



## Quality Initiatives Involving Nonphysician Providers in Radiology



Quality is a multifaceted endeavour, which is very important and complex in medical imaging. Engaging many different individuals in the radiology department is necessary to improve quality and service for patients. A recent study published in the *Canadian Association of Radiologists Journal* aimed to assess three new quality initiatives in radiology that engage various members of the department, including radiologists, residents, technologists and booking clerks. These pilot programmes provide work-related learning opportunities in semi-automated, easy-to-use, email-based, standardised forms that are used to identify cases where imaging could have been performed in a more optimal way (either due to technical reasons or a different protocol could have been chosen).

Researchers found that the pilot quality-improvement programmes launched in January 2012 have afforded technologists and booking clerks opportunities to become engaged in improving patient care as well as learning from their own performance gaps.

### Materials and Methods

Canada's Research Ethics Board approval was obtained for this retrospective, intradepartmental quality initiative project that is currently being implemented as a pilot programme. In 2009 the quality initiative programme (QUIP) was introduced in the authors' imaging department: it is a semi-automated way to communicate perceived errors from a previous imaging study when follow-up imaging is being interpreted. The QUIP programme was the springboard for which additional quality initiatives were encouraged in the imaging department.

To help individuals remember the names of these new quality expansion programmes, memorable acronyms were used. These names include Technical QUIP (technical quality initiative programme), Kudos QUIP (congratulatory quality initiative programme), and protocol under question (PUQ).

As part of the three spinoff pilot programmes, a standardised email template is sent to the radiologist, technologist or booking clerk in question, as well as being pre-addressed to the chief technologist for that imaging modality or booking manager (in case of PUQ) and the radiologist in charge of the division involved. On the standardised form there is an area for the individual receiving the initial email to indicate whether any subsequent action was taken based on the email (patient recalled for additional imaging, explanation provided to explaining the previous action taken, or an acknowledgment of the educational opportunity, when appropriate).

A Technical QUIP is sent to a technologist when a study is either not performed in accordance with the radiologist's prescribed protocol (and no reason indicated in the notes by the technologist as to why this

occurred) or if the quality of the imaging is suboptimal (and no reason given by the technologist).

PUQs are sent for one of several reasons: It can be sent by the technologist to a radiologist if the technologist feels a more appropriate protocol could have been chosen, based on additional information from the patient or if the protocol does not appear to match with the indication on the requisition (e.g., radiologist protocols CT abdomen and pelvis with intravenous [IV] contrast but the patient has a documented allergy to IV dye).

A PUQ can be sent to a booking clerk by a radiologist, if the clerk places the requisition into the wrong radiology subspecialty group queue for protocolling in the Computerised Physician Order Entry program. Finally, a PUQ can be sent to a radiologist if the booking clerk notices that the radiologist made a error in booking (eg choosing a very short waiting time priority in a case where the requesting physician indicated that the follow-up was to be performed at a specified, much later date, as is a common practice in oncology follow-up).

A Kudos QUIP was created to send a congratulatory note to a radiologist when subsequent imaging confirmed a "great call" on an initial imaging study or a well performed intervention. A Kudos QUIP can also be sent to a clerk or technologist who performs beyond their expected capacity, related to patient care.

Since inception in January 2012 to September 2013, the authors reviewed Technical QUIPs, PUQs, and Kudos QUIPs. These were collated through receipt of standardised emails for each category.

## Results and Discussion

A total of 62 Kudos QUIPs, 8 Technical QUIPs, and 58 PUQs were received in the abdominal and pelvic imaging division since inception. Six of the Technical QUIPs were related to CT and two related to MRI. With respect to PUQs, 32 were related to CT, 12 to MRI, 10 to ultrasound, and three were more global related to "process" issues. The Kudos QUIPs included Kudos related to initial interpretations of radiographs, sonography, CT, and MRI. Two Kudos QUIPs were sent to a technologist and a booking clerk respectively for a job well done, above and beyond what was expected (not related to interpretation skills).

Facilitated communication of feedback in a complex work environment can promote shared awareness of performance goals and hazards among all members of the team. Reviewing archived cases allows identification of systematic errors. These errors can be communicated to the entire department with a goal of reducing errors either at a technology level, administrative level, or an individual level.

Amongst the QUIPs sent to radiologists, one of the tenets is that it is not used for disciplinary action; this important aspect should be extended to the new programmes (PUQ and Technical QUIPs), though identification of commonly repeating errors or systematic process errors in the system is important to allow for future change and improvements.

## Conclusions

Though still relatively new programmes, PUQs and Technical QUIPs have contributed towards creating a team-centred approach, which includes nonphysician providers in radiology, affording opportunities to become involved in improving patient care, as well as learning from their own performance gaps. Future standardisation of received data, including coding of errors for each cross-sectional modality still needs to be established and the potential improvement outcomes based on these programmes still need to be measured.

Kudos QUIPs provide a forum for providing positive feedback to individuals on a job well done; this type of quality initiative balances the currently existing quality process with a positive reinforcement aspect.

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