UT Southwestern Medical Center

Carotid Doppler Ultrasound - Report Standardization to Improve PQRS Measure Outcome

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Disclosures

- Travis Browning, MD
  - Physician Advisory Council – Hewlett-Packard through VisionIT
  - Clinical Advisor – McKesson Enterprise Medical Imaging Group
- Kristen Bishop, MD
  - None
- Richard Batz, MD
  - None
- Julie Champine, MD
  - Physician Advisory Council – peerVue (McKesson Enterprise Medical Imaging Group)

Objectives

- To evaluate and improve successful application of PQRS measure #195 for carotid Doppler ultrasound imaging
  - PQRS – Centers for Medicare & Medicaid Services (CMS) Physician Quality Reporting System
- To standardize the practice's reporting format and process including across
  - Different divisions
  - Different hospital systems

PQRS Measure #195 (NQF 0507)

- Physician Quality Reporting Measure
  - Stenosis measurement in carotid imaging reports
    - Percentage of final reports that include direct or indirect reference to measurements of distal internal carotid diameter as the denominator for stenosis
    - Applied via CPT 3100F
    - Applicable for Medicare populations only

The System

- Locations – 2 hospital systems
  - Academic practice
  - County hospital system
- Radiologists
  - 3 reporting divisions
    - Abdominal, VIR, General Radiology
  - 33 faculty radiologists
  - 6 radiology fellows
  - 53 radiology residents
- Radiology reporting application
  - Nuance PowerScribe 5.0
  - Nuance PowerScribe 360
- Automated billing coding system
  - 3M CodeRyte CodeAssist

Building the Team

- Organized under the hospital practice medical directors
- Included
  - Abdominal, VIR, and General Radiology representatives
  - Informaticist and structured reporting champion
  - Administrative revenue cycle manager
- Utilized MOC (Maintenance of Certification) Quality Project as project basis and incentive for participation
  - PDSA cycle (Plan-Do-Study-Act) as quality improvement project framework

Evaluation

- Radiology practice had previous consensus to use stenosis assessment standards
  - Based on Society of Radiologists in Ultrasound Consensus Conference from 2003
- Inconsistent reporting of this standard
  - Mix use of personal and system templates
  - System template did not reference the standard
- Reviewed ACR for best practice in reporting
  - http://www.acr.org/~/media/ACR/Documents/P4P/Resources/2014/Specs/Measure195_specs_2014.pdf
- Pre-change application of PQRS CPT code was not 100%
  - Target was 100% success of application

Reporting Template

- System key changes
  - Technique section discrete language regarding use of reporting standard for measurements
  - Structured formatting of the report to include all pertinent Doppler measurements
    - Template usability testing by project team member
  - Deletion of conflicting system templates
- Use reinforced by medical directors and division leaders

Improved system template

EXAM: [US DOPPLER CAROTID BILATERAL]

HISTORY: [ ] -old [ ] with [ ]

COMPARISON: [None]

TECHNIQUE: Survey ultrasound imaging of the bilateral extracranial carotid arterial system was performed including color and spectral Doppler evaluation with representative images obtained. Velocity criteria are extrapolated from diameter data validated with angiographic measurements as based on the Society of Radiologists in Ultrasound Consensus Conference Radiology 2003; 229; 340-346 validated on internal institutional data.

FINDINGS:
Right Carotid:
Common Carotid Artery (CCA): [No significant tortuosity] [No atherosclerotic plaque formation] [ ]
Extracranial Internal Carotid Artery (ICA) and Bulb: [No significant tortuosity] [No atherosclerotic plaque formation] [ ]
External Carotid Artery (ECA): [Normal high resistance waveform]
CCA Peak Systolic Velocity (PSV): [ ]
ICA PSV: [ ]
ICA End Diastolic Velocity (EDV): [ ]
ICA/CCA PSV ratio: [ ]
ECA PSV: [ ]
Findings by color and spectral Doppler evaluation are [concordant] with grayscale images.

Left Carotid:
Common Carotid Artery (CCA): [No significant tortuosity] [No atherosclerotic plaque formation] [ ]
Extracranial Internal Carotid Artery (ICA) and Bulb: [No significant tortuosity] [No atherosclerotic plaque formation] [ ]
External Carotid Artery (ECA): [Normal high resistance waveform]
CCA Peak Systolic Velocity (PSV): [ ]
ICA PSV: [ ]
ICA End Diastolic Velocity (EDV): [ ]
ICA/CCA PSV ratio: [ ]
ECA PSV: [ ]
Findings by color and spectral Doppler evaluation are [concordant] with grayscale images.

Vertebral Arteries:
Right: [Antegrade] flow.
Left: [Antegrade] flow.

Other: [None]

IMPRESSION:
1. Right carotid system: [Normal extracranial carotid system]
2. Left carotid system: [Normal extracranial carotid system]
3. Vertebral system: [Normal antegrade flow in the vertebral arteries bilaterally]

ICAVL Accredited Vascular Laboratory

Data

- Used billing data as source of information
  - Coding system applied both imaging exam and PQRS CPT codes
  - Date Range 1/1/2013 to 9/25/2014
    - Initial change date 9/16/2013
- Data reviewed for successful application of the PQRS CPT code
- Reports where PQRS CPT code failed to be applied were reviewed for system template usage

PDSA Cycles

- Pre-change
  - Initial review of data – successful application of PQRS code 63%* of the time
    - *Initial review data later altered by subsequently identified issues with billing data
  - Reporting system template change
    - After hours 9/16/2013

PDSA Cycles

- Data evaluation 12/19/2013
  - Review: Identified exams where PQRS code was not applied
    - System template was always used
    - Coding system should have applied code
  - Vendor response: PQRS only applied to Medicare patients and "failures" were not Medicare patients
  - Change: Review to refocus on Medicare patients
    - Initial provided billing data report had been auto-filtered for Medicare patients
    - Change: Report to include and indicate all Payors, data then manually filtered for Medicare by project team

PDSA Cycles

- Data evaluation 1/8/2014
  - Review: Identified Medicare exams where PQRS code was not applied
    - System template was always used
    - Coding system should have applied code
  - Vendor: Based on original and current Payor status changing Medicare status, the PQRS code was not being applied
  - Change: Data report amended to include original and current Payor

Removing Duplicates

- Addition of original and current Payor element
  - Highlighted apparent duplication of data
    - Each Payor change created a new billing item and a retraction of billing item
  - 1713 carotid Doppler ultrasound exams in data range
    - 1637 individual patients
  - 463 instances of rebilling due to Payor changes
    - Affected 360 patients
    - Most with 1 instance per patient
    - As many as 13 instances per patient
- Future data reports designed to filter this out
- *Payor and changing Payor issues altered the initial review data

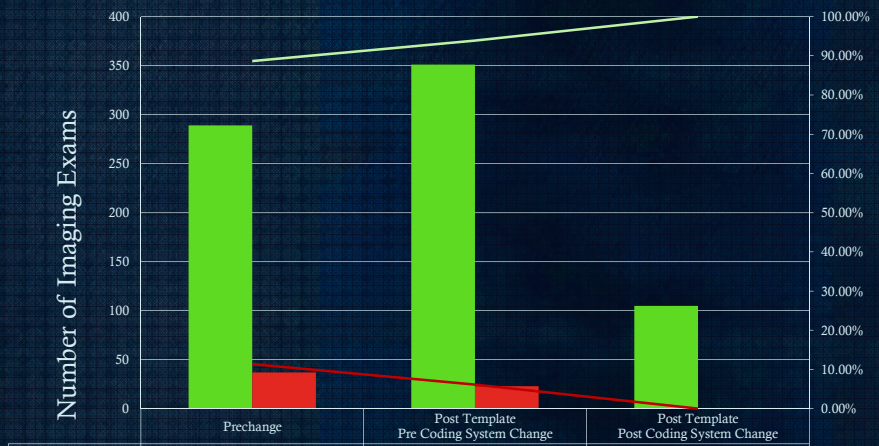
PDSA Cycles

- Data evaluation 3/27/2014
  - Review: Identified Medicare exams where PQRS code not applied (both original and current Payor examples)
    - System template was always used
    - Coding system should have applied code
  - Vendor response: Payor changing status continues to affect the process
  - Change: Requested vendor to apply PQRS regardless of Payor

PDSA Cycles

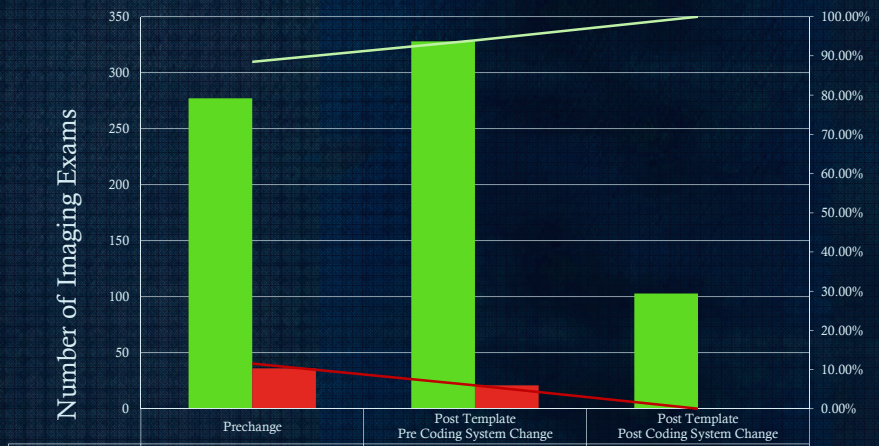
- Data evaluation 6/24/2014
  - Review: Continued to identify failures in applying PQRS code
    - System template was always used
    - Coding system should have applied code
  - Vendor response: Requested change had not been made
  - Change: Vendor change made and confirmed on 6/27/2014
    - Final evaluation 10/1/2014 with successful application of PQRS code 100% of the time

PQRS Measure #195 – Medicare Original Payor



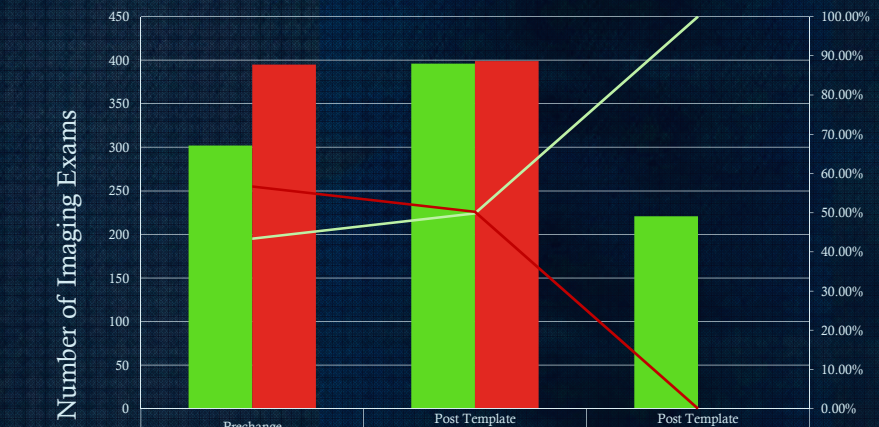
	Prechange	Post Template Pre Coding System Change	Post Template Post Coding System Change
PQRS Success	289	351	105
PQRS Failure	37	23	0
% PQRS Success	88.65%	93.85%	100.00%
% PQRS Failure	11.35%	6.15%	0.00%

PQRS Measure #195 – Medicare Adjusted Payor



	Prechange	Post Template Pre Coding System Change	Post Template Post Coding System Change
PQRS Success	277	328	103
PQRS Failure	36	21	0
% PQRS Success	88.50%	93.98%	100.00%
% PQRS Failure	11.50%	6.02%	0.00%

PQRS Measure #195 – All Payors



	Prechange	Post Template Pre Coding System Change	Post Template Post Coding System Change
PQRS Success	302	396	221
PQRS Failure	395	399	0
% PQRS Success	43.33%	49.81%	100.00%
% PQRS Failure	56.67%	50.19%	0.00%

Project Outcomes

- 100% successful application of PQRS CPT code for measure #195 (NQF 0507) when using the system template
- No identified instances of radiologist failure to use the appropriate template as the cause for non-application of the PQRS CPT code
- Improved understanding of the billing processes
  - As well as the abilities and limitations of the automated billing coding system
- Interest from other divisions to replicate this project for carotid MRA and CTA imaging

Lessons Learned

- Billing data is not as clean as might be anticipated
  - Changes in Payors complicates the process
  - Data is often centric around billing date rather than exam date
  - Requires time to pass prior to assessing change effect (related to billing cycle length)
  - Rebilling can cause data duplication if you are unaware of the process
- Physician practice pattern can be effectively directed through use of system templates
  - In fact, no radiologist was ever the point of process failure in this project
- Utilizing automated tools requires in depth understanding and testing of workflows to assess impact of changes
  - Vendor relationship management is important to such projects