



ICD-10: An Informed and Intelligent Transition

A best-practice guide: Applying the lessons from vRad's transition of 2,100+ healthcare facilities and 6 million+ annual studies to ICD-10 with:

- 19% decrease in addenda
- No increase in days to post charges
- No increase in days sales outstanding (DSO)
- No increase in denied claims due to medical necessity

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About This White Paper

Moving a practice, group or even a health system with multiple hospitals to an ICD-10–compliant clinical documentation solution has been and continues to be challenging. This white paper showcases insight and best practices from vRad’s successful transition of 2,100+ client facilities, and their 6 million annual studies, to a set of solutions that will meet the full level of code specificity a full year before the October 1, 2016, deadline.

This white paper will cover vRad’s three-step game plan that created an automated, scalable and replicable solution that has improved overall patient care while avoiding the “catastrophic repercussions on cash flow” predicted by many industry experts – and being felt by over half of all radiology practices.

Read this white paper for access to the tools and guidance used to help our clients with clinical, operational and revenue cycle improvements leveraging a unique, Intelligent Branching–based ICD-10 solution.

The Train Has Left the Station

Congressman Ted Poe couldn't kill it – with the Cutting Costly Codes Act of 2015, H.R. 2126, his most recent attempt to prohibit the Secretary of the U.S. Department of Health and Human Services from replacing ICD-9 with the ICD-10 diagnostic code set.

American Medical Association president, Dr. Steven Stack, couldn't derail it – with his plea that doctors should be “focused on treating patients, not implementing a whole new bureaucratic language.”

A lack of physician readiness couldn't stop it – with an August 2015 survey finding that nearly 50% of responding doctors would not be or were uncertain as to whether they would be ready for ICD-10; only 20% said that they had started or completed external testing.¹

Even an embarrassment of riches from the dense – and oftentimes absurd – detailed code descriptions couldn't scuttle the switch, such as:

V97.33XD Sucked into jet engine, subsequent encounter.

Y93.D Activities involved arts and handcrafts.

Z63.1 Problems in relationships with in-laws.

But the fear of increased reimbursement rejections made the Centers for Medicare & Medicaid Services (CMS) blink – and on July 6 CMS stated that until October 1, 2016, “when sufficient clinical information is not known or available about a particular health condition to assign a more specific code, it is acceptable to report the appropriate unspecified code.” That means that claims will not be denied based on the lack of the specific ICD-10 code provided during this 12-month grace period (unless specificity is required for a National or Local Coverage Determination policy).

Follow the Money

Why the reprieve? It is because the use of ICD-10 in the United States is not limited to morbidity tracking classification; the new set of exhaustive codes will also be used for billing and reimbursement. Lack of readiness meant potentially lower reimbursements and many unhappy stakeholders; two surveys of Radiology Business Management Association (RBMA) members highlighted that the top concerns for the transition to ICD-10 were all related to the revenue cycle. In an article discussing the survey results, Robert Tennant, vice-chair of the Workgroup for Electronic Data Interchange (WEDI), the leading authority on the use of Health IT, suggested that rejected codes could “have catastrophic repercussions on cash flow” for physicians.²

And Mr. Tennant's assessment might not be as hyperbolic as it sounds: an internal analysis by vRad of its larger clients exposed high reimbursement risk prior to the transition deadline. For example, prior to adopting vRad's online ICD-10 transition tool, a 400-bed regional medical center client could have had a 64% rejection rate on its imaging procedures due to lack of sufficient clinical documentation for proper coding. Addendums would have been required on all rejected studies for potential and delayed reimbursement.

¹ Workgroup for Electronic Data Interchange (WEDI) survey also found that only about 20% of physician practices have started or completed external testing. <http://www.medscape.com/viewarticle/849195>

² <http://www.medscape.com/viewarticle/849195>

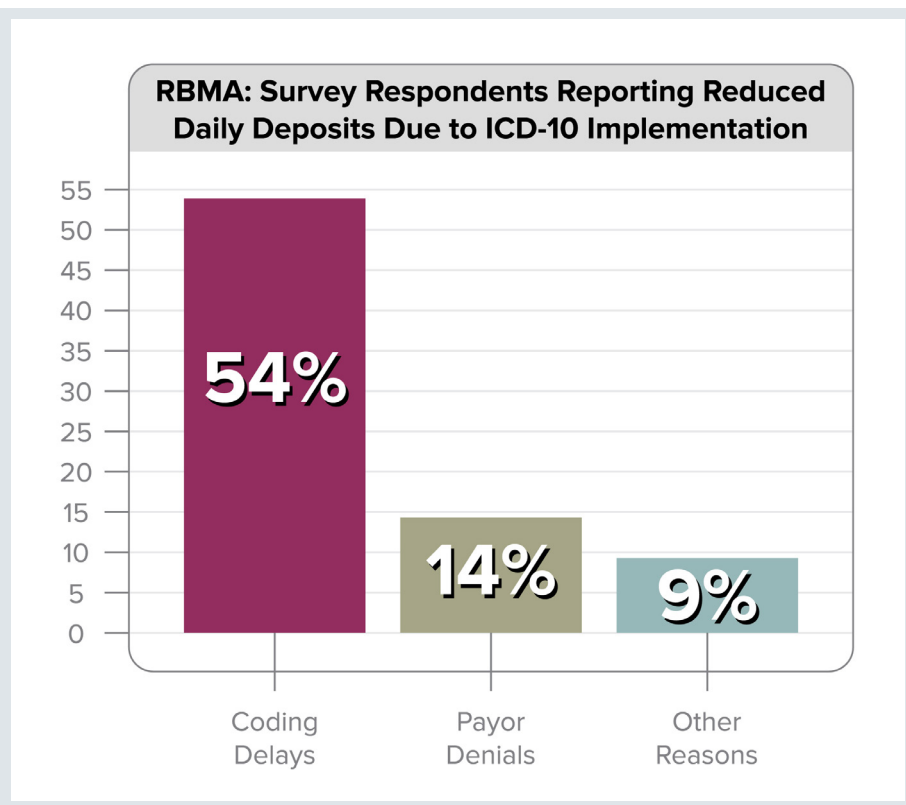
“Prior to adopting vRad’s online ICD-10 transition tool, a 400-bed regional medical center client could have had a 64% rejection rate on its imaging procedures due to lack of sufficient clinical documentation for proper coding.”

The wallet won. Or did it?

Even with the promised grace period, decreased reimbursements and increased rejections are already being cited in the media.³ For example, a recent study by the RBMA in December 2015 highlighted that a staggering 54% of respondents have experienced a reduction in daily deposits since the transition to ICD-10. The primary reason: coding delays (See Figure 1)⁴

ICD-10’s impact is already being felt, the state of readiness is low and the stakes are high for physicians, practices, hospitals and health systems alike.

Figure 1



One Step Removed—the Doctor’s Doctor

The transition challenge from ICD-9 to ICD-10 is exacerbated for imaging because the interpreting radiologist is not the referring physician—and has no control over identifying and communicating the reason for exam.

³ [A Radiology Perspective of ICD-10 Challenges](#), Allison Morgan, MS, CPC, CPCO, 23 November 2015

⁴ http://www.rbma.org/uploadedFiles/Content/Tools/Surveys/Radiology_Hot_Topics/RHT_121615_ICD10_Deposit_Change.pdf

“To add to the complexity of interpretations, rather than relying on cues from patients to tell me that they are hurting in a particular place or having physical exam findings I can use to narrow down my differential, I am instead relying on other health care practitioners to relay pertinent information so that I can accurately answer their clinical questions. This reliance certainly has its pitfalls.”

Kerri Vincenti, MD⁵

Why is this important?

For imaging studies with normal results, the reason for exam drives the ICD-10 coding for billing purposes. Coders use the ordering information, specifically the reason for exam and clinical history, to select the proper ICD-10 code for reimbursement. If the information provided by the referring physician is nonexistent or inadequate, reimbursement may be, at best, delayed due to the addendum process, or at worst, denied. Reimbursement is therefore in the hands of the referring physician and not the interpreting radiologist providing the service.

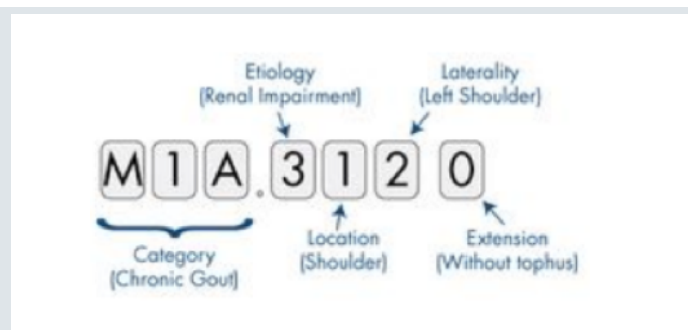
For studies with “findings,” coders use content in the dictated report, as well as the reason for exam, to determine the proper code to use for billing and reimbursement.

In either case, simply passing one of the 70,000 ICD-10 codes as part of the report is neither feasible nor a best practice solution. According to the American Hospital Association’s (AHA) coding clinic, “it is not appropriate for providers to list the code number or select a code number from a list of codes in place of a written diagnostic statement.” Clinical statements must be used to allow coding staff to accurately pick the right ICD-10 codes.⁶

Furthermore, the code itself does not add additional insight for the interpreting radiologist who has not actually seen or examined the patient. For a code, such as M1A.3120, to add

value to a physician’s diagnostic workflow, he or she would need to have it memorized in order to extract the information inherent in the classification system – an unlikely and unrealistic requirement for such a large data set.

So, while the bottom line is that the bottom line is driving



much of the pushback on the transition to ICD-10, the potential upside to patient care has been getting lost in the debate!

⁵ <http://www.kevinmd.com/blog/2016/01/medicine-intern-radiology-resident-grass-greener.html>

⁶ www.codingstrategies.com/leadership

Getting Back to the Patient

Imaging relies on referring physicians to provide clinical history and information, including reason for exam, in order for the radiologist to provide accurate interpretations. More detailed inputs provide additional insight for the interpreting physician – and not only input for appropriate billing code selection. This is especially important in emergent situations when the reason for the exam and relevant clinical history can make a meaningful difference in time to read – and time to treat.

For example, under the ICD-9 regime, “pain” was considered an adequate and reimbursable reason for exam for a head CT. With ICD-10, headache “pain” must be further detailed by type, for example, cluster, migraine (with or without aura, intractable or not, with or without migrainosus), paroxysmal hemicrania, post-traumatic, tension vascular and other. According to vRad Medical Director Dr. Ray Montecalvo, “We are definitely seeing better clinical information from our client facilities. We are getting a more consistent description of the type and location of the patient’s pain, the acuity of the symptoms and the surgical history – much of which was not included prior to vRad’s transition to ICD-10.”

For vRad, there was no justification to delay getting the best information to our physicians so that they would be equipped with the information to diagnose accurately and quickly – and provide better service to our clients and better outcomes for the patients we collectively serve.

The vRad Challenge: Transitioning x 2,100

Moving a practice, group or even a health system with multiple hospitals to transition to the new paradigm has been and continues to be challenging. Imagine having to transition thousands of facilities and their referring physicians and technologists, to impact the millions of studies being interpreted and coded for reimbursement. Imagine vRad.

vRad has 350+ U.S. board-certified physicians who read over 6 million studies annually – with an ordering client base of 2,100+ facilities, each with unique and different naming conventions, integrated from a large number of source systems, and with different ways to get us the information (DICOM, HL7 and manually entered information provided through our online order management system).

The scale and scope of our practice meant that vRad began preparing for ICD-10 over two years ago in order to minimize disruption to our clients, maximize quality improvements and optimize reimbursement eligibility. Time and investments were required to develop new and automated processes and tools, as well as to ensure proper client communication and training on new workflows.

So, even with the 12-month grace period, we made a practice decision to be fully ready – with the full level of code specificity for the October 1, 2015, deadline to minimize revenue cycle risk *and* to maximize patient care by getting better diagnostic information to our physicians through ICD-10’s more detailed and relevant reasons for exam.

“For vRad, there was no justification to delay getting the best information to our physicians so that they would be equipped with the information to diagnose accurately and quickly.”

It's a Go: 3 Steps to Getting It Done

How We Did It—and Lessons Learned

On September 9, 2015, vRad announced that its 2,100+ client facilities could effectively transmit and process complete clinical history, technical and diagnostic data, including standardized code sets necessary to meet new ICD-10 documentation requirements for nearly 6 million studies transmitted annually.⁷

- Given the complexity of our practice, how did we successfully transition to ICD-10 when many radiology groups and imaging service lines were unprepared or had yet to start to address the CMS-mandated change?
- What lessons and best practices can be shared with the broader imaging market – both clients and competitors alike – to minimize disruption post-transition that benefits bottom lines and client outcomes?

vRad is a technology-driven practice that has nurtured a strong partnership between our clinical and IT/operational experts. Our CMO and COO/CIO have shared objectives and work together to prioritize investments; the partnership has already resulted in 15 patents for clinical workflows, with additional patents pending.

The creation of tools for the move to ICD-10 was no exception; our overall transition solution objectives would require both clinical and operational expertise to

- improve both clinical care and reimbursement results;
- minimize disruption to our clients' physicians, technologists and other stakeholders; and
- simplify and automate where possible.

Our three-step game plan for vRad's successful transition was outlined over two years ago, evolved with client feedback, technical advances and learning along the way – all resulting in an automated, scalable and replicable solution that has avoided the aforementioned “catastrophic repercussions on cash flow.” In fact, since transitioning, vRad has had no delays in posting charges, no increased refusals or denials, and has actually seen a decrease in daily addenda and no increase in days sales outstanding (DSO) due to the mandated October 1 implementation.

Step 1 – Speaking the Same Language

With millions of annual imaging studies from thousands of health care facilities around the United States, vRad must have the ability to easily and quickly decode and classify procedures being ordered to promptly identify the reason for exam in an efficient and scalable manner. That's because radiology groups and hospitals usually work with multiple systems, resulting in local variability and nomenclature standards: one hospital's “ultrasound gallbladder” is another hospital's “ultrasound right upper quadrant” or “ultrasound liver.” Descriptions that facilitate the protocoling process are not standard across practices, even if they are all part of the same integrated delivery network with a common electronic medical record (EMR).

While at the start of our transition journey, vRad looked for off-the-shelf solutions to help normalize the vast amount of data flowing through its network. Existing solutions were at best, subjective, and at worst, lacking. Since there were no meaningful solutions available, vRad had to design and build its own patent-pending normalization technology and workflows.

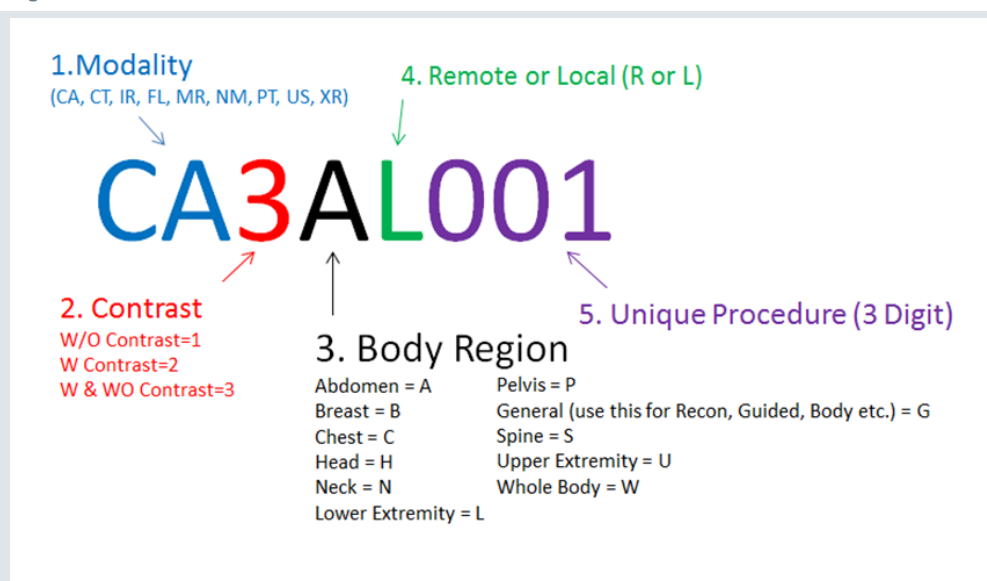
⁷ http://www.vrad.com/Portals/2/PDF/Press%20releases/vRadPreparingClientsForComplexICD10Compliance_vRad_Press_Release_09_09_15.pdf

Enter vCoder

vRad's patent-pending vCoder is the radiology industry's first real-time data-normalization technology that effectively standardizes the various ways clients refer to radiology procedures based on CPT codes. The vCoder assigns 23 unique attributes to a single imaging study to qualify it in terms of modality, contrast use, body region, laterality, reading location and more. (See Figure 2: vCoder)

While vCoder was first developed by vRad to develop analytics tools necessary to manage its own clinical, financial and operational practices, its ability to standardize studies ordered effectively allows data from client facilities to “speak the same language” – the first step in any transition to ICD-10.

Figure 2: vCoder



Step 2 – 80/20 Relevant Reasons

With 70,000 ICD-10 codes, ICD-10-CM is a daunting and seemingly insurmountable challenge. To visualize the vastness of the new coding system, MedData, a national provider of medical

billing services, created a Twitter account and hashtag #everyicd10. The company has been sharing a new ICD-10 code and description on the social media platform by the minute since July 9. Since then it has posted more than 14,500 codes, which at that rate could set it up to finish sharing all 70,000 of them by October 1 when the new diagnostic library goes live.⁸



⁸ <http://www.healthcarefinancenews.com/news/twitter-account-posting-every-icd-10-code-online>

Using the 80/20 rule – or the Law of the Vital Few – was essential to identify and focus transition efforts on the subset of codes that would account for the vast majority of reasons for exam.

For example, a study by JACR based on a sample of five hospitals found that of all ICD-9 codes, only 3,401 (24.3%) were used to report any primary diagnosis. Of all claims, 50% were billed using just 37 (0.3%) primary codes; 75% with 131 (0.5%), and 90% with 348 (2.5%). Those 348 ICD-9 codes mapped onto 2,048 ICD-10 codes, *representing just 2.9% of all ICD-10 codes*.⁹

vRad followed a similar analytical approach, but used imaging procedure information input from thousands of hospitals and leveraged the practice's clinical data repository of over 35 million imaging studies in order to ensure statistical significance and maximum client impact:

- We first identified imaging procedures that were most frequently ordered to focus analytics on those with the highest volume and potential clinical impact to patients and revenue impact to clients.
- We next determined the most frequently billed diagnoses (ICD-9 codes) for each procedure that was selected.
- These frequently used ICD-9 codes were then evaluated for supporting medical necessity of the radiology exam.
- Medicare payment policies were reviewed to ensure that the prioritized subset of ICD-9 codes was covered for reimbursement.
- Reimbursable ICD-9 codes were then mapped to their most relevant ICD-10 code counterparts.
- The ICD-10 codes were subsequently evaluated to determine what actual clinical information would be required within the report for coders to identify the appropriate reason for exam.
- These clinical content requirements were then used as the underlying source content to drive the development and design efforts for vRad's client-facing ICD-10 transition tools.
- As a result of our 80/20 analytical approach, vRad was able to create an online and automated tool that represented 99% of our billed volume and 97% of our billed revenue.

Step 3 – Automated Intelligence

vRad's overall guiding principle in its clients' transition to ICD-10 was *Primum non nocere*: First do no harm.

Since the majority of vRad's clients already use the practice's online management system (OMS) to initiate and track imaging studies, vRad decided to incorporate any changes within the existing solution's automated workflows. Upgrading a preexisting, user-friendly online portal minimized impact to clients and provided a solid foundation for faster adoption of new workflows since technologists and referring physicians were used to the interface, trusted its reliability and were accustomed to ongoing site updates based on their feedback.

vRad proactively transitioned the majority of its clients to ICD-10 by integrating an automated "Intelligent Branching" solution into its preexisting study order workflow. Technologists and/or referring physicians can optimize clinical and financial outcomes simply by answering a dynamic checklist using information that should be readily available and relevant to making the exam order decision.

⁹ <http://www.ncbi.nlm.nih.gov/pubmed/26212622>

The end result: the pre-population of the imaging report with detailed clinical history descriptions required to inform (1) the interpreting radiologist for better clinical care, and (2) the coder for the proper selection of the relevant ICD-10 code for optimal reimbursement. For example, See Figure 4: Radiology Reports.

Larger client facilities typically connect to vRad’s telemedicine platform via HL7 for final interpretations, minimizing or eliminating interaction with our Intelligent Routing OMS-based portal. As a result, these clients were transitioned to ICD-10 using an alternative fully automated and customized solution. One client reduced its rejection rate for insufficient clinical documentation from 64% to 8% in just one month in partnership with vRad and our ICD-10 best practice workflow implementation.

Consider two facilities, each sending the same client exam type to vRad for interpretation. vRad’s Intelligent Branching ICD-10 transition tool will adapt to the specifics of each facility’s patient; Facility A Patient will require four questions to be answered as part of the ordering process, while Facility B Patient will require seven questions. (Figure 3: Radiology Orders)

Facility A sends a “CHEST XRAY WITH FRONT AND SIDE VIEWS”

Facility B sends a “CXR 2 Frontal and Lat”

- First, notice that the two clients have sent the same study type using different nomenclature. Step 1 is for the vRad vCoder to normalize the study types to the internal vRad standardized convention: XR Chest 2 Views Frontal & Lat. Without this step, the use of an automated and scalable solution would not be possible.

Figure 3: Radiology Orders

Radiology Order: Facility A Patient

*Ordered as: CHEST XRAY WITH FRONT AND SIDE VIEWS

*vRad Procedure: XR CHEST 2 VIEWS FRONTAL & LAT

Reason For Exam

Based on the patient's chief complaint and the medical record, please provide all pertinent indications for the radiologic exam(s). Please select all indications that apply from the lists below. Provide detailed information in the "OTHER" sections when none of the listed conditions apply to the patient's current history or where additional information is needed.

*Reason(s) for exam:

- ☐ Pain
- ☐ Injury or Trauma
- ☐ Signs and Symptoms
- ☒ Existing Condition or Disease
- ☐ Screening Exam or Abnormal Findings

*Which condition or disease prompted today's chest exam?

- ☐ Cardiovascular condition or disease
- ☐ Cardiac device adjustment and management (e.g. defibrillator)
- ☒ Chest deformity
- ☐ GI device placement or management (e.g. NG tube - EXCLUDES lap band)
- ☐ Lung condition and disease
- ☐ Non-vascular catheter/shunt placement or management
- ☐ Vascular catheter placement, adjustment or replacement (e.g. PICC)
- ☐ Other

*Is the patient pregnant?

- ☐ Yes
- ☒ No
- ☐ N/A
- ☐ Unknown

*Any prior surgery in imaged area?

- ☐ Yes
- ☒ No
- ☐ Unknown

Radiology Order: Facility B Patient

*Ordered as: CXR 2 FRONTAL AND LAT

*vRad Procedure: XR CHEST 2 VIEWS FRONTAL & LAT

Reason For Exam

Based on the patient's chief complaint and the medical record, please provide all pertinent indications for the radiologic exam(s). Please select all indications that apply from the lists below. Provide detailed information in the "OTHER" sections when none of the listed conditions apply to the patient's current history or where additional information is needed.

*Reason(s) for exam:

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- ☐ Lung condition and disease
- ☐ Non-vascular catheter/shunt placement or management
- ☐ Vascular catheter placement, adjustment or replacement (e.g. PICC)
- ☐ Other

*Which cardiovascular condition or disease?

- ☒ Aortic aneurysm
- ☐ Aortic Dissection (Thoracic aorta)
- ☐ Atrial fibrillation
- ☐ Cardiac arrest
- ☐ Cardiomegaly
- ☐ Congestive Heart Failure (CHF)
- ☐ Coronary Artery Disease (CAD) or atherosclerosis
- ☐ Deep Vein Thrombosis (DVT)
- ☐ Effusion, Pericardial
- ☐ Acute Myocardial Infarct
- ☐ Pericarditis
- ☐ Other

*Has the aneurysm ruptured?

- ☒ Ruptured
- ☐ Without rupture

*Is the patient pregnant?

- ☐ Yes
- ☒ No
- ☐ N/A
- ☐ Unknown

*Any prior surgery in imaged area?

- ☐ Yes
- ☒ No
- ☐ Unknown

Normalized exam type

Automatically – and intelligently – customized reason for exam based on normalized exam type

- Both ordering facilities would then use vRad’s OMS to provide “pertinent indications” to be used to auto-populate the patient’s clinical history.
- For both patients, each facility is initially presented with the same four required questions, informed by the exam type (XR Chest 2 Views Frontal and Lat) including “Reason(s) for Exam.” The specific questions are automatically prompted and personalized by the normalized study type.
- Facility A indicates that the reason for exam is an *Existing condition* or disease and further clarifies that the condition relates to a *Chest deformity*, versus other options that have been automatically pre-populated.
 - Because of the selection of Chest Deformity, there are no additional questions that are required to be filled out – and the ordering facility can quickly answer the two remaining mandatory questions required of all exam orders.
 - In summary: four required questions asked and answered, which were personalized based on the normalized study type. The resulting selections are integrated into the information provided to the interpreting radiologist and also made part of the report provided back to the client as part of the patient’s Clinical History. Please note that the selections are presented in “paragraph” form rather than as a list of answers. Feedback from clients informed the design of this automated formatting as easier to read and digest for the radiologist creating the imaging report and referring physician using it for treatment.
 - This example, with four required questions, is most representative of our client experience post-transition; 4.7 is the average number of questions per order since the October 1 transition date.
- However, while Facility B also indicates that the reason for exam is an *Existing condition or disease*, the indication selected is *Cardiovascular*, rather than *Chest deformity*.
- This selection prompts a refresh of the mandatory questions, requiring the facility to clarify the type of cardiovascular condition, which is then selected to be *Aortic aneurysm*. The Intelligent Branching then adds questions specifically related to the prior response – for example, whether or not the aneurysm has ruptured – and if so, where the aneurysm is located.
 - Again, four questions to start, but based on each response, updated and refreshed questions populate the checklist based on Intelligent Branching and are provided for additional clarification, detail and insight for physicians, referring physicians and coders – resulting in seven total questions in order to relay the appropriate information specific to the patient.
 - The resulting selections are integrated into the information provided to the interpreting radiologist and also made part of the report provided back to the client as part of the patient’s Clinical History. (See Figure 4: Radiology Reports).

Figure 4: Radiology Reports

Radiology Report: Facility A Patient

SAMPLE REPORT—Patient information removed.

Sample Healthcare Facility

Final Radiology Report 24/7/365 assistance Call: 866.941.5695 Online chat: <https://access.vrad.com>

Patient Name: Doe, Jane	MRN: M00000876
DOB (Age): 12/25/YYYY (80)	Gender: Female
Date of Exam: 3/27/YYYY 9:45:25 AM	Accession: 642.0010101
Referring Physician: James Smith, MD	# of Images: ###

EXAM:
XR CHEST 2 VIEWS FRONTAL & LAT.

CLINICAL HISTORY:
80 years old, female; Existing Condition or Disease; Chest deformity

TECHNIQUE:

Radiology Report: Facility B Patient

SAMPLE REPORT—Patient information removed.

Sample Healthcare Facility

Final Radiology Report 24/7/365 assistance Call: 866.941.5695 Online chat: <https://access.vrad.com>

Patient Name: Doe, Jane	MRN: M00000876
DOB (Age): 12/25/YYYY (80)	Gender: Female
Date of Exam: 3/27/YYYY 9:45:25 AM	Accession: 642.0010101
Referring Physician: James Smith, MD	# of Images: ###

EXAM:
XR CHEST 2 VIEWS FRONTAL & LAT.

CLINICAL HISTORY:
80 years old, female; Existing Condition or Disease; Cardiovascular condition or disease; Aortic aneurysm; Thoracic

TECHNIQUE:

The information from the dynamic checklist is presented as a clinical history “story” that is easy to quickly understand.

“One of my clients called to tell me that their chief of radiology was upset. That’s never a good call to get. However, he went on to explain that because of vRad’s transition tool, reports coming through at night have more and better patient history and granularity than what comes across his desk by day. By day, he gets “Pain.” From vRad, he gets “Pain, headache, migraine, chronic migraine and so on.” As it turns out, he’s not upset with vRad, but rather disappointed with the hospital’s EMR because it does not ask or force the reason-for-exam questions. He saw how our workflow presents for the rad tech and said we designed it exactly as it should be done.”

Bill “Buck” Schneider, MHA, vRad Area Director

Best Practices to Share Across Practices

vRad has developed expertise on the transition to ICD-10 out of necessity: the scale and scope of our practice required a state of readiness that could not have been achieved with off-the-shelf solutions. Ignoring deadlines and maintaining the status quo were not options. vRad’s history of clinical and operational collaboration, patent-pending innovation with data normalization and a clear definition of our objectives were all critical to the successful transition of our 2,100+ client facilities to ICD-10 in time for the 2015 deadline.

While other practices, hospitals and health systems all have unique requirements for their transition solutions, the tool created by vRad – and the lessons learned – are applicable across imaging. We have and will continue to provide guidance, education and assistance to our clients and to the general radiology market because it’s the right thing to do for the health of patients and the practice of radiology. (See ICD-10 Transition Resource List.)

Figure 5: vRad ICD-10 Transition Implementation Guide

Abdomen

Abdomen: Pain – Step I		
Step – II	Step – III	
Acute Colic Epigastric Flank Generalized Localized Periumbilic Rebound Pain Tenderness Other (Specify)	RUQ, RLQ, LUQ, LLQ, Lower, Upper, Other (Specify)	

Abdomen: Injury or Trauma – Step I		
Step – II	Step – III	Step – IV
Blow Contusion Crushing Foreign Body Laceration Penetrating Puncture Sprain or Strain Wound Other (Specify)	RUQ, RLQ, LUQ, LLQ, Abdominal wall, Epigastric region, Flank, Periumbilic region	If "Flank" selected, specify laterality: Left, Right, Bilateral

Abdomen: Signs & Symptoms – Step I	
Step – II	Step – III
Bloating Constipation Fever	
Mass Lump or Swelling	Specify Location (If mass, lump or swelling selected): RUQ, RLQ, LUQ, LLQ, Upper, Epigastric, Generalized, Periumbilic
Nausea Vomiting Other (Specify)	

Abdomen: Condition or Disease – Step I		
Step – II	Step – III	Step – IV
Abscess	Indicate anatomical location of the abscess: Free text	
Ascites	Malignant (Specify Type of Cancer): Abdomen, Bile ducts, Gallbladder, Kidney, Small Intestine, Large Intestine, Liver, Pancreas, Spleen, Stomach, Ureter Other (Specify)	Kidney Or Ureter - Left, Right, Bilateral
Cancer	Abdomen Bile ducts Gallbladder Kidney, Left Kidney, Right Intestine, Large Intestine, Small Liver	RUQ, RLQ, LUQ, LLQ, Epigastric region, Periumbilic region Primary site Secondary or metastatic site

For example, vRad created an ICD-10 Transition Implementation Guide for clients (Figure 5). It is documentation – or a living library – of the underlying insight used to inform our Intelligent Branching solution for 27 anatomical groupings. Clients have used the implementation guide content to create training materials, checklists and other tools with which to educate their organizations on what specific information must be captured at the time of order to meet ICD-10 obligations – especially for those imaging exams not being sent to vRad and therefore not leveraging the online OMS-based automated checklist. Clients' schedulers and technologists, for example, are using the guide to elicit required "reason for study" input while taking the order or performing the procedure.

ICD-10 Transition Resource List

- vRad Reimbursement and Coding Educational Webinar Series (live and on-demand recording): http://webinars.vrad.com/reimbursement_series
- ICD-10-CM Official Guidelines for Coding and Reporting, 2015; Centers for Disease Control and Prevention (CDC) website: <http://www.cms.gov/Medicare/Coding/ICD10/Downloads/icd10cm-guidelines-2015.pdf>
- CMS ICD-10 resources: <http://www.cms.gov/Medicare/Coding/ICD10/index.html>
- American Academy of Professional Coders Resources (AAPC) website: <http://www.aapc.com>

Additional Best Practices Include:

- **Iterate:** vRad staged the implementation of the ICD-10 transition tool so that we asked for only what was necessary as it became necessary. For example, at launch, questions were only made mandatory if they were actually needed to provide the minimum amount of information given the data requirements dictated by the grace period provided by CMS. The key objective was to get clients used to the new process and comfortable with the Intelligent Branching solution. We believed that once key stakeholders (doctors, coders, Finance, hospital C-suite) saw the benefits from the enhanced content in the imaging studies for clinical and reimbursement, they would be more open to fill out additional information as the mandated cutover on October 1, 2016, got closer.

In fact, we found that the majority of clients (including both Finals and Preliminary study clients) filled out both the mandatory and non-mandatory information almost immediately, and we were able to move our client base to 100% mandatory compliance in December – only two months post-launch.

- **Configurable Flexibility:** vRad made the Intelligent Branching process configurable so that as we learned and got feedback from our clients, we could easily make changes without additional IT investment. Configurability is available at the facility-specific level to ensure our ability to partner and respond to client requests when applicable. For example, the CMS grace period had a caveat: Medicare NCDs or LCDs (National and Local Coverage Determinations) that require more specific ICD-10-CM codes can supersede the 12-month delay. Because of the portal's flexibility, vRad was able to configure questions as mandatory or optional based on payer type and geographic specificity.
- **Intelligent Branching:** Based on client feedback, vRad opted not to show the full set of questions potentially required by the procedure type. Because follow-on questions are “intelligently” determined by prior answers, the online tool in vRad's OMS only displays the minimum amount of mandatory input. Answers then trigger a branch set of questions until all required information is complete. This approach minimizes frustration and perceived complexity by preventing clients from seeing questions that are irrelevant and unnecessary for the case at hand. For example, while some branching could extend to over 20 questions based on the procedures ordered and initial indications, the actual average number required for clients is only 4.7.
- **Minimize Cognitive Load:** vRad approached its ICD-10 online tool design as it would any online experience, that is, using direct response and user interface (UI) best practices to reduce real and perceived complexity. “Total cognitive load,” or amount of client effort required to navigate the tool, affects how users find information and complete required questions. Intelligent Branching is one example of minimizing cognitive load; using check boxes vs. drop down boxes for responses is another simple, but effective decision to improve the client experience. Because check boxes make all options visible, responders can quickly compare and select the best option. Check boxes are also easier to select using simple mouse movements, and therefore are more likely to result in accurate and more complete responses.¹⁰
- **Tell a Story:** As previously mentioned, it is not a best practice – or practical – to provide the actual ICD-10 code as part of the radiology report. The code itself does not provide consumable content or insight for the physician or the coder. Providing relevant information – or story – in the clinical history makes it easier, more manageable and user-friendly. It humanizes the patient, provides actionable insight to the physician to assist in interpretation and improves the coder's selection for optimized reimbursement.

Furthermore, consistent and standardized wording rather than free-flow text is helpful for NLP integration to extract insight from reports for imaging analytics and benchmarking, as well as to assist in automated coding processes.

- **Communicate, Communicate, Communicate:** vRad successfully transitioned over 2,100 client facilities as part of a coordinated and transparent onboarding process. The practice began exposing clients to the transition over a year ahead of time, provided context, set expectations, reinforced the “why” and the “how,” and provided multiple opportunities

¹⁰ <https://www.nngroup.com/articles/minimize-cognitive-load/>

for clients to ask questions and be exposed to experts from multiple disciplines related to ICD-10. vRad hosted multiple webinars, held 1:1 training sessions, and provided online training and documentation to ensure that clients were prepared well before the October 1 transition date. The communication was critical to ensure clients understood vRad's transition steps and to overcome the misconceptions and the misinformation in the media.

It Ain't Over

Even with the respite in terms of the level of specificity for ICD-10 coding until October 1, 2016, many practices are already experiencing a hit to their revenue cycle. And the grace period deadline will soon be upon us. Is your practice or service line ready? vRad is – and so are our 2,100+ client facilities and the 6 million plus imaging studies they will be sending to us this year. vRad was able to avoid the “catastrophic repercussions on cash flow” predicted prior to transition – and being felt by over half of radiology practices.

vRad has not seen any negative impact on our key performance indicators (KPIs) since implementation of ICD-10. In fact, our practice has experienced a 19% reduction in addendums since our transition. Other critical KPIs, such as days to post charges, DSO and denials from payers, have all remained stable since the October 1, 2015, implementation date. We also continue to get positive comments and kudos from our clients.

vRad will continue to provide the tools and guidance to help our clients with clinical, operational and revenue cycle improvements leveraging our ICD-10 solution. Assistance and insight will also be available to all practices and imaging service lines via webinars, white papers and additional content created in expectation of the October 1, 2016, deadline. It's the right thing to do for the health of the patients we collectively serve – and the health of the practice of radiology. For vRad, being a partner for practice excellence is not dictated by client relationships.

Let's Talk

vRad is the recognized leader in teleradiology services, imaging analytics and deep learning-assisted diagnostics. If you're ready to learn what else a high-value partnership with vRad can do for you, [contact us](#) and a vRad Expert Advisor will be in touch.

▶ Click to Contact vRad

About the Authors

Benjamin W. Strong, MD (ABR, ABIM)

Chief Medical Officer

Ben Strong, MD is Chief Medical Officer of Virtual Radiologic. With a focus on maintaining and finding new ways to enhance our practice environment, Dr. Strong plays a critical role in advancing vRad's efforts, along with its radiologist and hospital partners, in expanding access, improving quality and reducing the total cost of care. Dr. Strong joined vRad as a teleradiologist in July 2004, and served as a medical director within vRad's practice from October 2005 to October 2012.

Dr. Strong earned his medical degree from the University of Arizona College of Medicine, Tucson, completed his residency in internal medicine at Dartmouth-Hitchcock Medical Center, Lebanon, New Hampshire, and completed both a radiology residency and a fellowship in musculoskeletal MRI at the University of Arizona, Arizona Health Sciences Center in Tucson. Dr. Strong is board certified in both radiology and internal medicine and is licensed to practice in all 50 U.S. states and in a number of foreign countries.

Shannon Werb

Chief Operating Officer & Chief Information Officer

Shannon Werb serves as vRad's Chief Operating Officer and Chief Information Officer, responsible for vRad's radiology practice operations, technology platforms, and data strategy. This includes overseeing the company's forecasting, physician services, and U.S.-based, 24x7 client support and operations center, and ensuring service delivery excellence to vRad's radiologists, clients and the patient communities they collectively serve.

Shannon was selected as a 2015 "Health IT Change Agent" for leading innovation in radiology by Health IT Outcomes and he has authored numerous whitepapers and journal publications on subjects including vendor-neutral archiving, next generation PACS, cloud-based solutions, and enterprise content management. He has extensive experience leading organizations and successfully developing enterprise solutions, most recently at Acuo Technologies, now part of Perceptive Software, as Chief Operating Officer and Chief Strategy Officer.

Sharon M. Roeder, CPC

Senior Manager of Payer Coding Compliance

As the Senior Manager of Payer Coding Compliance at vRad, Sharon played a central role in the vision, planning and execution of vRad's successful transition to ICD-10. In addition to her coding compliance responsibilities, Sharon is an avid educator, bringing the latest information to the coding and radiologist communities via an online webinar series.

Sharon has been a certified coder with the American Academy of Certified Coders for over 15 years. Prior to joining vRad in early 2013, Sharon was the Director of Reimbursement at McKesson Specialty Health, formerly US Oncology.

About vRad

vRad (Virtual Radiologic) is the leading national teleradiology services and telemedicine company, with over 350 U.S. board-certified and eligible physicians, 75% of whom are subspecialty trained. Its clinical expertise and evidence-based insight help clients make better decisions about the health of their patients and their imaging services. vRad is an affiliate of MEDNAX, Inc. (NYSE: MD), a national medical group specializing in neonatal, anesthesia, maternal-fetal, pediatric cardiology and other pediatric physicians services.

vRad interprets and processes patient imaging studies on the world's largest and most advanced teleradiology PACS for 2,100+ client hospital, health system and radiology group facilities in all 50 states. The practice has 15 issued patents for innovation in telemedicine workflow, and is a recognized leader in imaging analytics and deep learning-assisted diagnostics. It is also a past winner of [Frost & Sullivan's Visionary Innovation Award](#) for Medical Imaging Analytics (North America). For more information, please visit www.vrad.com. Follow us on [Twitter](#), [Facebook](#) and [LinkedIn](#).

vRad Snapshot

- Founded 2001 — an affiliate of MEDNAX (NYSE: MD)
- 350+ U.S. board-certified and eligible radiologists, 75% subspecialty trained
- 2,100+ hospital, health system and radiology group facilities served in all 50 states
- U.S.-based, 24/7 operations and technical support center
- World's largest and most advanced PACS
- 15 issued patents for innovation in telemedicine workflows; additional patents pending on data normalization and deep learning applications for computer-assisted diagnostics
- The largest – and only – radiology patient care benchmarking platform (vRad RPCSM Indices) for statistically significant national and peer performance comparisons
- Nationally recognized for innovation and clinical leadership, including Frost & Sullivan Visionary Innovation Award Winner: Medical Imaging Analytics — North America
- ICD-10 ready and 100% of radiologists trained by October 1, 2015
- Standard-setting Quality Assurance program emphasizing performance improvement since 2004 – delivers 99.7% accuracy
- Trusted by stroke and trauma centers around the country – patent-pending stroke and trauma workflows increase the speed of high-quality radiology reports for patients