Operational Efficiency and Optimization of Patient Care in Musculoskeletal Radiology Procedures at a Major Academic Center

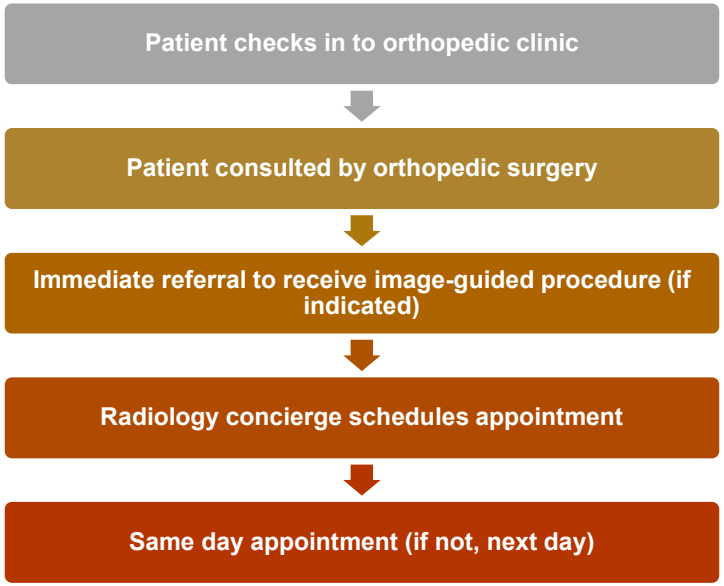
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Purpose:

This study explores integrating musculoskeletal radiology services into outpatient orthopedic clinics at a major academic center, aiming to improve operational efficiency and enhance patient care. The new model allows for streamlining image-guided procedures to be conducted on the same day, during a single visit, or within 48 hours of the clinical appointment. This approach has effectively reduced the burden on patients and minimized the chances of lost follow-up. Previously, the standard waiting time for patients to undergo an image-guided procedure was 7 to 10 days. The findings from this innovative practice model demonstrate comprehensive care and its potential to improve access to image-guided procedures in a large urban area while also alleviating patients' pain levels and enhancing their overall quality of life.

Musculoskeletal Radiology Referral System:



Optimization Strategies

Concierge Team

- A team specializing in MSK radiology was integrated to assist orthopedic outpatient clinics in coordinating image-guided procedures on the same day as patients' appointments.

EPIC Utilization

- A streamlined registration process was implemented enabling radiology and orthopedics to share a single, secure patient record system.
- EPIC Electronic Health Records (EHR) were used to create a unified queuing system for procedures.

Integration of Physician Assistants (PAs)

- PAs were trained to perform image guided procedures, ensuring that services were available in clinics where radiologists were not present.
- A high-standard was maintained with high patient and referring provider satisfaction rates consistently.

Impact and Performance Metrics:

Rise in Procedure Volumes

- Rise from 14 procedures performed annually in 2005 to 60 daily by 2024.
- Training PAs increased procedural capacity, particularly in locations without a radiologist on site.

Rise in Departmental Revenue

- Procedural volume increases generated a median revenue of $371 per procedure, totaling over $3.5 million in 2024.

Reduction in Wait Times

- Previously, patients needed a referral to a hospital-based imaging center, involving delays to care and travel challenges.
- This model allows for a clinical evaluation and image-guided procedure in the same visit or within 48 hours – an over 70% reduction in wait times from prior.

Improved Access and Continuity of Care

- The unified registration system streamlined the efficient and accurate transfer of patient information, minimizing delays and enhancing continuity of care.
- Same day appointment scheduling reduced loss to follow up due to travel restraints.

Improved Overall Patient Care

- This model has ensured consistent service delivery across all outpatient clinics whilst maintaining high levels of satisfaction among patients and referring physicians.
- There has been enhanced pain management, continuity of care, and improved long-term outcomes with musculoskeletal conditions.

Conclusion:

The operational metrics show that workflow optimization strategies in musculoskeletal radiology at this academic institution have significantly improved procedural efficiency and patient care. Key factors in this success include establishing a concierge team, effective use of electronic medical records (EMR) for accurate orders and patient scheduling, and the strategic location of clinics to serve diverse patient populations. These initiatives not only increased procedural capacity but also helped retain patients within the same healthcare system, ensuring the highest quality of care across all services. This model can serve as a blueprint for other academic centers looking to enhance outreach for image-guided procedures and optimize organizational efficiency within their radiology services.