



preparing for the costs of XR-29 a new standard for CT radiation dose monitoring

AT A GLANCE

- > A new standard for computed tomography (CT) scanners, established by the Medical Imaging and Technology Alliance, is aimed at ensuring CT studies are performed on safe equipment that delivers high-quality images at the lowest possible radiation dose to patients.
- > Starting in January, the Centers for Medicare & Medicaid Services will implement a new payment incentive, authorized by Congress in 2014, aimed at promoting healthcare providers' adoption of the new standard for all outpatient CT studies.
- > Organizations that perform CT studies on an outpatient basis will need to develop a process to comply with the standards or face a reduction in payment per study.

Beginning in January 2016, many hospitals and health systems face the possibility of reduced Medicare payment for the computed tomography (CT) scans they perform for outpatients in their facilities. Congress recently passed legislation that will reduce payment for CT scans that are not performed according to a new standard established by the Medical Imaging and Technology Alliance (MITA) in early 2013. The purpose of the MITA standard, called XR-29: Standard Attributes on CT Equipment Related to Dose Optimization and Management, is to ensure CT scans are performed on safe equipment that delivers high-quality images at the lowest possible dose to the patient.

Although these technical standards have been under the radar for many finance professionals, they pose significant implications—particularly with respect to the costs of ensuring compliance—and therefore demand a finance leader's attention.

Evolution of CT Prompts New Standard

The utilization of CT scanners in health care began slowly in the 1970s, and was initially limited to head scans. Since then, CT utilization has grown exponentially, as has the number of images that a CT scanner can acquire—today's 256+ slice CT scanners would have been inconceivable in the 1970s.

Yet even as CT has revolutionized health care, many organizations have raised concerns that the substantial increases in studies per patient and numbers of images acquired has increased radiation exposure for patients to unhealthy levels.

In early 2013, these concerns came to a head with a sudden focus by industry groups on measuring the amount of radiation dose delivered to patients. The National Equipment Manufacturers Association had been slowly releasing radiation standards for years, but in 2013, MITA combined two standards (DICOM Dose Structured Reporting and Dose Check) with two product features (reference protocols and automatic exposure control) to create the new XR-29 standard, also referred to as MITA Smart Dose CT.^a Many professional organizations provided input for these standards, including among others the American Association of Physicists in Medicine, the American College of Radiology, and the Food and Drug Administration.

As noted above, the aim of XR-29 is to ensure CT scans for all patients are performed on safe equipment that delivers high-quality images at the lowest possible dose. As part of the Protecting Access to Medicare Act of 2014 (PAMA), Congress voted in March 2014 to create an incentive that would promote healthcare providers' adoption of the standard.

Medicare payments for CT scans have two components: technical and professional. As of Sept. 15, effective January 2016, Medicare plans to reduce payment per scan for the technical component by 5 percent for all CT scans performed on equipment that is noncompliant with the XR-29 standard. Beginning January 2017, this reduction increases to 15 percent. The reduction applies to all CPT codes for CT scans in effect as of January 2014 and any subsequent codes that become effective in the future.

The payment reduction applies to Medicare outpatient services, regardless of the place of service. The CT service provider must obtain a certificate from its vendor confirming that the equipment is XR-29 compliant. Each manufacturer has a website with information that allows providers to verify whether their equipment is compliant with the standard. If the equipment is not compliant, the CT

provider must replace or upgrade it or accept the reduced payment. CT equipment manufacturers also made a commitment to provide customers with a certificate proving compliance no later than July 1, 2015, and they are required to deliver compliance certificates on all new CT equipment installed after that date.

The State of XR-29 Compliance

Nonetheless, as of July 1, anecdotal reports from across the industry suggested that as many as one in three installed CT scanners might still be noncompliant with the new regulations. To obtain a better estimate of compliance, the Association for Medical Imaging Management (AHRA) conducted a survey of its more than 5,000 members (representing 1,800 healthcare facilities) in August. The survey yielded a 29 percent response rate, with responses from 491 member organizations. The survey results pointed to an even higher rate of noncompliance than had been noted anecdotally, with 56 percent of respondents stating they had CT scanners that were compliant with XR-29. Among facilities reporting noncompliance, 36 percent indicated they did not expect to be compliant by the Jan. 1 deadline.

These noncompliant machines, ranging from single-slice to multiple-slice CT scanners, cannot be upgraded because they are too old or are not on a platform that's current enough to allow for an upgrade. They do not have to be removed from service. Any organization that continues to use them after Jan. 1, however, will incur the per-scan payment reduction.

Meanwhile, for any decision to replace or upgrade equipment, organizations require a capital-planning and acquisition-timing process—which poses a challenge, given that the lead-time many hospital organizations require for capital expenses can be more than 18 months.

Cost of Compliance

Upgrades can range from \$20,000 to \$200,000, and the average cost to replace a CT scanner with one that is XR-29 compliant is \$500,000. Either way, organizations should prepare a pro forma to

CPT CODES AFFECTED BY XR-29 LEGISLATION

- > 70450-70498
- > 71250-71275
- > 72125-72133
- > 72191-72194
- > 73200-73206
- > 73700-73706
- > 74150-74178
- > 74261-74263
- > 75571-75574

a. For additional details regarding these standards and product features, and instructions on verifying whether a CT scanner is XR-29 compliant, see MITA Smart Initiative, medicalimaging.org/policy-and-positions/mita-smart-dose.

evaluate the financial impact of revenue loss versus capital cost.

To illustrate the key considerations, the exhibit below provides a sample analysis of the effect of XR-29 noncompliance on a 250-bed hospital with about 17,000 CT studies on an outpatient basis annually and a corresponding Medicare payer mix of 50 percent.

The exhibit is based on the following additional assumptions:

- > Average Medicare rates for 2015 are used and applied to the outpatient volume at the CPT code level.
- > A 5 percent reduction is applied to 2016, and a 15 percent reduction is applied to 2017 and future years, assuming no changes in volume and no other Medicare payment reductions incurred over the time frame shown.
- > Operating expenses were estimated at 70 percent because they tend to vary widely among organizations.
- > The contribution margin was estimated at 30 percent.

The exhibit shows the hospital would incur a reduction in payment of \$303,074 in 2017, which would need to be applied annually until the scanner is replaced. For hospital CT departments, contribution margins can range from 30 percent to more than 50 percent; the example uses 30 percent in the calculations to provide a conservative estimate. In the example, if an organization replaced its CT scanner at the average

cost of \$500,000, the payback time would be less than three years.

Other Compliance Considerations

The XR-29 standard also presents hospitals with additional compliance considerations, including the need to verify vendor compliance, additional coding procedures, and the challenge of developing internal processes to identify compliant versus noncompliant equipment where a facility has a mix of CT scanners.

Establishing vendor compliance. Each CT equipment manufacturer has developed an implementation process to ensure its scanners comply with the XR-29 standard. It is the responsibility of the provider organization to request information as to how the vendor will provide evidence of compliance.

Meeting new coding requirements. In the 2016 Medicare outpatient prospective payment system proposed rule, the Centers for Medicare & Medicaid Services indicates that facilities will need to apply a yet-to-be-named modifier to the procedure code when billing for a CT scan performed on a noncompliant piece of equipment.

Establishing a process for coding compliance when there is a mix of XR-29-compliant and -noncompliant CT scanners. According to the AHRA survey, 71 percent of imaging departments have multiple CT scanners in use, often with a mix of compliant and noncompliant equipment. Establishing an internal process for identifying utilization of compliant versus

SAMPLE ANALYSIS: ONGOING EFFECT OF NONCOMPLIANCE WITH XR-29 STANDARDS FOR COMPUTED TOMOGRAPHY (CT) SCANNERS

	2015	2016	2017	Ongoing
Hospital outpatient CT study volume	16,954	16,954	16,954	
Volume at 50 percent Medicare payer mix	8,477	8,477	8,477	
2015 estimated Medicare revenue	\$2,020,493			
2016 revenue (5 percent reduction)		\$1,919,468		
2017 revenue (15 percent reduction)			\$1,717,419	
Difference from 2015 base year (cumulative)		-\$101,025	-\$303,074	-\$303,074
Estimated expenses at 70 percent	\$1,414,345	\$1,414,345	\$1,414,345	\$1,414,345
Estimated contribution margin at 30 percent	\$606,148	\$505,123	\$303,074	\$303,074

noncompliant equipment on a patient-specific basis and communicating that information to the billing department poses an administrative and operational challenge for both imaging and billing departments. The challenge with the proposed rule for XR-29 is that there never has been a modifier that must be applied to individual equipment and that is applicable only to Medicare outpatients. In the past, modifiers have been handled through the charge description master (CDM) and have been universal for all imaging equipment, allowing billing staff to apply them generally. For many hospitals, however, the only way to communicate the modifier for XR-29 compliance correctly to the billing department will be to create a duplicate CDM with the modifier for use by the technologist performing the CT scan.

A technologist performing a CT scan is not likely to have access to the patient's insurance information or the CPT codes. Moreover, requiring the technologist to manually select the appropriate CDM item specific to a noncompliant machine and send it to the billing department would be an inefficient and costly process, placing unnecessary administrative burden on both imaging and finance departments, while also increasing the potential for errors.

Evolving Standards

Whether an organization is a hospital, imaging center, or physician office, it will need to develop a process to comply with the XR-29 standards if it has not done so already—especially given that the implementation date is fast approaching.

It also should be noted that the MITA standards are constantly evolving, and that Section 218 of PAMA authorizes the secretary of the U.S. Department of Health & Human Services to issue new regulations mandating that CT equipment remain compliant with future iterations of the XR-29 standards. It is not clear how frequently revisions to the XR-29 standards might be required, or how substantive any changes are likely to be. How to track the radiation doses a patient receives over time across multiple organizations is not yet addressed. Perhaps that will be next. ■

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