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Alberta Health Services uses blind peer review to drive improved patient outcomes

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In 2011, officials at Alberta Health Services (AHS) made a startling discovery. A number of CT studies in a rural community had been misinterpreted, raising questions about patient care. As a result of the incident, the province's Minister of Health called for a thorough examination of quality assurance practices in radiology.

To find a solution that would meet the needs of AHS was a significant undertaking. AHS is Canada's largest provincial health system, providing services for more than four million people. The system includes 130 imaging facilities that range from high end acute care trauma centers to small rural community hospitals and health centers. In these facilities, 1,800 technologists perform more than 2.8 million exams per year, which are then interpreted by 300 radiologists working in 16 different professional organizations and groups.

The provincial health authority did an extensive review of available solutions, and selected Conserus Workflow Intelligence as the workflow solution that could meet its many unique needs. This system is at the heart of the far-reaching quality assurance program that is now in place to drive timely, education-focused peer review in radiology across Alberta. Conserus Workflow Intelligence is a rules engine that automates and facilitates a process whereby studies from any facility can be selected, anonymized, and then randomly assigned to radiologists throughout the province for a second look.

"The solution randomly selects studies from among all the cases we've reported in the last seven days," says Marlene Stodgell-O'Grady, AHS director of quality, education and safety. "They've been stripped of all the identifying information on the images and accompanying reports. We thought it was really important to do that so there are no biases, and so we could get 100 percent objective feedback."

The ability of the system to anonymize the data in the studies was important to AHS.

"The anonymous nature of the review process helps us promote the mindset of a 'just culture,'" Stodgell-O'Grady says. "This process acknowledges that we're all human and make mistakes, so we need to learn from those mistakes. It's not about assigning blame. It's about learning and education and helping talented professionals get better at their jobs."

The Conserus system randomly assigns the selected studies to radiologists throughout the province. Once assigned, the study is available in the radiologists' main PACS environment; when they log into the system, it is waiting for them. They could be reviewing a study performed by the professional sitting next to them or by someone hundreds of miles away.

The reviewing radiologist then decides whether he or she agrees or disagrees, Stodgell-O'Grady explains. In the case of a disagreement, he describes the discrepancy and indicates whether it is likely to produce a clinically significant difference in patient outcome or treatment. If the discrepancy is considered clinically significant, an adjudication process is built into the workflow, and a second radiologist is automatically assigned to review the study before it's returned to the reporting physician.

If the discrepancy is confirmed, the system transmits a notification to the reporting radiologist with the findings of a clinically significant case.

"We want to make sure that in these situations the patients are taken care of quickly, and so we require that the reporting radiologist acknowledge receipt of the notification," Stodgell-O'Grady says. "If, for some reason, they don't respond within a certain time period, we have an escalation process built into the system."

The end result is improved performance and better patient outcomes.

"Anonymized peer review really supports continuous learning and quality improvement," Stodgell-O'Grady says. "It shifts the focus from being punitive to being educational."

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Peer review, she added, has also made a significant impact on quality of care by increasing the likelihood that potentially harmful discrepancies are caught early and that appropriate care is provided to patients.

Stodgell-O'Grady remembers an example of a case where a colon cancer was initially missed but was then picked up during peer review:

"With a timely review system in place, within seven days of us finding the discrepancy she was being treated for that cancer," she says. "It's a positive outcome for her, because otherwise, she would have gone on and her symptoms would have gotten worse and it would have taken longer for her to receive the right diagnosis and treatment, and it might have not been as positive an outcome for her. That's an extreme case, and those are few and far between, but we have other examples of things like subtle missed fractures that were picked up in review, and they really do change the patient outcomes, because they got treated before they got worse."