



A Smart Decision

How one medical imaging department streamlined workflows, increased reporting accuracy and improved documentation consistency.

Founded in 1913, Ohio-based Salem Regional Medical Center (SRMC) has a long history of providing quality care in a fast-paced environment.

Fostering a culture of innovation

SRMC's medical imaging department has a reputation for innovation — delivering state-of-the-art medical imaging services and pioneering dose management programs.

In fact, SRMC was among the first to standardize power injection for all contrast-enhanced MR studies, which its radiologists believed would reduce mis-registration of anatomy by more consistently matching pre- and post-injection slices.

When the opportunity arose for SRMC to evaluate a new Bayer MR injection system, Radiology Operations Supervisor Andrew Clark was interested.

"We were excited about the opportunity to take our MR capabilities to the next level," said Clark.



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Andrew Clark
Radiology Operations Supervisor

medrad® MRXperion™
MR Injection System

Having already adopted contrast dose management for CT, Clark was excited about exploring a similar program for MR. His team decided to evaluate the new Medrad® MRXperion™ Injection System with contrast dose management.

Collaboration improved implementation

In 2016, the new system was installed in a scan room that already housed a 3T MRI Scanner, replacing the existing Medrad® Spectris Solaris® MR Injection System which SRMC had been using since 2003.

“Deployment was a team effort, and the Bayer team was right there with us the entire time,” noted Clark.

With different shifts scheduled in the medical imaging department, Clark was initially concerned that some staff members might have difficulty mastering the new technology but his team quickly adapted.

“From day one, everyone the Bayer team trained was comfortable with the new technology,” said Clark. “We had technologists eager to train those who missed out.”

As they began to adopt the full solution complete with Radimetrics contrast dose management software, they quickly began to appreciate its potential.

The impact of automation on technologists

During the evaluation, MRXperion and Radimetrics consistently exceeded technologists’ expectations by helping them streamline workflows and automate once-manual processes. The SRMC team gained efficiencies from patient prep through post-study reporting.

Clark observed how SRMC technologists were immediately excited by the new injector’s automated features that helped to free up a little of their time before and after exams. “The syringes just snap on and off and pistons automatically advance. Techs no longer have to stand there at the injector to manually advance or retract pistons,” he pointed out.

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AUTOMATED WORKFLOWS

At the point-of-care

- Injector connects to modality work list for record accuracy
- Syringes quickly and easily snap on
- Pistons simultaneously advance before syringe loading and retracting at the end of the exam

Post-study

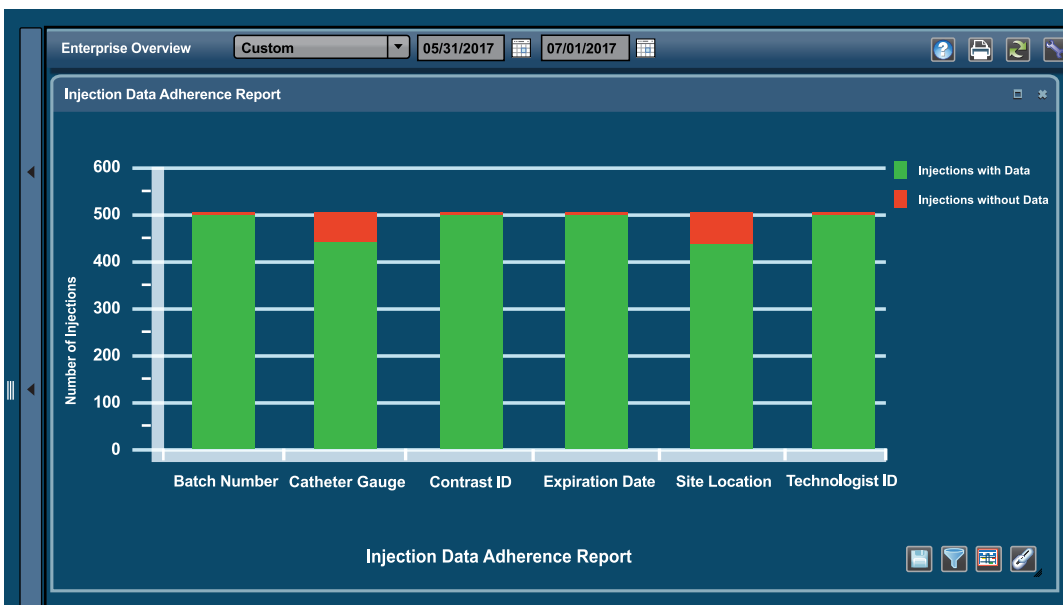
- Contrast details captured by the technologist at the workstation auto-populate into interfaced PACS
- Repetitive post-procedure manual documentation – and the errors associated with it – are minimized



“Automation not only helped ensure that documentation was complete, in our experience, it made it more accurate.”

As Operations Supervisor, Clark saw the benefits of consistency. “Our technologists always manually documented information. This technology now standardizes how we record and capture data, and helps us where ACR stipulates that certain information is required for accreditation.”

Central aggregation of data through Radimetrics allows them to monitor point-of-care data capture and outbound messages. He confirmed, “automation not only helped ensure that documentation was complete, in our experience, it made it more accurate.”



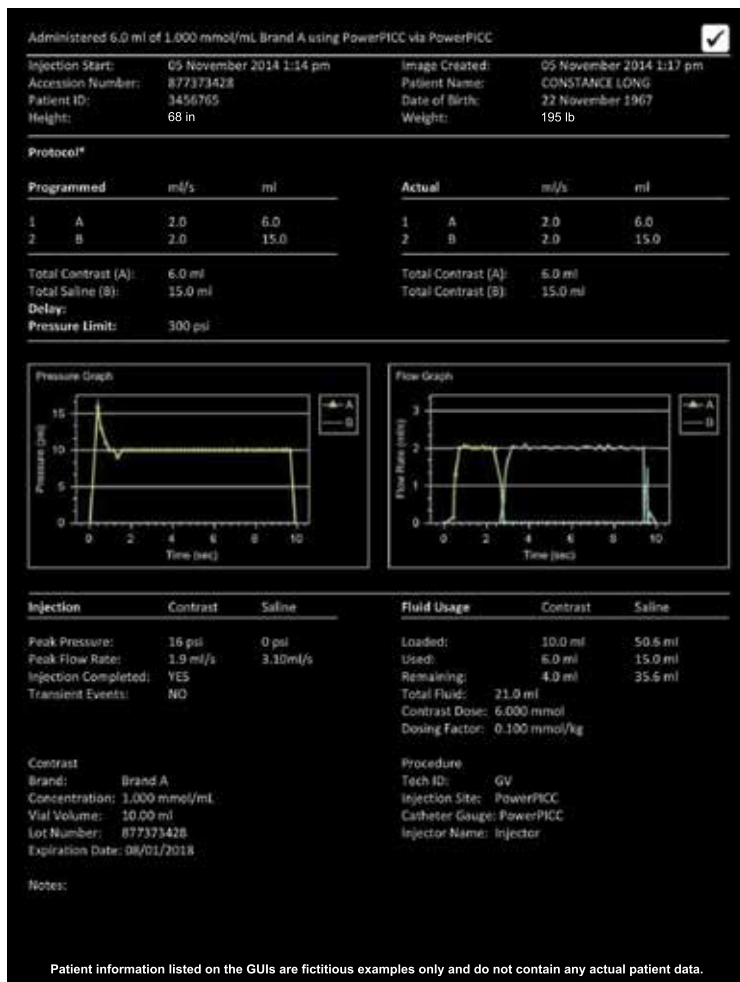
Central aggregation of data made it easy to monitor completeness of outbound messages

The impact of automation on radiologists

Radimetrics enabled central aggregation and management of all SRMC MR injector and scanner data – including Dicom Secondary Capture images. For SRMC radiologists this meant, “no more searching for contrast details,” said Clark. “For the first time, our radiologists could rely on having the insights they needed for interpretation right there at their fingertips.”

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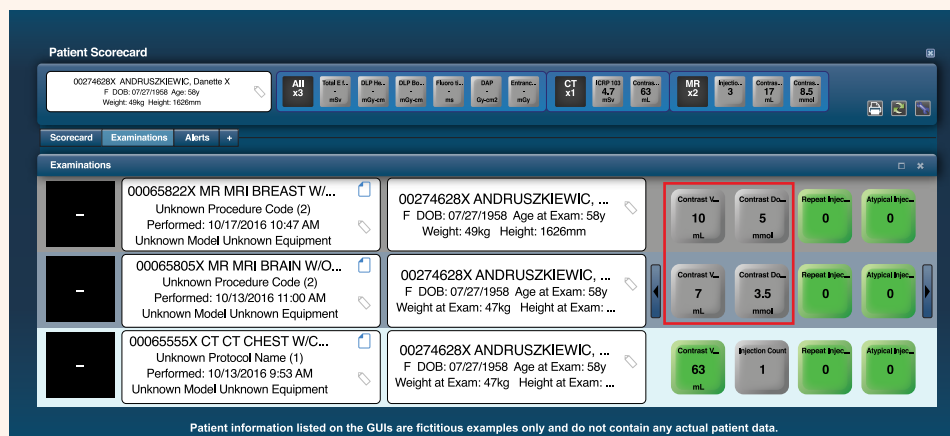


Access to Secondary Capture enhanced interpretation

SRMC is planning to integrate the Radimetrics MR dose management platform with their speech reporting system. Once complete, MR contrast injection records will also be automatically populated into their patients’ radiology reports.

“We’ve been using Radimetrics CT speech reporting capabilities for years, so our radiologists already know what to expect for MR – reduced report turn-around times, greater overall efficiencies and no more need for dictation of the contrast details,” said Clark.

For SRMC, MRXperion™ delivered unexpected value, making it “a smart decision for the entire department,” according to Clark.



“We feel there is value in tracking cumulative MR contrast for our patients.”

Total Examination Scorecard tracks dose across modalities

Measurable improvements

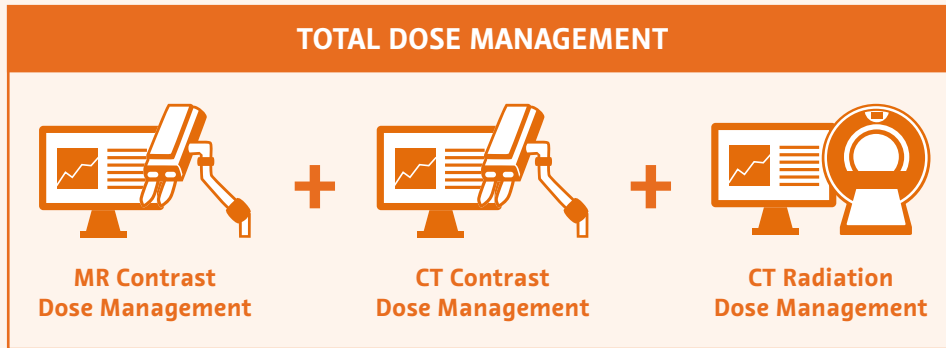
At the end of the evaluation, Clark and his team agreed that by automating once manual processes, the MR contrast dose management solution:

- Streamlined workflows at the point-of-care
- Ensured greater consistency and accuracy in reporting and documentation
- Allowed technologists and radiologists to work more efficiently

“With MRXperion contrast dose management capabilities, we recognized improvements in accuracy of contrast documentations and consistency of completed medication records,” Clark confirmed.

Making the most of their MR and CT investments: next-level dose management

After the success of the MRXperion evaluation, SRMC was ready to connect and analyze all their CT and MR data and technology. In addition to the new MR injection system, SRMC recently adopted CT radiation dose management. Because they were also long-time users of CT contrast dose management, they had all the tools they needed to monitor dose across modalities.



Setting dose thresholds and alerts

Once all SRMC multi-modality data was centrally aggregated, scorecards offered comprehensive views of each patient's total dose. This also allowed the SRMC team to establish dose reference levels for both radiation and contrast. Clark explained, "Dose alerts have been really helpful. Now if a threshold is exceeded, we're informed immediately via email."

Cross Modality Cumulative Score Card

Patient ID	Modality	CRP	Fluoro S.	CAP	Ref. Point	Contrast...	Contrast...	Contrast...	CT	CRP	DLP	DLP	Contrast...	MR	Contrast...	Contrast...
00192402X BARROTT, Jaquelyn X F DOB: 03/29/1952 Age: 63y Weight: 57kg Height: 188cm	All x6	35.5	—	—	—	262	7.5	7.5	CT x5	35.5	156	1620	262	MR x1	7.5	7.5
00265705X CRAFT, Dann X F DOB: 06/15/1955 Age: 60y Weight: 58kg Height: 167cm	All x2	—	—	—	—	—	10	2.5	MG x1	7.2	6.2	—	—	MR x1	10	2.5
00249121X KERSS, Rebecca X F DOB: 11/13/1984 Age: 31y Weight: 58kg Height: 165cm	All x2	8.1	—	—	—	92	—	—	CT x1	8.1	—	292	82	MR x1	—	—
00252092 OPET, Colin X M DOB: 06/02/1946 Age: 69y Weight: 93kg Height: 188cm	All x2	24	—	—	—	100	9	9	CT x1	24	—	1207	100	MR x1	9	9

Score card displays patient radiation dose, CT contrast dose and MR contrast dose.

"Total dose management was a game changer for us," said Clark. "Being able to track and evaluate CT and MR contrast and scan details has enabled more-informed decisions and helped us identify opportunities for clinical protocol improvements."



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