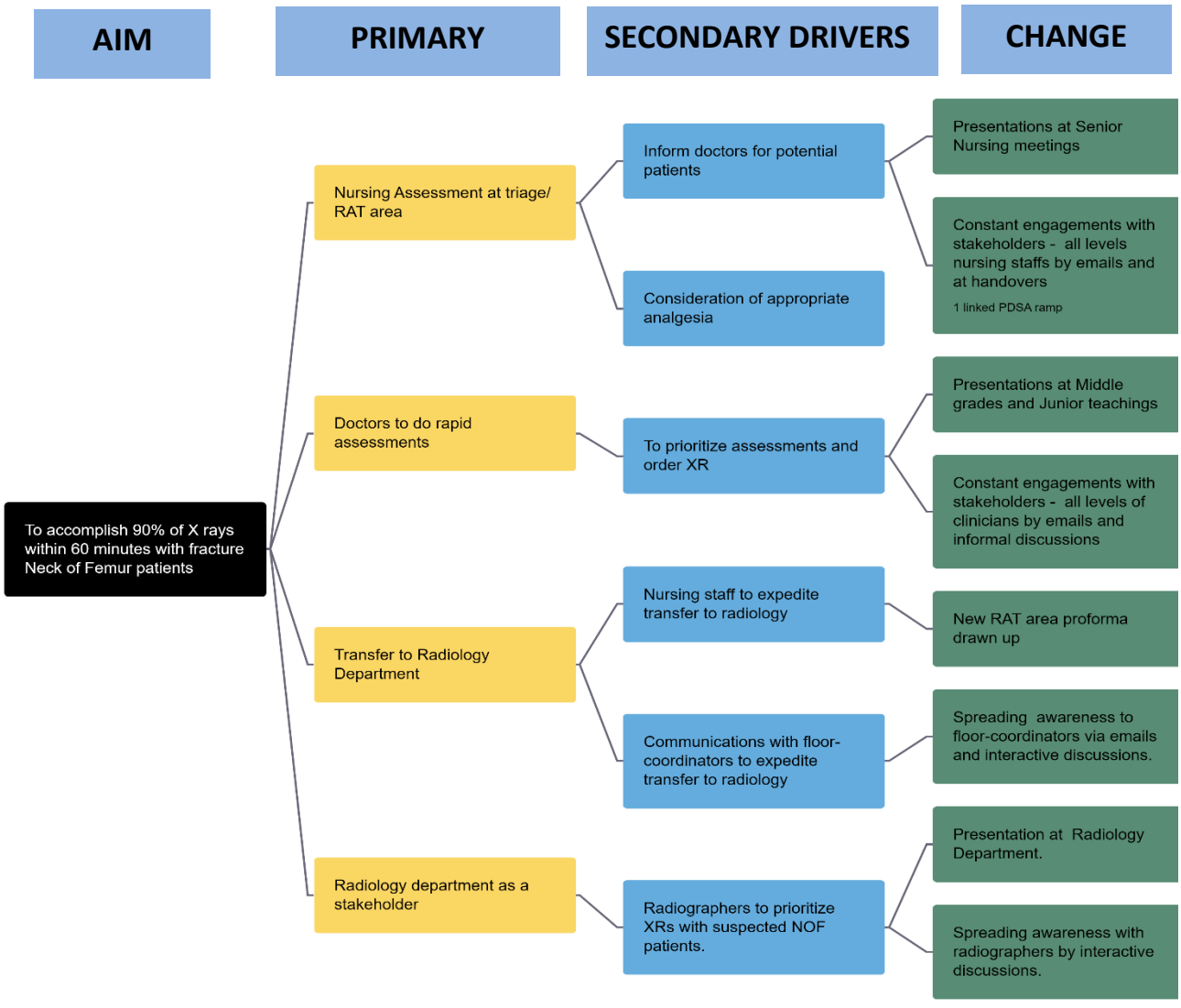


(Figure 2) QIP Flowchart

2) Drivers Diagram

Before starting the project, the Aim and Changes in Ideas were initially laid out in a driver diagram. A template was adapted from the Life in QI website. A driver diagram (Figure 3) provides a clear display of what are the "Drives - Primary and Secondary " which in turn contributes to the Changes in Ideas for completion of the project.

Primary drivers are the larger factors that will affect my goal whereas secondary drivers affect each of the primary drivers so that I could target specific areas that I will need to plan changes for.



(Figure 3) Drivers Diagram

3) SWOT Analysis

A SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis (Table 2) was another tool for me to understand the Strengths and Weaknesses in the context of achieving this QIP and then utilize the Opportunities to bring forward a positive change.

STRENGTHS	WEAKNESSES
• The unique setting of our ED with fully established RAT. • Committed participation of multi-disciplinary team members to improve patients care. • Patient-centered. • Not require specific tools and pieces of equipment for QIP. • Simple pathway. • No cost involved in the department.	• Difficulty in engaging a vast number of stakeholders with various busy working patterns. • Repeated changeover of doctors every 4 months is the norm for ED. • Drawbacks of Teletracking and portering.
OPPORTUNITIES	**THREATS**
• Improve the patient's experience. • The motivation for the clinicians, nurses, and radiographers of the importance of their roles of each and everyone in patients' care. • Clinical satisfaction.	• Various effects of the pandemic. • Difficulty to change some mindsets and anxieties, process of changes, for example, direct transfer from RAT to radiology. • Safety in process.

(Table 2) SWOT Analysis

4) PDSA cycle (Plan, Do, Study, Act)

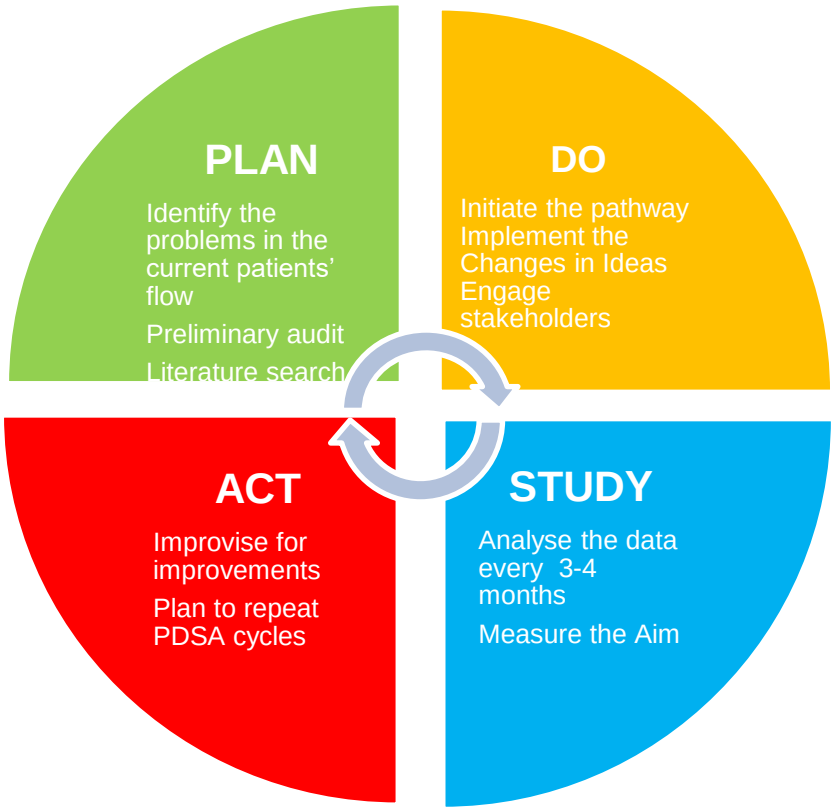
For further quality improvement methodology, I decided that a PDSA cycle - Plan, Do, Study, Act. (Figure 4) would be the most useful tool for my QIP.

With the clear vision of a PDSA cycle, I formulated:

1. Aim of the QIP.

2. Establishing Measures - Outcomes.

3. Initiating Changes in Ideas and choosing the right ones for improvements.



(Figure 4) PDSA cycle

Firstly, at the "PLAN" stage, I identified the problems and propose the changes.

Secondly, at the "DO" stage, I implemented the Changes in Ideas by various methods.

Thirdly, at the "STUDY" phase, I analysed the collected data, did the evaluation, and studied whether the changes I implemented were working or not.

Finally, at the "ACT" phase, I identified any modifications needed and planned for a new cycle of improvement.

For a vital step for this QIP to be successful, it is crucial involved parties are aware about constant changes happening. More crucial tasks are to recognize and tackle the hurdles as it evolves along the whole process.

1st PDSA Cycle (1 January 2020 – 30 June 2020)

I had a formal meeting with my educational supervisor and we discussed the proposed stages and changes in ideas of QIP for advice on 4th December 2019. Then, I emailed the initial proposed plan with a powerpoint presentation (Appendix 3) to the Clinical Director, my Educational Supervisor and the Audit Lead Consultant for approval.

I initiated the majority of the first two phases of **PLAN** and **DO** during January and February of 2020 by engagement with stakeholders - ED clinicians and ED nursing staffs by below interventions.

1) I gave a presentation at a Senior Management meeting with ED consultants and senior matrons to introduce the idea regarding the new quality improvement project, welcoming advice and approval.

2) I gave a presentation at a monthly Nursing Sisters Meeting since ED sisters are crucial in implementing my QIP as the front-liners at triage or RAT for initial contacts with paramedics. I also attended nursing daily handovers to spread information and awareness regarding QIP.

3) I delivered the formal teaching sessions at weekly middle-grades and junior doctor teachings, at handovers, and informal discussions on the shop floor.

4) To enhance the information to reach all ED staff, I emailed all ED staff covering main groups of stakeholders – the clinicians and the nursing staff and informal face-to-face discussions on the shop floor in the real timeframe to find out the difficulties or issues.

5) I ensured an engagement with another group of stakeholders – the Radiology Department, by arranging a QIP meeting with Radiology Lead Consultant and Lead Superintendent Radiographers. We all discussed the point of view from the aspects of the Radiology department. Everyone was willing to participate in the improvement of patients' care by prioritization of X-Rays for suspected fracture NOF patients.

Analysis of data for STUDY phase from March to June 2020, I have reviewed electronic clinical notes and radiological reports of 178 patients from CED portal with below data entry table (Table 3). The data were put into an excel format monthly and analysed with graphs for clear visualization.

Time	QIP FOR # NOF PATIENTS	Remarks
	Ambulance Arrival	
	Triage / RAT Bay	
	First obs and Analgesia	
	Assessment by Dr and ordered X ray	
	X ray request done	
	X ray done	
	X ray reviewed	

(Table 3) QIP Data entry

I faced a massive obstacle with the impact of the pandemic during March to June 2020. Every step of my QIP process was at a standstill and we all have to concentrate on

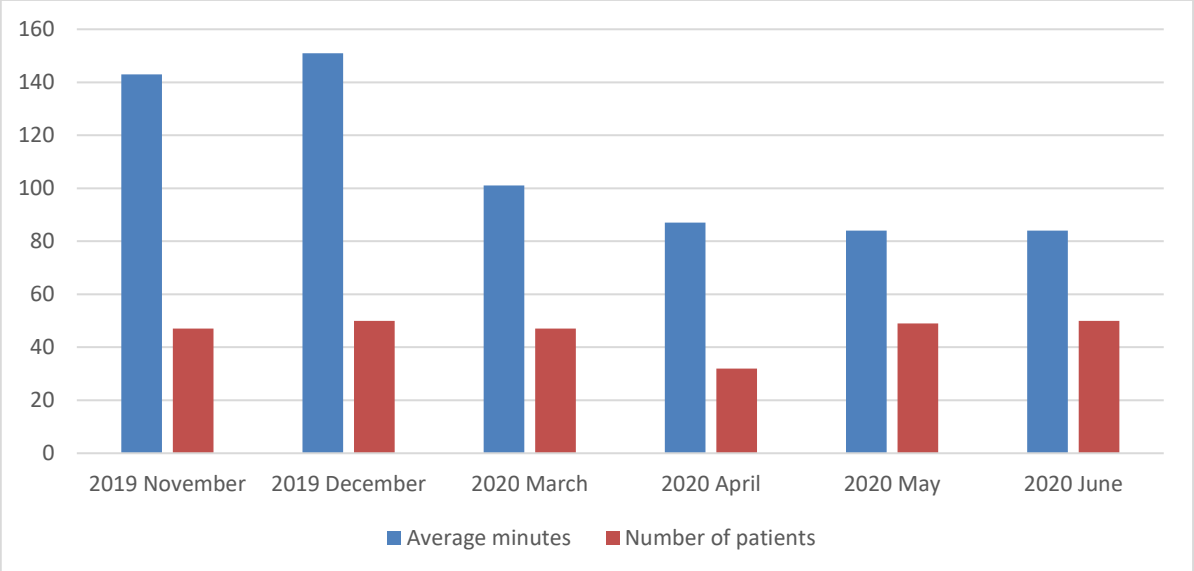
seriously ill patients in resuscitation areas. Another major setback for my QIP is our ED department RAT area had +allocated to paediatric patients during the first wave in April to June and as the Hot/ Covid Resuscitation area during the second wave of pandemic.

Results of 1st PDSA cycle

Our ED received the following number of patients with a diagnosis of confirmed fracture NOF – 47 in March, 32 in April and 49 in May, and 50 in June with a total of 178 patients.

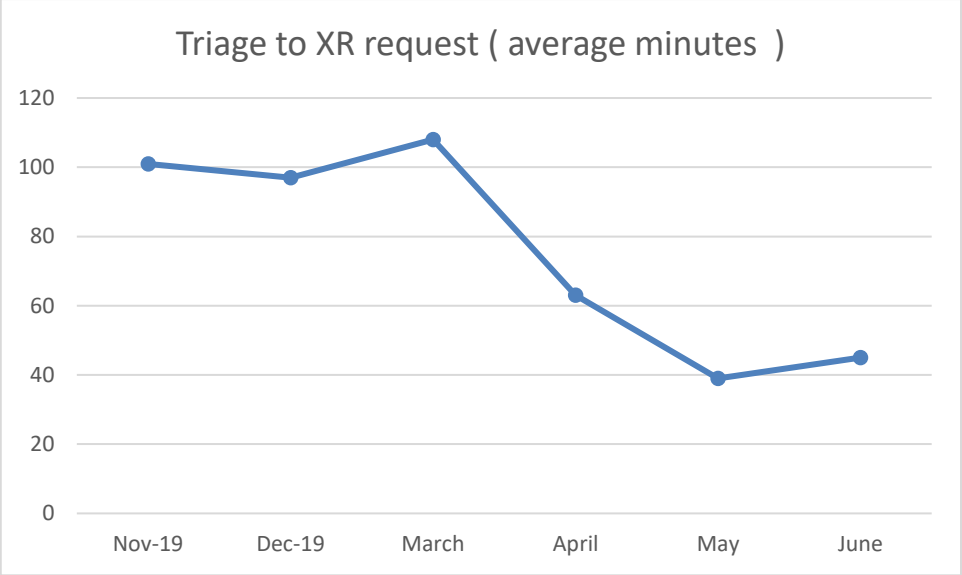
There was a significant reduction in time from arrival by ambulance to diagnostic X-ray to a mean value of 89 minutes which is a satisfactory 40% reduction compared with the preliminary QIP period data. (Graph 1)

For analysis for the primary aim: percentage of patients received the diagnostic X-ray within 60 minutes of arrival, it was 33% in April as the best result and in May was 25% and March and June was 21% and 20% respectively. Therefore, I could not achieve the primary aim in the 1st PDSA cycle.

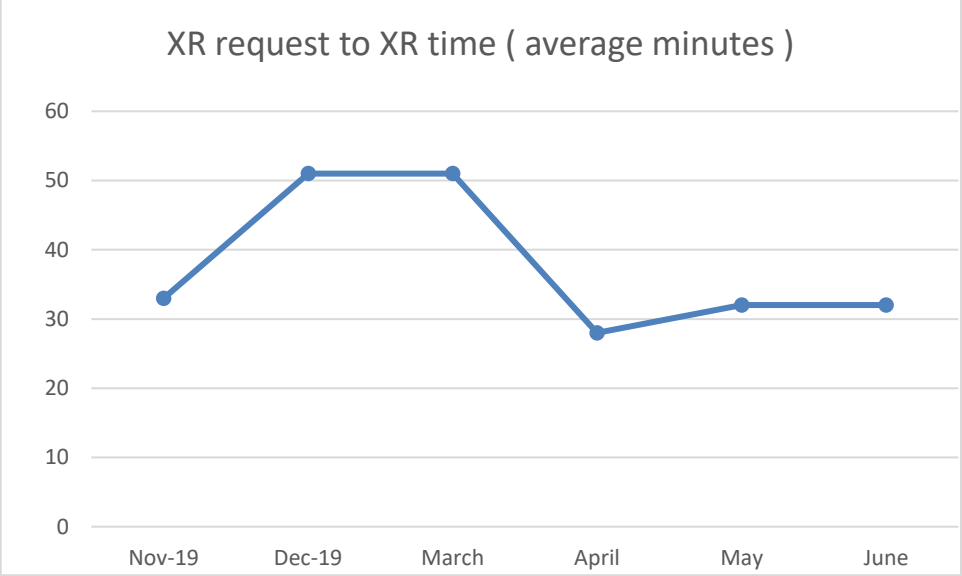


(Graph 1) 1st PDSA Cycle data

On further breakdown analysis, the mean value of the patients' arrival to X-rays requested and also X-rays being processed were significantly reduced.



(Graph 2) 1st PDSA Cycle data



(Graph 3) 1st PDSA Cycle data

During June 2020, the storms of the pandemic started to calm down and I sent emails to keep stakeholders updated. I planned for the 2nd PDSA cycle for 3 more months with further interventions to reach the primary aim and I also wanted to observe the effects of the pandemic on my QIP.

2nd PDSA Cycle (1 July 2020 – 30 September 2020)

During the 2nd PDSA cycle, I initiated the below interventions:

A) Engagement with stakeholders by:

1) Continued education and I sent a reminder email (Appendix 5) as our ED started to normalize with fewer Covid patients and the RAT area is functioning like before.

2) I presented at the Doctors Induction as August is the changeover time with many new doctors started at all levels. I anticipated that the changeover time could impact the ongoing QIP and hence proper dissemination of the information is crucial. With the interactive discussions, all new doctors were eager to participate and prioritize the potential patients from RAT.

B) Introduction of new Rapid Assessment and Treatment (RAT) area Proforma. (Appendix 7)

1) I had informal discussions with senior nursing staff and recognized their safety concerns regarding transferring directly from RAT to radiology instead of the traditional way of stop-over at the major area.

2) I proposed a new proforma based on a National Early Warning Score (NEWS) of patients to be added to the existing RAT proforma at the ED consultants and Senior Management Meeting for peer review and approval.

I received a variety of feedback for the RAT proforma modifications from consultants and senior management meeting. (Appendix 6)

The new RAT proforma is guiding the nursing staff and doctors at RAT that a patient with low NEWS (<2) can be transferred directly from RAT to radiology to expedite the diagnostic X-ray time.

3) The launch of the new RAT area proforma (Appendix7) occurred in August and I installed it in the A&E S drive to use readily. I had also made sure the printer-setting at RAT for double-sided format for the ease of printing the proforma.

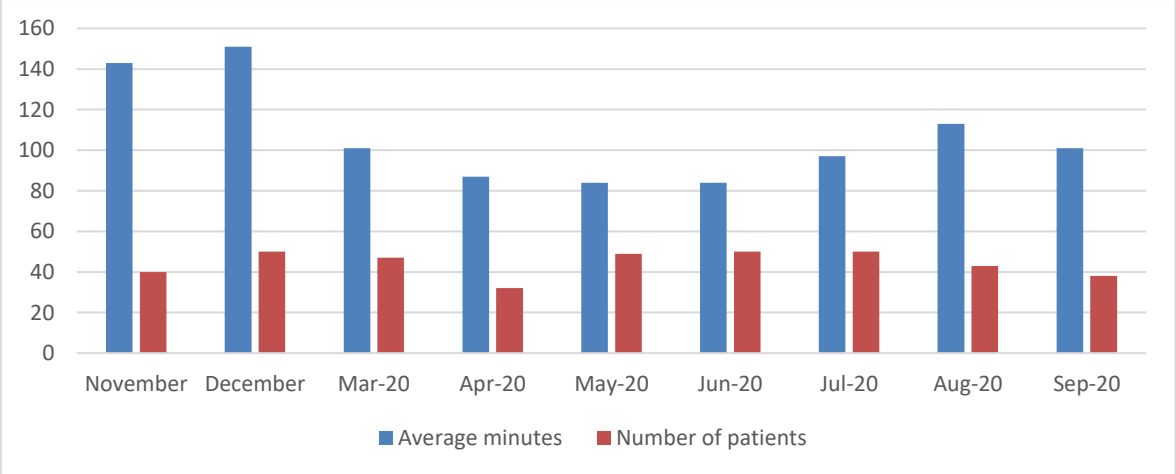
I had emailed the stakeholders with the results of the PDSA cycles to keep everyone abreast of the process. (Appendix 5)

Results of 2nd PDSA Cycle

During the 2nd PDSA cycle, I analysed 133 clinical notes: 52 in July, 43 in August and 38 in September. Diagnostic X-ray performed within 60 minutes were 25% in August at its highest and 20% and 23% in July and September respectively. Hence, I could not reach the primary aim in this cycle.

I noted the timescale to radiology from the patient's arrival is gradually in a rising trend at the beginning of July and had a transient small spike at August even though the monthly number of patients is fairly stable (see below graph compared with 1st PDSA cycle data).

The reason for that might due to the change-over period of new ED medical team recruits and busy time at ED. The trend went down in September after introduction of my new RAT Proforma.



(Graph 4) 2nd PDSA Cycle data

3rd PDSA Cycle (1 October 2020 – 30 November 2020)

During the 3rd PDSA cycle, I analysed 49 clinical notes in October and 45 in November.

I noted that the timeframe from the arrival to the radiology department is static instead of decreasing trend between 2nd and 3rd PDSA cycles, I planned to tackle this with another intervention: the floor-coordinators who play the essential role in liaising with porter services for patients' transport to and from the radiology by Teletracking.

I enhanced awareness of the QIP to the floor-coordinators by meeting individually with interactive discussions and emails. (Appendix5)

I also met with the Radiology Department and presented the results of the 1st and 2nd PDSA cycles as a reminder of the ongoing QIP and recognition of their hard work. (Appendix5)

We discussed some more feasible improvement ideas, possibly for the future, such as the proforma to process X-ray requests for pelvic X-rays to be done within 45 minutes and for the training of A&E senior nurses to get authorization for hip X-ray requests with appropriate radiology and awareness of ionizing radiation course.
I had done another stakeholder's awareness by presentations at weekly teachings and at doctors' changeover inductions in (Appendix 6) to keep the sustainability for coming months ahead.

Throughout the entire three PDSA cycles, the stakeholders were heavily engaged. I also had regular formal and informal meetings with our ED Royal College Speciality Tutor and my educational supervisor where we would discuss the stages of QIP for further interventions, changes in ideas, and approvals going forward.

Results of 3rd PDSA Cycle

I could not achieve the primary aim during the 3rd PDSA cycle. Even though, the mean value of time to diagnostic X-rays was reducing with all the above interventions, the percentage diagnostic X-rays received within 60 minutes were 18% in October and 24% at November 2020.

RESULTS

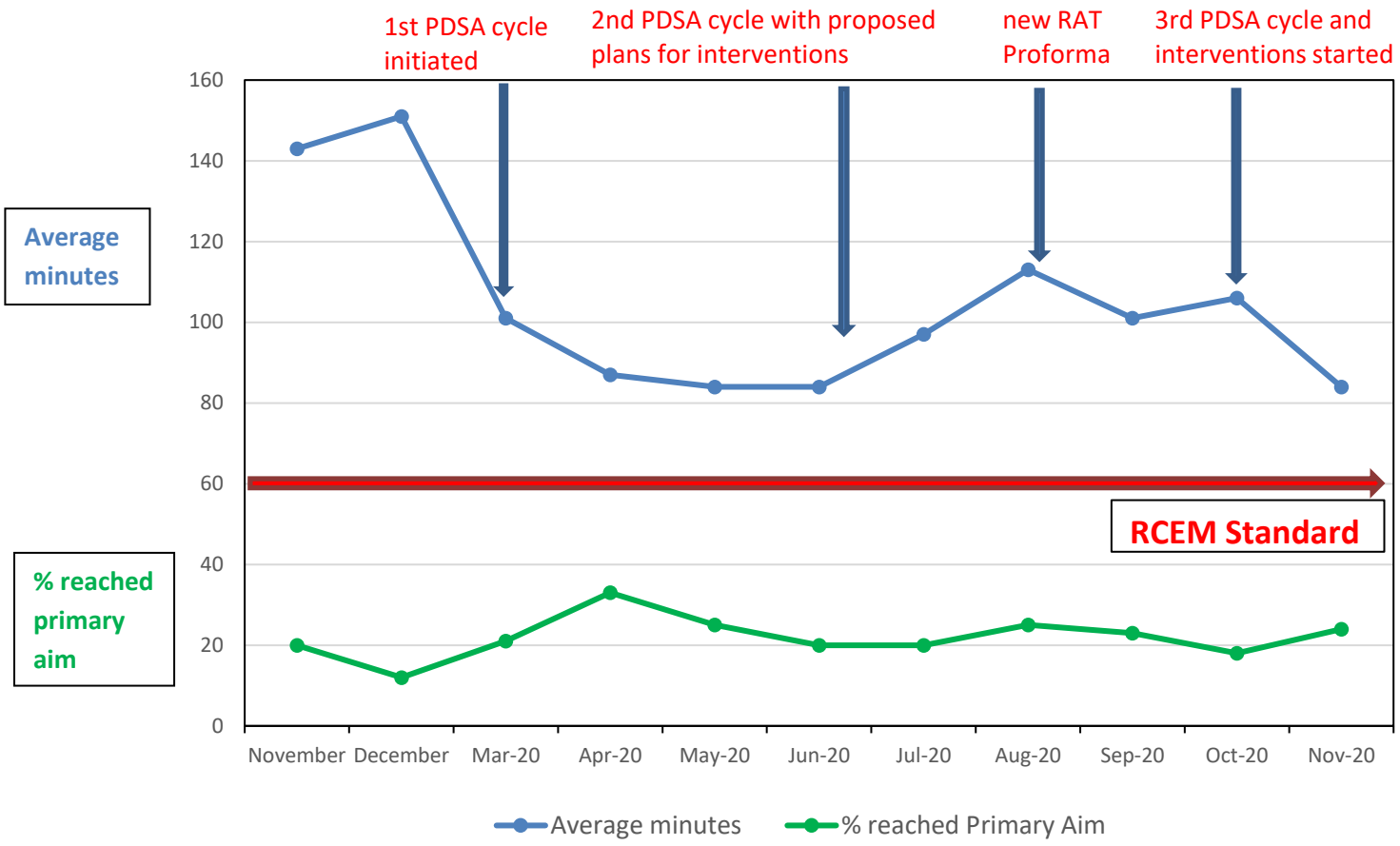
The Quality Improvement Project for the time to X-rays for the fracture NOF started on 1st March 2020. I collected data on monthly basis between 1 March to 30 November 2020, a total of 405 patients were diagnosed with fractured NOF at ED and admitted. I reviewed scanned notes, radiology images, and reports in the CED system. CED system gives the time at which the patients are seen, the time X-rays are requested and the time X-rays are processed. Our ED has a fairly stable number of confirmed fracture NOF patients approximately 45 patients per month.

During my QIP period, I could not fulfil the primary aim to produce the results reaching the RCEM Clinical Standards of time to diagnostic X-rays in 60 minutes from arrival in 90% of patients. This in many ways reflects the realities of emergency medicine and the challenges around bringing about change from various ever-changing circumstances.

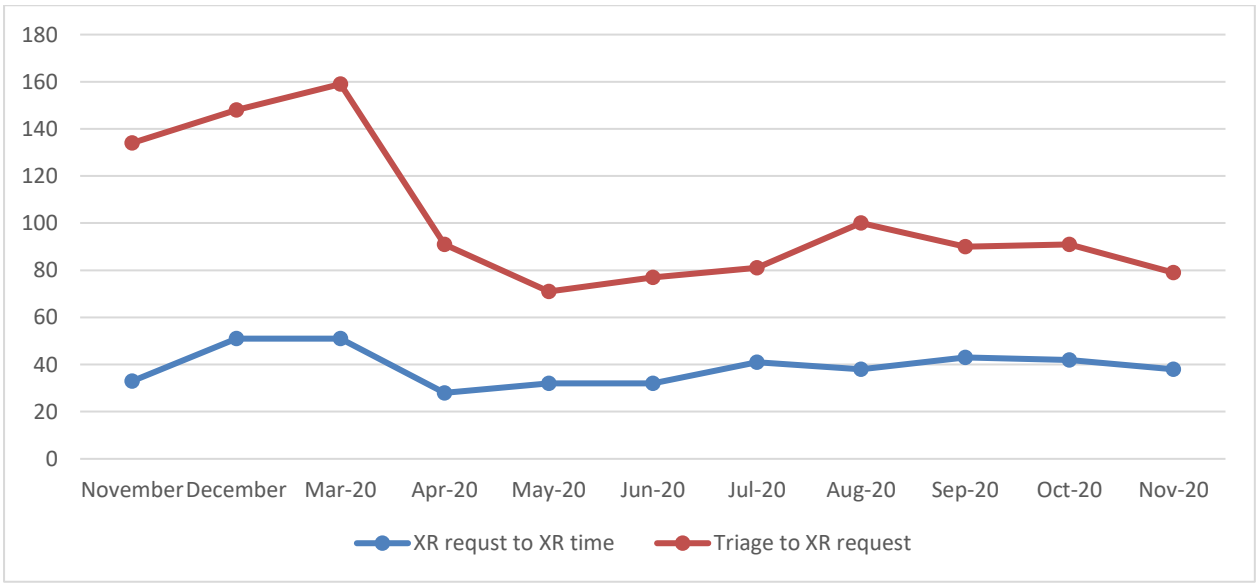
However, time to diagnostic X-ray from arrival improved from the mean value of 147 minutes in November and December of 2019 during the preliminary audit period to 95 minutes from March to December of 2020 during my QIP time.

On the further breakdown, the mean value of the time from triage to X-ray requested by doctors and the time from X-ray request to X-ray have shown the improvements throughout my QIP compared with the pre-QIP data.

The below Run Chart was plotted to see the overall effect throughout the project.



(Graph 5) Run Chart showing the changes throughout QIP period



(Graph 6) Combined 3 PDSA Cycles data

DISCUSSIONS

This was the first time I had attempted a quality improvement project and I was surprised by the length of time that it took to complete overall. There have been some logistical issues when trying to set up meetings with stakeholders. This was due to a mixture of my clinical and management rota commitments.

The positive impacts I noted while doing my QIP are as below:

- My QIP improves patients' flow, safety and care. Whilst I was educating the doctors and nursing staff to arrange fast track diagnostic X-rays along with the crucial role of analgesia, this in turn improves the awareness of NICE guidelines and RCEM Key Recommendations of analgesia. [3,4,7]
- The Southend ED has a designated RAT where initial assessments could be done which has a huge impact to arrange necessary diagnostic tests at the front-door.
- The radiology department is fully cooperative in prioritizing the pelvic X-rays for better patient care.
- Due to my engagement with the stakeholders by various means everyone was aware of my QIP and could improve the patients' comfort like titration of analgesia while awaiting definitive care.

There are a few barriers along the course:

- The ***Sustainability*** of change is key to the long-term success of the development of a QIP.
- From June to September, RAT was doing a trial run for a nurse-led area for initial observations, blood tests and then transferred to relevant areas of the department to be seen by doctors. The hurdle for my QIP was that as there were no doctors in RAT when nursing staff identified the potential NOF patients, they have to come to the major area to

look for doctors to request X-rays. Since every individual was very busy, that delayed the whole process until it was reverted to a joint doctor-nurse-led area.

- I faced quite a difficulty to convince the nursing staff at RAT to transfer stable patients directly to X-ray area due to a serious incident a few years ago. Finally, I figured out that the most effective way would be to introduce an Proforma for the RAT area with which everyone has to follow the safety guidelines.
- November and December 2020 was a difficult time for us with a combination of the second wave of pandemic and the winter surge of other respiratory illnesses and most of the days were in the major incident for the hospital for various reasons. Moreover, the RAT area has to be redesigned as the resuscitation bays for covid patients.
- Even though I am aware of the significance of the porter services for transport to and from radiology, the Trust operates on a centralized Teletracking system to order porters and ED does not have allocated porters, meaning verry limited effect could occur on this element of delay for patients.
- The only way to go around that hurdle was to educate and encourage the floor - coordinators to prioritize the request in Teletracking. I had tried that intervention and improvement was visible.

To ensure ***continuity*** of this QIP, I requested the audit lead to monitor with regular audits in the departmental audit programs by a clinician since I moved to another rotation. I also informed the department that I am happy to share the reflections from my own experiences.

LIMITATIONS

I could not emphasize enough the deleterious effects of the pandemic on my QIP which started just after 2 weeks of the initial phase in March 2020. All our priorities were switched to sick covid patients.

- During the pandemic, our ED department RAT area has to allocate to paediatric patients during the first wave of April to June 2020 and as the Hot/ Covid Resuscitation area during second wave. All patients were queued per triage categories.
- The impacts of Pandemic two times during the whole project meant the interruption of the speed of performance and our clinical priorities were constantly changing during those difficult times.
- As the nature of the Emergency Department, we have a very high turnover of staffing from both medical and nursing sides. The constant new or locum staff present a great deal of challenge for me to catch up with the compliance of the interventions of the project.
- The speed of the whole operating process of patients at the RAT area is fairly dependent on factors like the experience of the clinicians and the nursing staff, staffing levels, and timing or amount of workload of the day, which in turn reflect on the patients' journey to the radiology department.
- Implementing change in a busy ED and radiology department alike with different working rotas imposes many challenges. I have to try at all different times to meet with the maximum number of stakeholders and it was impossible to reach all face to face to do interactive discussions. Therefore, I have to heavily rely on reminder emails to updates of PDSA cycles and information. I recognized the emailing has a very limited impact on changing behaviours.
- There was a potential of selection bias on choosing the sample since the analysis of the data were the confirmed fracture NOF from electronic data rather than suspected.

- This QIP was a single centred study at a district general hospital.
- Therefore, clinical practice, settings, requirements in this ED may well be different to other centres with different capacities like smaller district general hospitals or trauma centres and the degree of changes may differ. Hence the external validity of this study was in question and should be tried in various methods in multiple centres.

REFLECTIONS

Although my QIP for fracture NOF patients appears to have had an overall positive effect on the patients' care, much further work is required to continue improvement. Regular audit cycles and further interventions should be performed to see if RCEM Clinical Standards could be met.

I have some ideas for improvements that could be done in different ways. I could not include those during my QIP period due to time constraints for my rotation period in Southend Hospital.

Below are some viable examples:

- Between ED and Radiology Department, a memorandum could draw up to target pelvic X-ray to complete within 45 minutes of requests.
- Between ED and orthopaedic department, a fast-track pathway for a direct referral to Trauma Coordinators after initial assessment and diagnostic X-ray as confirmed fracture NOF, for example, direct admission to orthopaedic care and trainings of nerve blocks to trauma-coordinators and junior orthopaedic doctors if necessary.
- Within ED, further steps like in-house training for the senior nurses to get approval to request pelvic X-rays after appropriate trainings, such as, IRMER (Ionising Radiation Medical Exposure Regulations) programme and lower limb injuries.
- Training opportunities: The administration of FIB training for doctors, ANPs, and trauma coordinators which could give a better long-lasting analgesic experience to patients and also the added benefits of reducing workload on nurses and doctors in prescribing and administrating repeat analgesia.

- A Business Case Planning: If ED has dedicated its own porters, even for multiple purposes, it might improve various services. I recognize this could be a business case of funding potentially and I understand this is being explored at present.
- Between ED and ambulance services, an innovative, however controversial, agreement of paramedics transferring the stable patients directly to radiology after discussion at triage. Though it is such a long haul, something to consider in the future and particularly at times of ambulance offload delay.
- An integrated fracture NOF fast-track pathway could be done if I have some more time which will require various departmental inputs from ED, orthopaedics and radiology, possibly, business planning department.

The implementation of a Quality Improvement Project is a challenging experience to handle various barriers and appreciate positive effects.

It allowed me to understand numerous quality improvement methods that were used to bring about a positive change to patient care relevant to our Emergency Department environment.

With these concepts and new skills I have learned, in my future professional life as an Emergency Medicine Consultant, I could be able to implement the actual clinical change for patients and also to guide the next generation of trainees through their quality improvement projects useful for their emergency departments.

SUMMARY

Overall there was an improvement in the time taken for the patients to diagnostic X-rays from arrival compared with the time taken before my quality improvement project even though it would not reach the primary aim of RCEM Clinical Standards of 90% diagnostic X-rays to be done within 60 minutes.

FUNDING

No funding was required from the ED during the implementation of this quality improvement project.

APPENDICES (1-6)

Appendix 1) The Quality Improvement Project Certificate

NHS
Mid and South Essex
NHS Foundation Trust

This is to certify that

Aleinmar Winthein

Participated in a quality improvement project entitled:

"A Quality Improvement Project to reduce time to diagnostic X-rays from arrival in fracture neck of femur patients"

December 2020

Through at least one round of repeating data collection to determine the effectiveness of any action taken to improve care.

[redacted]
Audit Facilitator
Audit Department
Thursday, 18 February 2021

Audit Department

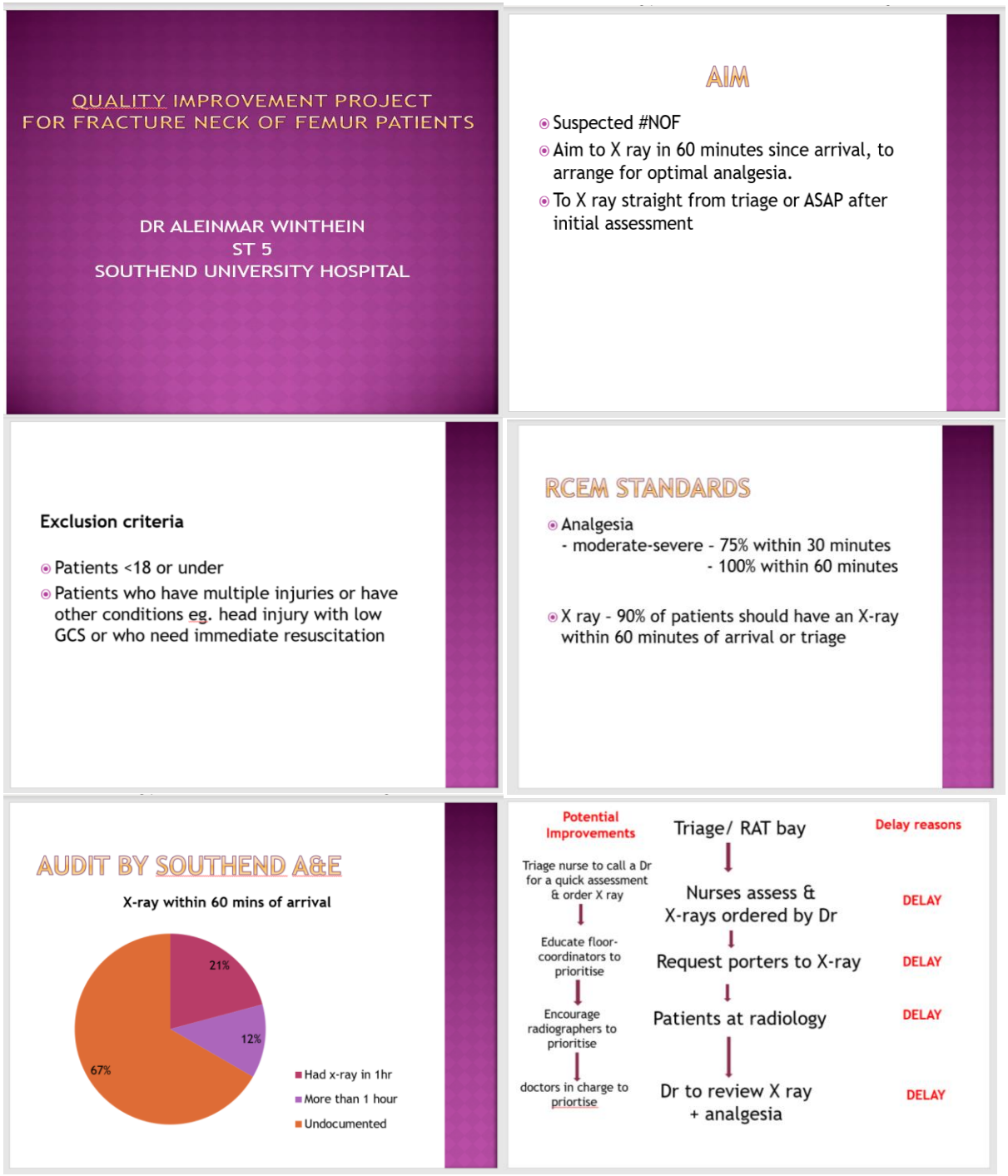
Appendix 2) Summery of meetings minutes and communication emails throughout the QIP

Date	Event	Summary of Minutes/Comments
December 2019	Proposal of Quality Improvement Project to Clinical Director, Audit Lead and Educational Supervisor and had been approved.	• Presentation of QIP (Appendix 3)
January - February 2020	Presentation at Radiology Department – attended by Lead Radiologist and Consultants, Lead Radiographer, Superintendent of radiology, Radiology Department registrars	• Presentation of QIP (Appendix 3) • Agreed to prioritize when A&E requested pelvic and hip X-rays. • Suggested for adequate analgesia prior to transfer to radiology.
January - February 2020	Meeting with A&E matrons	• Presentation of QIP (appendix 3) • Acknowledged to prioritize at RAT bay. • Importance of ordering porters by Teletracking to fast-track.
February 2020	Presentation at A&E sisters' meeting	• Raised awareness to inform doctors to prioritize for assessments and to order X-rays. • Importance of ordering porters by Teletracking and if unable to do, to inform floor-coordinators by phone.

3rd and 4th weeks of February 2020	Presentations at weekly middle-grades and junior doctors teaching and morning handovers in seminar room.	• Interactive discussions about real situations in RAT and encouraged to order X-rays after assessing ABCDE. • Junior doctors to discuss with seniors if any concerns, not to delay transfer.
February 2020	Emailed to all ED clinicians and ED nurses	• Attached presentation of QIP and plan for 1st PDSA (Appendix 5)
July 2020	Reminder email to all ED clinicians, ED nurses and radiology department	• Results of 1st PDSA cycle
August 2020	Presentation at new junior doctors induction	• Presentation of QIP + results of 1st PDSA
August 2020	Presentation at Consultants' & senior management meeting	• Results of 1st PDSA cycle • Proposal of new RAT proforma for approval • Feedback and advice for new proforma
August 2020	Presentation at A&E sisters' meeting	• Results of 1st PDSA cycle • Introduction of new RAT proforma & interactive discussion of transferring patients with NEWS equal or <2 to radiology from RAT
August 2020	Reminder email to all ED clinicians, ED nursing team, ED staffs	• Results of 1st PDSA cycle • Introduction of new RAT proforma

October 2020	Discussion at Radiology Department	• Results of 2nd PDSA cycle • Plans for 3rd PDSA and feasibility of further interventions – training of senior nurses to order X-rays.
October 2020	Reminder email to ED floor coordinators	• Meeting with each and every one on the floor and raised the awareness.
December 2020	Presentation at new junior doctors induction	• Results of PDSAs and reminder for sustainability.
December 2020	Presentation at middle-grades teaching	• Results of PDSAs and reminder for sustainability.

Appendix 3) The proposed Quality Improvement Project presentation



Time	QIP FOR # NOF PATIENTS	Remarks
	Ambulance Arrival	
	Triage / RAT Bay	
	First obs and Analgesia	
	Assessment by Dr and ordered X ray	
	X ray request done	
	X ray done	
	X ray reviewed	

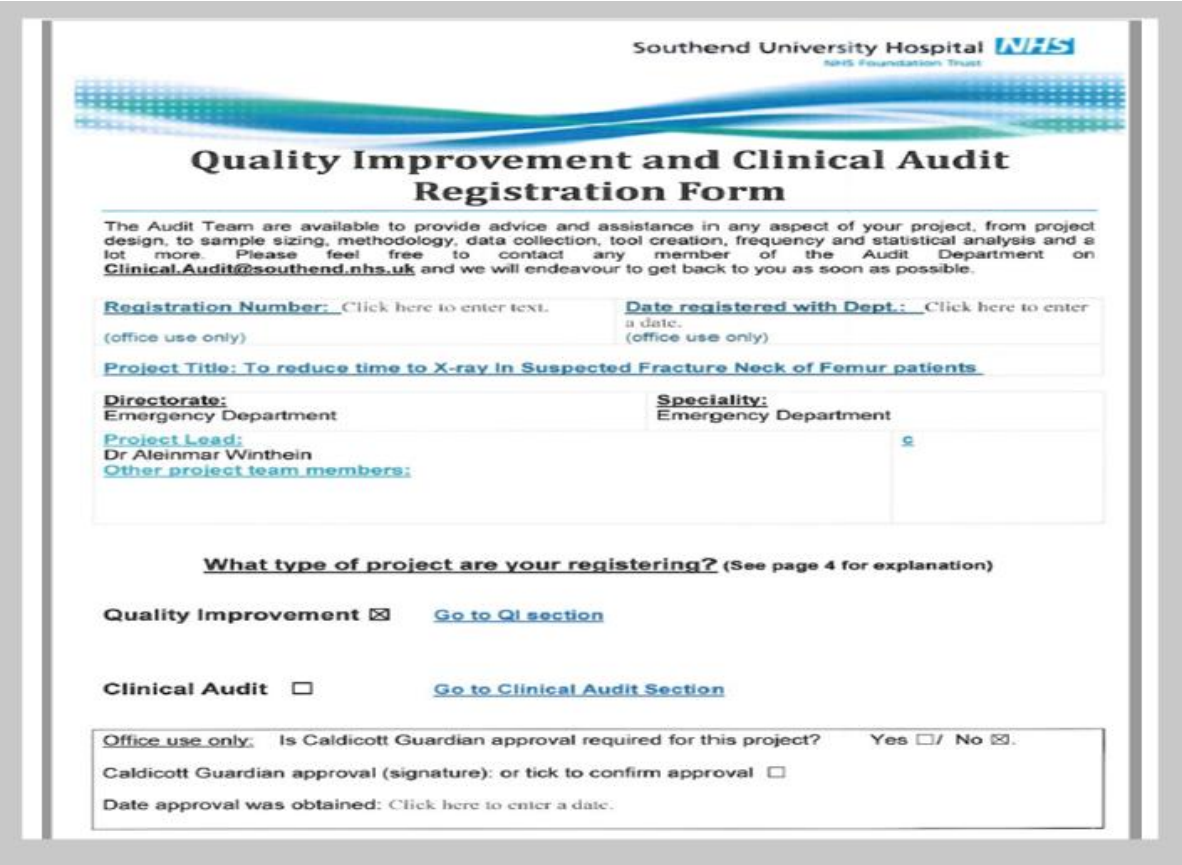
PLANS

- Plan to ASAP - on early new year.
- Audit at the end of every month.
- Reassess (PDSA) at end of every month for 3-4months.

PLANS - FOR INITIAL 2 WEEKS

- Meeting with AE dept leads (ES/ CD) and nursing - matrons/ NICs
- Meeting with department head of radiology + lead radiographer
- Presentation at A&E department consultants' meeting for final input
- After all in agreements with above department leads -
  - presentations in handover meetings - for both nurses + clinicians daily for one week
  - reinforcement in teachings - MGs + SHOs weekly - 2 weeks

Appendix 4) QIP registration to Clinical Audit Department



Southend University Hospital NHS
NHS Foundation Trust

Quality Improvement and Clinical Audit Registration Form

The Audit Team are available to provide advice and assistance in any aspect of your project, from project design, to sample sizing, methodology, data collection, tool creation, frequency and statistical analysis and a lot more. Please feel free to contact any member of the Audit Department on **Clinical.Audit@southend.nhs.uk** and we will endeavour to get back to you as soon as possible.

Registration Number: Click here to enter text. (office use only)	**Date registered with Dept.:** Click here to enter a date. (office use only)
Project Title: To reduce time to X-ray In Suspected Fracture Neck of Femur patients	
Directorate: Emergency Department	**Speciality:** Emergency Department
Project Lead: Dr Aleinmar Winthein **Other project team members:**	c

What type of project are your registering? (See page 4 for explanation)

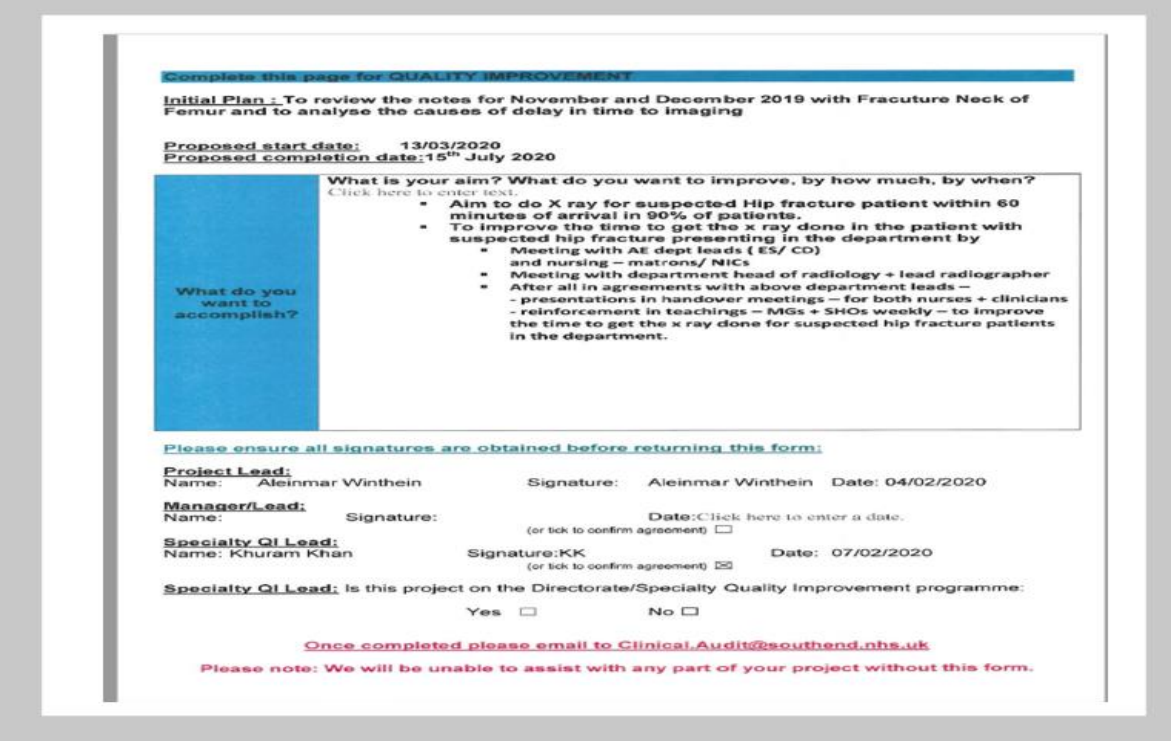
Quality Improvement ☒ Go to QI section

Clinical Audit ☐ Go to Clinical Audit Section

Office use only: Is Caldicott Guardian approval required for this project? Yes ☐/ No ☒.

Caldicott Guardian approval (signature): or tick to confirm approval ☐

Date approval was obtained: Click here to enter a date.



Complete this page for QUALITY IMPROVEMENT

Initial Plan : To review the notes for November and December 2019 with Fracuture Neck of Femur and to analyse the causes of delay in time to imaging

Proposed start date: 13/03/2020
Proposed completion date: 15th July 2020

What do you want to accomplish?	What is your aim? What do you want to improve, by how much, by when? Click here to enter text. ▪ **Aim to do X ray for suspected Hip fracture patient within 60 minutes of arrival in 90% of patients.** ▪ **To improve the time to get the x ray done in the patient with suspected hip fracture presenting in the department by** ▪ **Meeting with AE dept leads (ES/ CD) and nursing – matrons/ NICs** ▪ **Meeting with department head of radiology + lead radiographer** ▪ **After all in agreements with above department leads –** **- presentations in handover meetings – for both nurses + clinicians** **- reinforcement in teachings – MGs + SHOs weekly – to improve the time to get the x ray done for suspected hip fracture patients in the department.**

Please ensure all signatures are obtained before returning this form:

Project Lead:
Name: Aleinmar Winthein Signature: Aleinmar Winthein Date: 04/02/2020

Manager/Lead:
Name: Signature: Date: Click here to enter a date.
(or tick to confirm agreement) ☐

Specialty QI Lead:
Name: Khuram Khan Signature: KK Date: 07/02/2020
(or tick to confirm agreement) ☒

Specialty QI Lead: Is this project on the Directorate/Specialty Quality Improvement programme:

Yes ☐ No ☐

Once completed please email to Clinical.Audit@southend.nhs.uk

Please note: We will be unable to assist with any part of your project without this form.

Appendix 5) Scheduled Meetings and Email Communications with stakeholders

A) December 2019 - Proposal of Quality Improvement Project to Clinical Director, Audit Lead and Educational Supervisor

From: WinThein, Aleinmar
Sent: 04 December 2019 14:57
To: [redacted]; Howard, Caroline; [redacted]
Subject: Proposed plan for QIP # NOF

Dear All,

Please see the attached proposed QIP and if possible and everyone in agreement, I would like to start in new year.

Regards, Aleinmar

From: Howard, Caroline
Sent: 08 December 2019 13:37
To: WinThein, Aleinmar; [redacted]
Subject: RE: Proposed plan for QIP # NOF

Hi Aleinmar

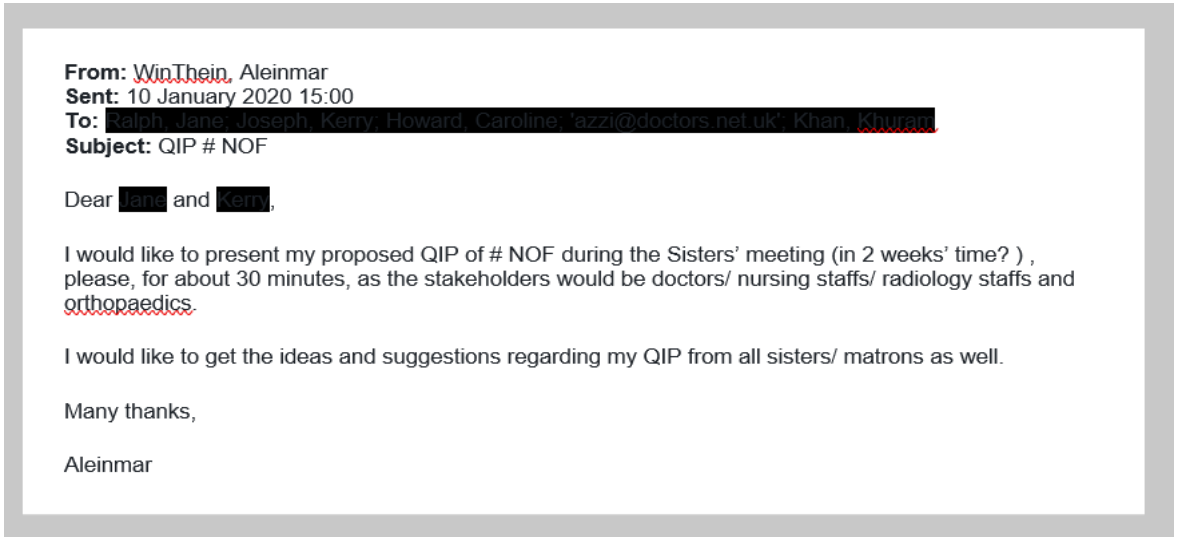
No objections from me

I would advise reading the QIP marking scheme and advice (attached for ease) prior to starting to think about the design etc and what actions to take as in the end you will get more marks if you know of some of the positives early on

Caroline

Dr Caroline Howard

B) Janauary & February 2020 – Communication with Stakeholders prior to commencement of 1st PDSA



From: WinThein, Aleinmar
Sent: 10 January 2020 15:00
To: [redacted]
Subject: QIP # NOF

Dear [redacted] and [redacted],

I would like to present my proposed QIP of # NOF during the Sisters' meeting (in 2 weeks' time?) , please, for about 30 minutes, as the stakeholders would be doctors/ nursing staffs/ radiology staffs and orthopaedics.

I would like to get the ideas and suggestions regarding my QIP from all sisters/ matrons as well.

Many thanks,

Aleinmar

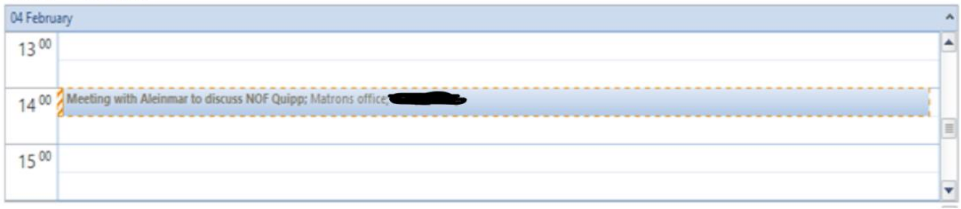
Meeting with Aleinmar to discuss NOF Quipp

[redacted]

Required: [redacted]; WinThein, Aleinmar

When: 04 February 2020 14:00-14:30 ~~(04 February 2020 13:30-14:00)~~

Location: Matrons office



QIP for Suspected # NOF patients - for the time of patients' arrival to X ray

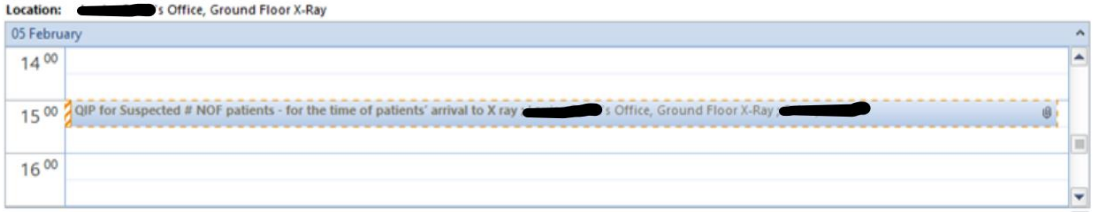
[redacted] on behalf of [redacted]

Required: [redacted] WinThein, Aleinmar

Optional: [redacted]

When: 05 February 2020 15:00-15:30

Location: [redacted] s Office, Ground Floor X-Ray



From: WinThein, Aleinmar
Sent: 13 February 2020 22:46
To: ED Doctors; ED Consultants; a&e Sisters
Subject: QIP for # NOF patient

Dear All,

I would like to do QIP for # NOF patients started from 1st March for 6 months.

Please have a look at the attached presentation.

I am doing the presentations at our handovers at 08:00 / 16:00, for the awareness of the process and will do presentations at MG and SHOs' teachings for 2 weeks prior to 1st March.

Basically, what I would like to request is that – as soon as NIC or RAT –sister, received ambulance hand-over with " #NOF", they will ask one of doctors to request XR to speed up the process and when the patients return from XR, will to inform doctor-in-charge, so, we could arrange FIB – ASAP.

Should you have any questions, please do not hesitate to email me and I would like to have suggestions as well.

Many thanks and regards,

Aleinmar

C) August 2020 - Presentations of results of 1st PDSA and communication with stakeholders

MINUTES – ED CONSULTANT MEETING
17th August 2020
ED Seminar Room/Starleaf

Present: Dr [redacted]
Dr [redacted]
Dr [redacted]
Dr [redacted]
[redacted]
[redacted]
Aleinmar Winthein (AW)

1. Apologies

   Apologies received from [redacted]

2. Minutes from last meeting 10th July 2020

   - Agreed.

3. Action Log

   [redacted]

4. AW presented QIP – Suspected fractured NOF waiting times for x-rays.

Date	Resus moulage 08.15-09.00	Seminar room 11.30-12.15	12.15-13.00
12 Aug	Trauma- Primary survey	ACS - [redacted]	QIP briefing - Aleinmar (15 min) [redacted] ABG teaching

Southend University Hospital NHS
NHS Foundation Trust

ED Sisters Meeting

20th August 2020, ED Seminar room

1.0	Apologies – [redacted] Attendees- [redacted]
2.0	Minutes from last meeting
3.0	Matters arising Aleinmar Winthein coming to update about #NOF pathway SOP

From: WinThein, Aleinmar
Sent: 22 August 2020 12:07
To: ED Consultants; ED Doctors; a&e Staff
Subject: QIP for Suspected # NOF

Dear All,

I would like to present QIP which I started on March 2020, regarding " Suspected Fracture NOF patients to process XR within 60 minutes from arrival" . Please see the attached slides.

I combined the data for 1st cycle and there are some improvement in time to XR to 40%, but, not in target range yet.

For my second PDSA cycle, I added on the SOP for RAT area as below -

For Suspected NOF: patients whom met the criteria of low NEWS, to expedite XR from RAT directly.

(please see the second page of RAT sheet, which will finalise and available on S drive).

I would like to request to everyone, please–

1) order XRs when the triage nurse/ NIC inform that the patients has suspected NOF

2) refer to RAT proforma who could go directly to XR and should you any concerns, discuss with a senior doctor on the floor

3) prescribe analgesia for patients before they could get FIB.

Thank you and regards,

Aleinmar

D) October 2020 – Engagement with Stakeholders post 2nd PDSA Cycle

From: WinThein, Aleinmar
Sent: 06 October 2020 13:52
To: [redacted]
Subject: QIP for NOF# from A&E

Dear [redacted] and [redacted],

This is Aleinmar Winthein, ST6, A&E who is doing the QIP for # NOF.

I would like to take a few minutes of your time and present about the progress of the project I am doing **"Quality improvement project for Fracture Neck of Femur patients".**

Now, I finished 2nd PDSA cycle and analyzed data, and please see the below attached presentation.

The time to Radiology for XRs in suspected # NOF patients are improved since March 2020, however, we are not in the target range of 60 minutes yet.

I am welcoming to all advices and feedbacks, please.

Now, for 3rd cycle, I reckon that the emphasizing on the floor-coordinators, who are in the crucial roles in arranging patients to transfer radiology by requesting porters in teletracking.

I have been in contact with them and advising to request the transport to radiology ASAP when they receive a XR request card of pelvis and hip XRs.

Thank you for your time.

Many thanks and regards,

Aleinmar

From: WinThein, Aleinmar
Sent: 19 October 2020 15:09
To: [redacted]
Cc: [redacted]
Subject: Fracture NOF - Quality Improvement Project

Dear All,

I would like to take a few minutes of your time and explain the project I am doing "Quality improvement project for Fracture Neck of Femur patients".

To improve the patients' care for suspected # NOF patients per Royal College of Emergency Guidelines, " 90% of patients should have an X-ray within 60 minutes of arrival or triage".
I have been doing this QIP since March 2020 by analyzing data, discussions with stakeholders like doctors, nurses, radiology department and implementing some changes where we could improve our care.
After 2nd PDSA cycle and analyzed data, I found out that the emphasizing on the floor-coordinators, who are in the crucial roles in arranging patients to transfer radiology by requesting porters in teletracking.
I appreciate that you all are so busy all the time with one million jobs in front of you.
However, I would like to request that when you see the blue card (XR request for hip and pelvis on the card), could you please prioritize that patient as soon as possible?
I attached the presentation regarding QIP for your reference and I would like to take some of your time to explain the process as well, please.

Many thanks and regards,
Aleinmar

Appendix 6) Feedbacks from Scheduled Meetings, Presentations & Teachings

EMERGENCY MEDICINE TEACHING FEEDBACK

DATE: 12.08.2020

1= Very poor 2= poor 3= adequate 4= good 5= great

Session title and Speaker	Learning /Content (1-5)	Delivery of session (1-5)	Usefulness (1-5)	Comments or further suggestions for improvement
				•
Dr Aleinmar Winthein – QIP Briefing	4.5	4.25	4.75	• Interactive. • Good learning points RE ordering x-rays. • Clear presentation on slides.
				•

From: Howard, Caroline
Sent: 19 August 2020 14:29
To: WinThein, Aleinmar
Subject: QIP

Hi Aleinmar

Thanks for presenting at the consultant meeting

I think we did get to a final agreement for the RAT form- if you could liaise with [redacted] now to get that done

There was a typo with some spelling in the final line as well so please check that.

It will need circulating of course prior to putting into use –especially as not all the consultants were at the meeting

Thanks

Caroline

From: Azzi, Antoine
Sent: 17 August 2020 16:11
To: WinThein, Aleinmar; [redacted]
Cc: [redacted]
Subject: RE: QIP # NOF

Thank you Aleinmar for joining our ED consultant meeting .

It was a good presentation and plan for your second QIP cycle. It is better for the patient with # nof journey.

You did listen to the advice we gave you regarding the small changes .

You asked to join the sister's meeting which is very important and thoughtful of you..

I believe the next step would be for you to meet with Dr [redacted] and finalise the RAT SOP/preform.

KR

Antoine

From: [redacted]
Sent: 12 August 2020 17:42
To: WinThein, Aleinmar
Subject: RE: QIP # NOF

Hi Aleinmar

Thank you for your presentation today. I thought you had a very clear concept of what you wanted to achieve with your QIP.

The points that crossed my mind were to update the PDSA cycle with discussions you've had with radiology regarding expediting pelvis/hip Xrays over limb imaging. The other point was to avoid sending Oxygen sensitive COPD patients or retainers from RAT area to X-ray without pit stopping in Majors. The third and last advice would be to put a prompt in the RAT sheet to provide analgesia eg. Consider Oramorph, Codydramol, Penthrox since better analgesia results in better imaging and you have a comfortable patient too.

I wish you all the best for your QIP Aleinmar. Well done so far.

[redacted]

From: [redacted]
Sent: 17 August 2020 16:16
To: [redacted]
Cc: [redacted]
Subject: RE: QIP # NOF

I agree with what Dr [redacted] has said. Do add the little tick boxes for stuff like Analgesia etc. pertaining to your QIP. Good work and God speed!

Regards

[redacted]

From: [redacted]
Sent: 12 August 2020 18:05
To: [redacted]
Cc: [redacted]
Subject: RE: QIP # NOF

Dear Aleinmar,

You are on the right tract. I will suggest:

1) On the RAT sheet to put discriminator: NOF patients to be fast tracked for X ray ; Decision maker who authorized these patient to go for this X ray.

2) Outcome: Like Getting X Ray quicker you got the definitive analgesia-FIB quicker to these patients .Measure this randomly for a small number of patients. You need to prove that getting X ray quickly have benefited your' s patient clinical care. Also it improved the ED traffic as these patients were referred quickly to the ortho for definitive management.

3) Thirdly: If the flow coordinator when they book the X Ray Porter on the tele tracking have clinical authorization to FastTrack these patients for X ray etc .

4) No need to add page 2 in the RAT sheet as - this will reciprocate the work, we have to print out double sided paper, possibility of human errors and finally less patients having the X ray in time. Until some responsible decision maker- whose name is mentioned in the RAT sheet- that made the decision- patients can go for the X ray. You already have good enough exclusion criteria in the slide 4 of your QIP talk. Decision maker can be sister lead or doctor in the RAT etc. This is also applicable to any patient in the Department etc. anyway.

5) Being future optimistic: you can research on the subject that lateral X ray for the NOF patients gives you no advantage clinically. This may need educating the ortho doctors etc. Lateral helps for Femur # but unlikely for the neck. Doing Pelvis X with the portable machine in our Department can cut down the time drastically as intervention. In your QIP the delays were to get Porters etc but the radiology team on the other hand were quite quick to do the X rays .Also having Dedicated Porters in the ED will cut down on journey time as compared to getting porters from the hospital central pool to this particular job.

Open for further discussion. And thanks again for doing the QIP and improving the patient's clinical care in our Department.

Thanks,

[redacted]

EMERGENCY MEDICINE MIDDLE GRADE TEACHING FEEDBACK

DATE: 10.12.2020 **Chair: Dr [redacted]**

1= Very poor 2= poor 3= adequate 4= good 5= great

Session title and Speaker	Learning /Content (1-5)	Delivery of session (1-5)	Usefulness (1-5)	Comments or further suggestions for improvement
				•
Dr Aleinmar Winthein – QIP Presentation	4.7	4.6	4.6	• Good presentation and quality information passed on. • Good learning points. • Useful. • Very beneficial for the attached topics. • Good. • Valuable presentation.

EM FY2 INDUCTION FEEDBACK 1= Very poor 2= poor 3= adequate 4= good 5= great-

Induction – Wednesday 02nd December – Friday 04th December

Session title and Speaker	Learning /Content (1-5)	Delivery of session (1-5)	Usefulness (1-5)	Comments or further suggestions for improvement
Qip Dr Aleinmar Winthein	4.5	5	5	• Highlighted multiple delays to imaging.

Southend Emergency Department

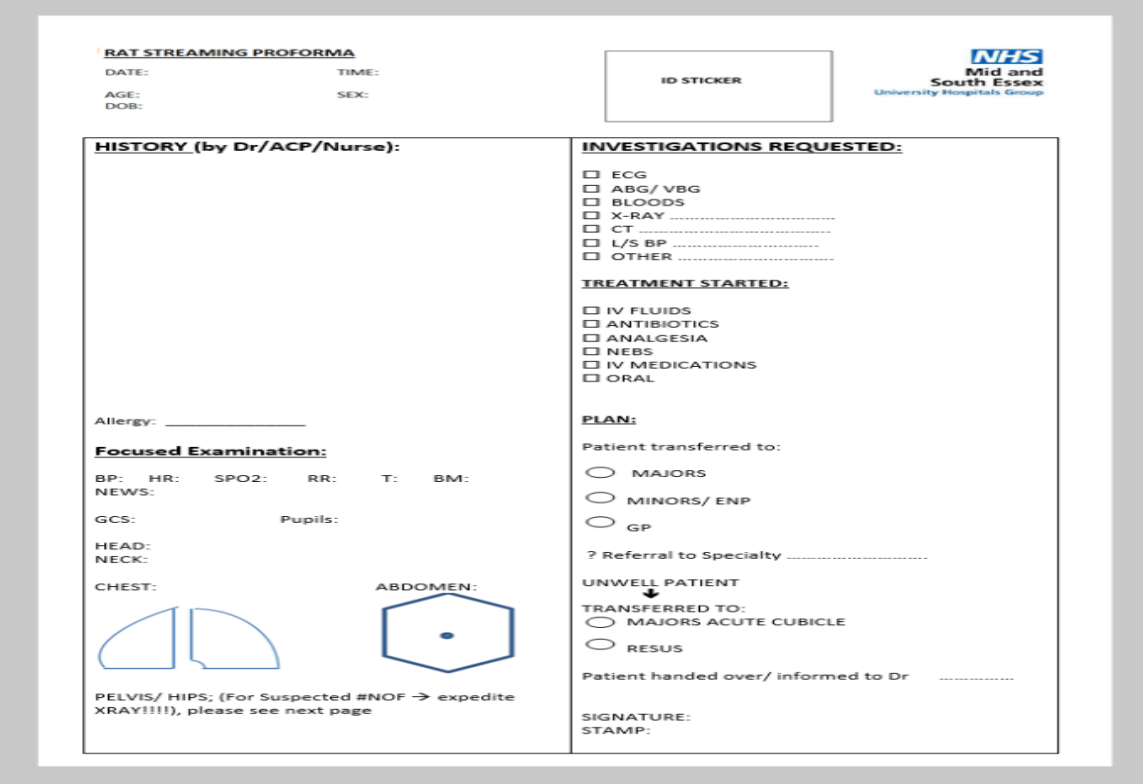
This is to certify that Dr Aleinmar Winthein participated in the Induction of new Emergency department doctors on 02nd - 04th December 2020.

Topics: "Time to x-ray for suspected fracture neck of femur patients"

Dr [redacted]

Emergency Department Teaching & Training Lead

Appendix 7. Rapid Assessment and Treatment Proforma



RAT STREAMING PROFORMA

DATE: TIME:

AGE: SEX:
DOB:

ID STICKER

NHS Mid and South Essex University Hospitals Group

HISTORY (by Dr/ACP/Nurse):

Allergy: _____

Focused Examination:

BP: HR: SPO2: RR: T: BM:
NEWS:

GCS: Pupils:

HEAD:
NECK:

CHEST: ABDOMEN:

PELVIS/ HIPS; (For Suspected #NOF → expedite XRAY!!!!), please see next page

INVESTIGATIONS REQUESTED:

- ☐ ECG
- ☐ ABG/ VBG
- ☐ BLOODS
- ☐ X-RAY .....
- ☐ CT .....
- ☐ L/S BP .....
- ☐ OTHER .....

TREATMENT STARTED:

- ☐ IV FLUIDS
- ☐ ANTIBIOTICS
- ☐ ANALGESIA
- ☐ NEBS
- ☐ IV MEDICATIONS
- ☐ ORAL

PLAN:

Patient transferred to:

- ◯ MAJORS
- ◯ MINORS/ ENP
- ◯ GP

? Referral to Specialty .....

UNWELL PATIENT
↓
TRANSFERRED TO:

- ◯ MAJORS ACUTE CUBICLE
- ◯ RESUS

Patient handed over/ informed to Dr .....

SIGNATURE:
STAMP:

FOR PATIENTS WITH SUSPECTED FRACTURE NOF:

A – MAINTAINING OWN AIRWAY

B – RR: 12 – 24/MINUTE

SATURATION: 94 – 95% FOR NON-COPD PATIENTS

- 88-92% FOR COPD PATIENTS

C – HR: 51-110/MINUTE

BP: SYSTOLIC: 101-219

D – GCS – 15 OR NORMAL GCS FOR PATIENTS (WITH DEMENTIA/ ALZHEIMER)

IF THE PATIENTS WHO MEET THE ABOVE CRITERIA, XRAYS SHOULD BE ORDERED AND IMAGING SHOULD BE PERFORMED DIRECTLY FROM THE RAT AREA.

N.B: IF THERE IS NO AVAILABLE BED SPACES IN MAJORS, KINDLY ENSURE THAT THERE IS A SPACE IN RAT AREA UPON COMPLETION OF XRAY.

REFERENCES

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