ANNUAL DIVISION QUALITY COMMITTEE REPORT

DIVISION: ORTHOPAEDIC SURGERY **DIVISION HEAD:** DR. STEVE PAPP

Please describe your Divisional performance over the last 12 months as it contributed to support the hospital in achieving its strategy. Please include a high-level description of the work that your department did to support on-going quality activities and initiatives you are leading. Where possible incorporate objective corporate performance measurements. (500 words).

The Division of Orthopaedic Surgery continues to strive for world class patient care, with Patient Safety and Quality Improvement at the forefront in 2023.

During the 2023 year, we have been able to provide surgeons in each Clinical Practice Unit (CPU) with their performance metrics relating to primary elective procedures performed. We worked closely with Health Records and Data Warehouse at The Ottawa Hospital (TOH) and affiliated campuses including Kemptville District Hospital and Hawkesbury General Hospital to ensure we obtained all cases. We will continue to provide these performance metrics annually, as a way to track progress and flag potential problem areas. The following variables were provided for each surgeon for their elective primary cases:

- 7-day post-operative Emergency Department visits
- Deep infection rate
- 30- and 90-day post-operative readmission rates
- Revision and reoperation rate

For one of our largest CPUs, the hip and knee arthroplasty group, the overall performance metric results are below as follows:

	Index Cases	ED Visits (#)	ED Visits (%)	Joint Revisions (#)	Joint Revisions (%)	Infection (#)	Infection (%)	30D ReAdmit (#)	30D ReAdmit (%)	31to90D ReAdmit (#)	31to90D ReAdmit (%)
OVERALL	**976**	**51**	**6.4**	**6**	**1.1**	**19**	**2.3**	**32**	**3.6**	**15**	**1.4**

Given the higher than expected infection rate, we performed a root-cause analysis to identify variables that may be associated with infection. A number of patient factors have been identified that could mitigate infection if addressed pre-operatively.

This work will continue through 2024.

During the 2023 year, we established a goal of improving hip fracture care at TOH. The Canadian Institute for Health Information published national rankings for a series of quality metrics, including

timing of hip fracture care once admitted to hospital. TOH ranked last place (11/11) in Canada for getting hip fracture patients into the operating room (OR) within 48 hours from the time of admission. The national standard is 90% compliance, and TOH was at 75-80% compliance for this metric. We developed a QI pilot project to prioritize these cases as D-priority the morning after admission in an effort to improve our outcomes. We initiated a pilot of D priority conversions from May-August 2023, and improved compliance to 91%, with an average time from admission to surgery being 27.8 hours. We will continue to extend this pilot strategy into 2024 to determine whether seasonal variance has an effect on our compliance.

Following a post-operative hemorrhage that was associated with inappropriate anticoagulation use, we collaborated with pharmacy and hematology and performed an audit of 100 patients admitted to orthopaedic services across TOH for a 6-month period. Results showed that 8/100 pts were prescribed an inappropriate dose of enoxaparin according to their weight and renal functioning. In addition, 8/100 pts had their dosing based on out of date weight (>1yr ago), 7/100 pts received a standard dose despite having no weight recorded/on-file, 8/100 pts received a standard dose despite having no serum creatinine measured. Dosing of enoxaparin should be based on current weight and renal function to prevent inadequate VTE prophylaxis and/or other unwanted side effects.

To summarize, we found that venous thromboembolism (VTE) prophylaxis was being inconsistently and/or incorrectly administered. We determined that it was important to standardize our procedures. We performed an education session for the division, and developed a Standardized Operating Procedure (SOP) for VTE prophylaxis in hip fracture patients. We plan to perform a subsequent audit in 2024 to determine the effectiveness of this SOP.

We continue to expand the use of our divisional electronic database, 'ConEHR', which administers Patient Reported Outcome Measures (PROMs). We have initiated discussion with the EPIC Integration team at the hospital to link this platform with EPIC, to better track adverse events including reoperations for all procedures, in addition to collecting PROMs. Currently, all CPU's collect functional outcome data prospectively which allows us to monitor surgical outcomes. Integration of ConEHR with epic will allow us to follow adverse events, reoperations, and infection in a more timely fashion.

A study is underway to determine walking wounded volumes based on the past 5 years of data. Intervention: assign trauma room time in keeping with expected volumes by month which varies by over 30% from the lowest volume to highest volume months. This will allow us to better plan for expected volume spikes.

We maintain routinely prioritizing regular internal and multidisciplinary Patient Safety and QI meetings, allowing for discussion and review of adverse events and patient feedback letters. We will continue to regularly review Patient Safety Learning Systems (PSLS), adverse events and use as a learning

experience. Finally, we will continue to foster our multidisciplinary collaborations with members across the hospital, with a common goal of providing best patient care.

We have initiated a number of high-impact quality initiatives in the 2023 year, and will continue to move forward in an effort of providing the best possible care for patients in the future, by using this information and collaborative efforts in terms of policy development, process improvement and communication as our guiding light.

Please identify the major threats to patient safety for the patients you treat based on your interpretation of information arising from routinely collected performance data and incidents reported within the Patient Safety Learning System, Serious Incident Reviews, and Morbidity and Mortality rounds, where available (500 words)

The QI team has reviewed 192 incidents reported within the Patient Safety Learning System in the 2023 calendar year. These incidents are reviewed, and findings or change items for the future are discussed with care team members, and if relevant, at our quarterly multidisciplinary meetings as well.
71 adverse events have also been reviewed as a group during our regular divisional Patient Safety and Quality Improvement meetings.

Common themes reported among serious incidents are similar to previous years and include the following:

1. Inconsistent (over/under) standard anticoagulation in hip fracture patients
2. Communication related incidents (missing or incomplete notes)
    - Discussion with division members on the importance of clean handovers between calls, regular communication with members of care team, and timely and complete notes entered in patient chart in EPIC, in addition to clear and consistent communication with patient and/or family members of patient.
3. Operating room equipment related malfunctions (incomplete trays, sterilization not confirmed, broken drill-bits, timing of draping…etc.)
    - Moderate rate of occurrence, however zero to minimal harm experienced by patients.

M + M Rounds
In the context of major serious adverse events, these cases are flagged for in-depth review and formal presentation with division members and within each Clinical Practice Unit. These presentations are delivered using the OM3 model, and involve a thorough analysis of all aspects of a patient care timeline from admission to discharge (or death), to gain perspective on events leading up to the incident. Morbidity and Mortality rounds are used as an opportunity to identify problems, and improve patient care in the future.
During the 2023 calendar year, a total of 13 M+M rounds were completed within the division:

- 2 Trauma (division wide)
- 2 Hand + Wrist
- 2 Upper Extremity (shoulder + elbow)
- 2 Foot + Ankle
- 2 Knee Preservation (sports/arthroscopy)
- 1 Spine
- 1 Joint Reconstruction (hip/knee)
- 1 Orthopaedic Oncology

Main themes identified in these rounds include:

1. High-risk patient specific intra-operative complications – being aware and appropriate education and communication to the patient.
2. Use of appropriate medications or dosages prescribed pre-operatively and post-operatively. Examples of this include pre-operative ordering of pregabalin, which has now been shown to not be effective for post-op pain and is no longer in accordance with best practice guidelines. Another example includes inappropriate and/or inconsistent dosing of post-operative venous thromboembolism (VTE) prophylaxis in hip fracture patients.

Please describe the extent to which your clinical services are meeting the expectations of your patients based on: (1) your interpretation of information arising from patient feedback (example patient concerns, Post Visit phone calls, surveys, focus groups), and (2) the requirements of the Elizabeth and Matthew Policy. (500 words)

Patient Feedback Letters

We receive a number of patient feedback letters. A large proportion of our feedback letters are positive patient experiences, which we pass along to the care team. For patients that report a poor experience, we review their care and communicate within our team and other hospital areas (as appropriate) for how we could improve in the future. If the situation warrants, we also work with Patient Advocacy who assist with managing the situation, and will often communicate directly with the patient.

Out of the negative patient experiences or complaints that we receive, most are related to displeasure with a prolonged and unknown time to surgery, or lack of communication at the bedside. We have spent time in our division stressing the importance of clear communication with patients in an effort to avoid potential negative situations in the future, and a clear understanding of the treatment care plan.

We have initiated performing extra surgeries on Saturdays through the Academic Orthopedic Surgical Associates of Ottawa (AOAO) program which initiated in February 2023, to assist with managing the growing waitlist. We have received positive feedback on this initiative from patients, providing us with an overall satisfaction level of 9.6/10.

Satisfaction Surveys

We administer the Canadian Patient Experience Survey (CPES), using our divisional data capture platform 'ConEHR'. We maintain to aim at least 70% compliance with this survey being completed. In addition to this, the hospital has initiated sending out the CPES to all surgical patients, and provide results for day surgery and ambulatory care through Qualtrics, for department of surgery, and the results are comparable.

Overall, across the division, approximately 80% of patients respond, with an average satisfaction level for level of care in clinic received as being "excellent".

Multidisciplinary Quarterly Meetings

We meet on a quarterly basis with colleagues from Diagnostic Imaging, Anesthesia, and the Emergency Department to ensure we are promoting ongoing collaboration, and communication for any outstanding items. We will use this time to review any outstanding safety incidents, patient feedback, and observed issues, with a discussion on how to improve moving forward. Any outstanding items are also then summarized and brought to our divisional Patient Safety and Quality Improvement meetings, which are held six times per year.

The Elizabeth + Matthew Policy

As previous, the Elizabeth + Matthew policy is applied by members in our division through regular assessments of patient charts, and timely documentation, in addition to other measures noted below.

Our Comprehensive Orthopaedic Service (COS) allows orthopaedic surgeons to provide daily and consistent care to patients admitted to the hospital. Through COS, urgent cases are admitted on the ward under a Most Responsible Physician (MRP), and this surgeon rounds on these patients on a daily

basis to ensure ongoing, and consistent care. The responsible COS staff, rotates each week and is in close contact with the site physician assistant and/or hospitalist, and nurses to ensure ongoing communication regarding patient care.

For complex patients, such as prosthetic joint infection (PJI) patients, we have developed a PJI service to ensure excellence in care and regular communication among team members and collaborators across the hospital. The PJI service consists of members from orthopaedic surgery, infectious disease, pharmacy, musculoskeletal radiology, plastics, and nursing leaders, who meet on a weekly basis to discuss active PJI cases to ensure high quality care is being delivered.

The oncology service operates using a similar model, in which sarcoma patients are treated by a multidisciplinary team consisting of members from orthopaedic surgery, pathology, diagnostic imaging, radiation oncology, medical oncology, and general surgery, who meet on a weekly basis to discuss treatment plans for new consults and follow-ups to ensure patients receive timely proactive care.

Describe and justify Divisional priorities for quality in the next 12 months based on your answer above. Please identify three priorities in descending order. (500 words)

Our divisional priorities for the 2024 calendar year include:

1. Improved PJI Tracking, care, and prevention
    - Initiate NSQIP specific evaluation (anticipated start of Spring 2024) for hip and knee arthroplasty procedures
    - A protocol has been developed to reduce PJI rates in (1) hip and knee arthroplasty patients and (2) across the division
    - Work with the PJI service team, Anesthesia, and Endocrinology to implement pre-operative optimization methods and to identify 'at-risk' patients *and thereby decrease the risk of PJI in this population.*
2. Consistent and Timely Hip Fracture Care (timing and VTE Prophylaxis)
    - Continue to assess D priority conversion, and collaborate with the OR and Anesthesia to determine feasibility long-term
    - Assess impact on other priority cases, and explore possibility of expanding trauma-dedicated OR time

3. Assess impact of VTE prophylaxis SOP by repeating an audit to determine effectiveness of the intervention. Changes to the protocol will be incorporated into the standardize EPIC order sets
4. Walking Wounded Case Booking
    - Assess seasonal variance for review, and potential discussion regarding flexible/variable surgical booking if appropriate to ensure all cases have access to surgery <5 days