
Tactics For Optimising Modality Operations



In the latest of their series on the Imaging Value Chain for the Journal of the American College of Radiology (JACR), Giles Boland, Richard Duszak Jr and William Mayo-Smith look at optimising modality operations.

A successful imaging outcome for a patient requires that each step of the workflow, from examination request to timely communication of actionable information, be optimised in order to deliver maximal quality, safety and patient satisfaction.

Optimising modality operations can be viewed from the perspective of both the institution and the patient. Under increasingly patient-centred, value-focused delivery systems, patient satisfaction will become a decisive metric. Heretofore, healthcare has lagged behind other industries by not truly appreciating patients as 'customers'. Patients often tolerate prolonged waiting times when scheduling and receiving health care services - deliverables consumers would rarely tolerate when purchasing other goods or services. Such details are important because the scheduling and performance of an examination are often the first direct experience a patient has with radiologists.

From the institutional perspective, a goal of the operations should be the provision of examinations of uniform high quality irrespective of equipment, operator, or time of an examination. As much as possible, therefore, standardisation of equipment, protocols, staffing, and examination performance should be goals of the operation.

Given the continued high demand for cross-sectional imaging (despite healthcare reform), departments are continuously being challenged to operate their modalities as efficiently as possible to maximise patient access. Once an imaging examination has been ordered, it behooves the organisation to complete it as soon as possible so that both referring physician and patient can decide what further diagnostic or therapeutic steps are necessary. Operations, particularly for high fixed cost cross-sectional modalities, must therefore be streamlined to facilitate maximal patient throughput, while delivering quality and safety. Unnecessary and cumbersome protocols often result in image degradation due to patient motion.

Inpatient Versus Outpatient

Providers must first recognise that inpatient and outpatient operations are effectively different businesses, each catering to different customers with different expectations. Mixing these patients into a single workflow is invariably disruptive, compromising quality, safety, and patient satisfaction. An urgent inpatient MRI or CT request, for example, will likely displace a previously scheduled outpatient. Ideally, therefore, inpatients and outpatients should be triaged to different scanners accordingly.

Some institutions have gone a step further by allocating entire schedules (or scheduling blocks) on some modalities dedicated to specific disease categories (eg, musculoskeletal or neurologic imaging).

The dual strategies of differentiating inpatient from outpatient scanners and triaging patients toward machines dedicated to particular subspecialties will, realistically, be achievable only in larger organisations. Organisations with fewer machines will inevitably require technologists to navigate through the multitude of different protocols on the same scanner. Other support services will be particularly important under this scenario, thus allowing technologists to focus on prompt patient scanning. On the inpatient side, 'just-in-time' delivery to scanners will usually necessitate dedicated imaging department transporters who, being part of the imaging care team, fully understand their role in coordinating the handoff of the patient from the ward to timely delivery at the imaging suite. On the outpatient side, sufficient reception staffing is necessary to manage the complex demands from patients checking in at the facility, the numerous telephone calls from stakeholders seeking patient add-ons, wayfinding or other general information.

Extended Operating Hours

Two further tactics to maximise technologist productivity are (1) minimising (or eliminating) tasks immaterial to technologists' core activities by delegating them to support personnel, thus allowing technologists to focus on fast and safe patient scanning, and (2) titrating the number of technologists at any given time to the natural variation of patient demand during the day. To further promote rapid patient access, the modality operating hours should be extended to match patient demand, particularly into the evening and on weekends. Radiology operations managers and physicians should also routinely review imaging protocols, volumes by machine, location, and time of day so as to modify scheduling slots and staffing to accommodate variable demand.

Underpinning these efficiency measures will require robust information system integration. Ideally, electronic health records and radiology information systems will inform radiology staff members early as to whether there are absolute or relative contraindications for requested imaging procedures. Such alerts can facilitate appropriate patient preparation before arrival at the imaging suite and may prevent the patient from arriving

at all, minimising downtime and patient inconvenience. Once within the imaging suite, technologists can ideally organise their workflow from scanner consoles with patient worklists automatically uploaded from the radiology information system (RIS) and the acquired images transmitted seamlessly into the PACS. Further appropriate use of IT systems facilitates training, education, and quality control measures between the radiologist and technologist.

Summary

Rapid patient access to cross-sectional imaging remains a prime prerogative for all radiology departments. Organisations must understand the nature of their business and modulate their workflow accordingly using appropriate human and IT resources to manage high fixed cost assets. These relatively small upfront incremental costs can translate rapidly into reductions in operational waste and costs, while yielding higher quality, safety and patient satisfaction.

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