



# Introduction to WVU Radiology

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Department of Radiology

Section of Cardiothoracic Imaging

Special thanks to Jeffery P. Hogg, MD





# Radiology Orientation Objectives

- Why is it important to order appropriate imaging?
- How do you know which imaging test to order?
- How can you ensure the best imaging interpretation for the patient?
- How much does imaging cost?
- How do you get in contact with the radiologists?





# Help us help you!

- Role of Clinician: Order most appropriate study and communicate relevant clinical history





# Help us help you!

- Role of Clinician: Order most appropriate study and communicate relevant clinical history
- Role of Radiologist: act on relevant clinical history to plan, expedite, and report best imaging





# Help us help you!

- Role of Clinician: Order most appropriate study and communicate relevant clinical history
- Role of radiologist: act on relevant clinical history to plan, expedite, report best imaging

End result= We help the patient!





# Why is it important to order appropriate imaging?





First, do no harm...



# What harm comes from Wrong Imaging?

- Unneeded radiation exposure





# What harm comes from wrong imaging?

- Unneeded radiation exposure
- Delay in diagnosis



# What harm comes from Wrong Imaging?

- Unneeded radiation exposure
- Delay in diagnosis
- Exposure to contrast or other drugs





# What harm comes from Wrong Imaging?

- Unneeded radiation exposure
- Delay in diagnosis
- Exposure to contrast or other drugs
- Financial harms
  - Loss of income by missing work
  - Costs to patient for the wrong study you order
  - Costs to healthcare system



## WVUH Basic Compliance

## Lesson 2: Fraud and Abuse

## Course Contents

Course Introduction

Lesson 1: OIG  
Guidelines**Lesson 2: Fraud and  
Abuse**Lesson 3: Laws and  
Regulations

Course Review

**Examples of Fraud, Waste and Abuse- Provider****Provider**

- Making false statements.
- Improper billing practices
  - Up-coding/misreporting of codes
  - Billing for non-covered services
  - Billing with inappropriate modifiers
  - Unbundling of charges
- Altering of medical or billing records inappropriately.
- Prescribing drugs inappropriately.
- Performing or ordering inappropriate or unnecessary procedures/tests.

What percentage of medical care is wasted?





What percentage of medical care is wasted?

~30%, according to the  
Institute of Medicine





# How to Choose most appropriate Imaging???







# American College of Radiology Appropriateness Criteria





# ACR Appropriateness Criteria

- Accepted “National standard” for quality imaging ordering
- Created by expert panels spanning multiple medical specialties
- Evidence-based recommendations
- Continuously updated and current
- Complies with PAMA federal legislation effective Jan 2017





# Who's on the Expert Panels?

- American Academy of Neurology
- American Academy of Orthopedic Surgeons
- American Academy of Otolaryngology-Head and Neck Surgery
- American Academy of Pediatrics
- American Academy of Neurological Surgeons
- American College of Cardiology
- American College of Chest Physicians
- American College of Emergency Physicians
- American Congress of Obstetricians and Gynecologists





- American College of Rheumatology
- American College of Surgeons
- American Gastroenterological Association
- American Pediatric Surgical Association
- American Society of Hematology
- American Society of Nephrology
- American Urological Association
- Society for Vascular Surgery
- Society of Gynecologic Oncologists
- Society of Nuclear Medicine and Molecular Imaging
- Society of Thoracic Surgeons
- American College of Radiology





# How do we use it?

- “ACR Appropriateness Criteria” under EPIC links
- CONNECT Home page under Physician Reference
- EPIC at point of radiology order entry
- Internet search [www.acr.org/ac](http://www.acr.org/ac)





# Physician Dashboard

**In Basket Glance**

- Show only new messages
- Results (2)
- Rx Request (3)
- Pt Reminder (1)
- My Open Encounters (4)
- Staff Message (1)
- Nurse Triage (2)
- Triage Queue (3)
- Cosign - Clinic Orders (1)
- Cosign Notes (2)
- Letter Queue (1)

Refresh as of 10:51:01 AM

**Report Listing**

Click the title of this component to launch Reporting Workbench.

No reports are available for display.

Refresh

**Visit Statistics**

|           | Q2 '14 | QTD |
|-----------|--------|-----|
| Visits    | -      | -   |
| Work RVUs | -      | -   |

**Schedule Glance**

MARTINSBURG, ZACH D
 7/1/2014

Show Patient Names
 Today

|                   | Time      | MRN          | Type | Dept | Status |
|-------------------|-----------|--------------|------|------|--------|
| 09:00 a - 09:15 a | 016030249 | Office Visit | DFM  | Sch  |        |
| 09:30 a - 09:45 a | 016030942 | Office Visit | DFM  | Sch  |        |
| 10:00 a - 10:15 a | 016029548 | Office Visit | DFM  | Sch  |        |
| 10:30 a - 10:45 a | 016028144 | Office Visit | DFM  | Sch  |        |
| 10:30 a - 10:45 a | 016028847 | Office Visit | DFM  | Sch  |        |
| 11:00 a - 11:15 a | 016027443 | Office Visit | DFM  | Sch  |        |

Refresh as of 10:51:01 AM

**My Admitted Patients**

Total: 0 Patients

Refresh as of 10:51:01 AM

**Pending Discharges**

| Patient Name | Pending Discharge Date - Time |
|--------------|-------------------------------|
| ID Sex/Age   | Unit - Room - Bed             |
| 0 Patients   |                               |

Refresh as of 10:51:01 AM

**Ambulatory Clarity reports**

Ambulatory Clarity Reports

Refresh as of 10:51:01 AM

**Web Search Links**

- Health Sciences Center
- Epic/Clarity Report Request Form
- WVU Hospitals
- Epic Systems
- Clarity Reporting Dictionary
- Radar E-Learning Module
- Staff ID's
- On-Call
- Tip Sheet
- Merlin Suggestions!
- WVUHealthcare Connect

**Useful Medical Links**

- Analgasic Guidelines
- Radiology Centricity Web
- WVUH Antimicrobial Guidance Website
- The Journal of the American Medical Association (JAMA)
- Physicians Weekly
- MedScape
- Physician's Desk Reference
- Medline / PubMed
- UpToDate Clinical Info
- Clinical Pharmacology
- Staff IDs
- The New England Journal of Medicine
- Incident and Patient Complaint Reporting
- Micromedex
- Mayo Medical Laboratories
- Controlled Substances Rx Database
- Restricted Medications
- ACR Appropriateness Criteria-Diagnostic Imaging



# CONNECT

[Policies](#)[Mission, Vision & Strategy](#)[Standards of Behavior](#)[HR & Training](#)[Health & Wellness](#)[Departments](#)[Quality & Service](#)[Our Patients](#)[Reference Tools](#)[Applications](#)[Publications](#)[Branding Toolbox](#)

## Announcements

**New UHA acquires Morgantown ENT** - The clinic will relocate from Pineview Drive to the Suncrest Towne Centre this fall.

**New Engagement survey participants eligible for prizes** - Two lucky employees who complete the [survey](#) are eligible for prizes; one will win an iPad and the other will receive two tickets to a WVU football game. Faculty members taking the [survey](#) are eligible to win two tickets to a WVU football game. The survey will continue through Monday, Sept. 9.

**New CCRN Exam Review course set for Nov. 4-5** - This course will help prepare nurses to become certified by the [American Association of Critical-Care Nurses](#). The registration deadline is Friday, Oct. 18.

**New surgery chair arrives** - Don K. Nakayama, MD, MBA, comes to WVU from the Mercer University School of Medicine in Macon, Ga.

**Employee parking plan for WVU home football games changes** - Please carefully review this information as some employees will need to park at the Prete building; a shuttle will be provided. WVU plays its first home game against William & Mary on Saturday.

**Some benefit re-enrollment wellness screenings available at the POC, Family Medicine and Cheat Lake** - Employees have the option of receiving their cholesterol and glucose screenings at these locations.

**PI Plan progress report shared** - This [mid-year update](#) highlights key goals, along with each goal's status and some of the steps being taken to address each goal.

[Archive](#)

## Take Note

[EMPLOYEE Engagement Survey](#)[FACULTY Engagement Survey](#)[Benefit Re-enrollment Wellness Screenings](#)[Learn to Use HR's New Information System](#)[Journey to Excellence](#)

## Upcoming Events

|                  |   |
|------------------|---|
| Sat<br>Aug<br>31 | WVU Home Football Game (William & Mary) |
|------------------|---|

|                  |             |
|------------------|-------------|
| Tue<br>Sep<br>03 | Tuesday Tea |
|------------------|-------------|

|                  |                 |
|------------------|-----------------|
| Wed<br>Sep<br>04 | Farmer's Market |
|------------------|-----------------|

|                  |                      |
|------------------|----------------------|
| Wed<br>Sep<br>04 | First Wednesday Sale |
|------------------|----------------------|

|     |                |
|-----|----------------|
| Wed | Celebration of |
|-----|----------------|



## Reference Tools

If you would like to add information please contact John Kahl x75612 or [kahlj@wvuh.com](mailto:kahlj@wvuh.com).

[Ancillary Tools](#)  
[Code Cart Checklist](#)  
[General](#)  
[Managed Care](#)  
[Phone and Fax Numbers](#)  
[Safety](#)  
[UHA Tools](#)



[Nursing Tools](#)  
[Physician Reference](#)  
[TeleTrak](#)

[Education](#)  
[Image Grid](#)

[Physician Reference - Pharmacy](#)  
[UHA Board Activities](#)  
[WVUH/UHA Staff IDs](#)

Reference Tools consists of a variety of information maintained by a variety of individuals. Everyone does their best to keep all information listed as up to date as possible, however, information does get out dated at times. If you feel that any information is outdated please notify John Kahl to investigate.

### Ancillary Tools

[Time-off Request Form for Management](#)

[back to top](#)

### Education

[Adult Code Response Bags](#)

[Crash Cart E-Poster](#)

[Loss of Airway Guidelines](#)

[Tracheostomy Reference Sheet](#)

[back to top](#)

### General

[Clinical Pharmacology 2000 \(CP2000\)](#)

[Expiration Toolkit Reference](#)

[Human Gift Registry Information](#)

[Interpreter List](#)

[Licensure Sites](#)

[Medical Equipment Operator's Manuals](#)

[Meeting Rooms \(Ruby\)](#)

**NEW!** [National Patient Safety Goals](#)

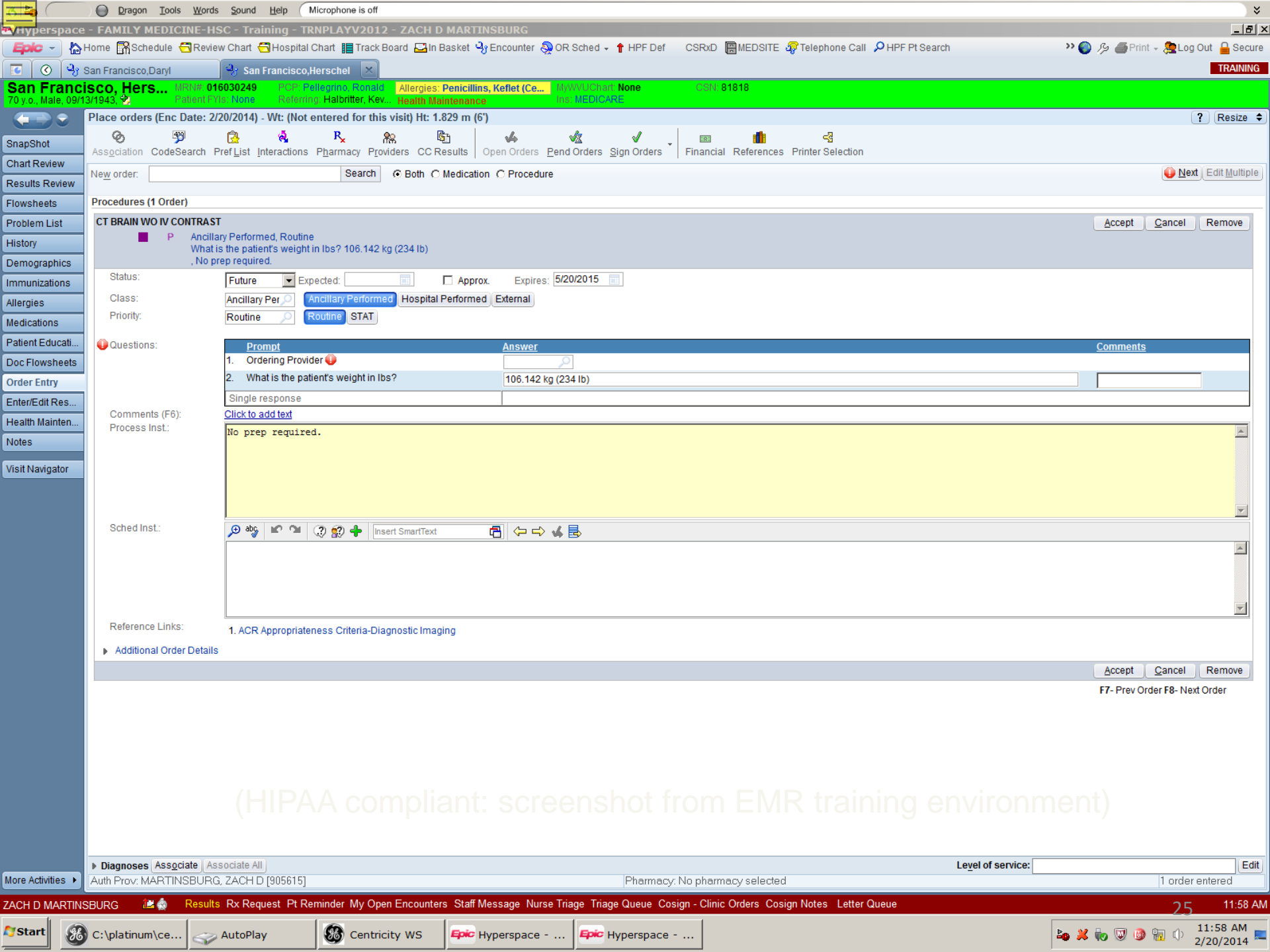
**Physician Reference**

|   |   |  |   |
|---|---|--|---|
| <a href="#">ACR Appropriateness Criteria</a>                            | <a href="#">Adult ICU Sedation</a>                            | <a href="#">Agency for Healthcare and Quality (AHRQ)</a> | <a href="#">Anticoagulation References</a>  |
| <a href="#">Blood Pressure Management Guidelines in Stroke Patients</a> | <a href="#">Chemotherapy Templates / Treatment Guidelines</a> | <a href="#">Dermatome Chart ASIA</a>                     | <a href="#">Emergency Blood Request Form</a>  |
| <a href="#">Epworth Sleepiness Scale</a>                                | <a href="#">Formulary (by alphabetical list)</a>              |  | <a href="#">Guidelines for Management of Stroke Patients in Intensive Care Unit Setting</a> |
| <a href="#">Guidelines for Preoperative Adult Diabetic Patients</a>     | <a href="#">House Staff - Resident - Physician Manual</a>     | <a href="#">HSC Library</a>                              | <a href="#">MBRCC Clinical Trials Operations Manual (The Blue Book)</a>                     |
| <a href="#">MBRCC - Form for Infusion Treatment</a>                     | <a href="#">MBRCC - Form for Recast Treatment</a>             | <a href="#">MBRCC - Form for Therapeutic Phlebotomy</a>  | <a href="#">NIH Stroke Scale</a>  |
| <a href="#">Office of Graduate Medical Education</a>                    | <a href="#">Orthopaedic Forms</a>                             |  |   |
| <a href="#">PACS - Davis Memorial</a>                                   |   |  | <a href="#">PACS - UHC</a>  |
| <a href="#">PACS - WVUH</a>   |   | <a href="#">Pediatric Humalog Dosing Directions</a>      | <a href="#">Patient instructions sheet for Adult Diabetic Patients undergoing Surgery</a>   |
| <a href="#">Quick Start Guide Epic Care Inpatient</a>                   | <a href="#">Referring Physician Database</a>                  | <a href="#">Tracheostomy Guidelines</a>                  |   |
| <a href="#">Treatment of Anemia in the Oncology Patient</a>             | <a href="#">Unapproved Abbreviation List</a>                  | <a href="#">Vaccinations</a>                             | <a href="#">Webmedx</a>   |
| <a href="#">WVU Antibiotic Guidance Site</a>                            | <a href="#">WVUH Medication Shortages</a>                     | <a href="#">WVUH Restricted Medications</a>              | <a href="#">WVUHS Physician Credentialing Verification</a>                                  |

[back to top](#)

**Physician Reference - Pharmacy Related**

|  |   |   |  |
|--|---|---|--|
| <a href="#">Anticoagulation Clinic Patient Referral</a>                    | <a href="#">Anticoagulant &amp; Antiplatelet Agents</a>     | <a href="#">Apixaban Guidelines</a>               | <a href="#">Apixaban Provider FAQ's</a>                                    |
| <a href="#">Argatroban Protocol (Adult)</a>                                | <a href="#">Argatroban Protocol (Pediatrics)</a>            | <a href="#">Bivalirudin Guidelines (adult)</a>    | <a href="#">Bivalirudin HIT Protocol (Adult)</a>                           |
| <a href="#">Bivalirudin - Cardiopulmonary Bypass - HIT/Heparin Allergy</a> | <a href="#">Dabigatran Provider FAQs</a>                    | <a href="#">Dabigatran Guidelines</a>             | <a href="#">Dabigatran Monitoring &amp; Reversal</a>                       |
| <a href="#">Deep and Superficial Veins Reference</a>                       | <a href="#">DVT Prophylaxis - Pregnancy Recommendations</a> | <a href="#">Enoxaparin Guidelines</a>             | <a href="#">Epidural/Spinal Warnings for Anticoagulants/ Antiplatelets</a> |
| <a href="#">Fondaparinux Guidelines</a>                                    | <a href="#">Heparin Adult Cardiology Dosing Chart</a>       | <a href="#">Heparin Adult Cardiology Protocol</a> | <a href="#">Heparin Adult Low Intensity (no bolus) Protocol</a>            |
| <a href="#">Heparin Adult Low Intensity (no bolus) Dosing Chart</a>        | <a href="#">Heparin Adult Standard Dosing Chart</a>         | <a href="#">Heparin Adult Standard Protocol</a>   | <a href="#">Heparin Adult Workflows</a>                                    |



DragonToolsWordsSoundHelpMicrophone is off

Epic

HomeScheduleReview ChartHospital ChartTrack BoardIn BasketEncounterOR SchedHPF DefCSRxDMEDSITETelephone CallHPF Pt Search

San Francisco, DarylSan Francisco, Herschel

San Francisco, Herschel

01603024970 y.o., Male, 09/13/1943Patient FVis NonePCP: Pellegrino, RonaldReferring: Halbritter, KevinAllergies: Penicillins, Keflet (Cef...)NoneHealth MaintenanceMedicare

Place orders (Enc Date: 2/20/2014) - Wt: (Not entered for this visit) Ht: 1.829 m (6')

AssociationCodeSearchPref ListInteractionsPharmacyProvidersCC ResultsOpen OrdersPend OrdersSign OrdersFinancialReferencesPrinter Selection

New order:SearchBothMedicationProcedureNextEdit Multiple

Procedures (1 Order)

CT BRAIN WO IV CONTRASTAcceptCancelRemove

Ancillary Performed, RoutineWhat is the patient's weight in lbs? 106.142 kg (234 lb), No prep required.

Status:FutureExpected:Approx.Expires:5/20/2015

Class:Ancillary PerAncillary PerformedHospital PerformedExternal

Priority:RoutineRoutineSTAT

Questions:

| Prompt                                  | Answer              | Comments |
|---|---------------------|----------|
| 1. Ordering Provider                    |                     |          |
| 2. What is the patient's weight in lbs? | 106.142 kg (234 lb) |          |
| Single response                         |                     |          |

Comments (F6):Click to add text

Process Inst:No prep required.

Sched Inst:

abcInsert SmartText

Reference Links:

1. ACR Appropriateness Criteria-Diagnostic Imaging

Additional Order Details

AcceptCancelRemove

F7- Prev Order F8- Next Order

SnapshotChart ReviewResults ReviewFlowsheetsProblem ListHistoryDemographicsImmunizationsAllergiesMedicationsPatient Educati...Doc FlowsheetsOrder EntryEnter/Edit Res...Health Mainten...NotesVisit Navigator

DiagnosesAssociateAssociate AllAuth Prov: MARTINSBURG, ZACH D [905615]Level of service:1 order entered

ZACH D MARTINSBURGResultsRx RequestPt ReminderMy Open EncountersStaff MessageNurse TriageTriage QueueCosign - Clinic OrdersCosign NotesLetter Queue

2611:58 AM2/20/2014

(HIPAA compliant: screenshot from EMR training environment)



Or, when all else fails.....  
GOOGLE it!



# ACR Appropriateness Criteria

The ACR Appropriateness Criteria® (AC) are evidence-based guidelines to assist referring physicians and other providers in making the most appropriate imaging or treatment decision for a specific clinical condition. Employing these guidelines helps providers enhance quality of care and contribute to the most efficacious use of radiology. [Learn more »](#)



 [See the complete list of ACR AC topics and ratings tables »](#)

[Browse Topics ↗](#)

 [Search and filter AC topics and ratings tables \(login required\) »](#)

[Search Topics ↗](#)

## AC News and Announcements

 [ACR Appropriateness Criteria Now Satisfy Federal AUC](#)

 [New Vehicle for Feedback on ACR Appropriateness Criteria](#)



AC List

Panel Type:

Select ALL

Panels:



Select ALL

Search


Clear

## Diagnostic

### Breast












| Topic Name   | Narrative   | Evidence Table   |
|--|---|--|
| Breast Cancer Screening  |  Narrative |  Evidence Table |
| Breast Microcalcifications — Initial Diagnostic Workup   |  Narrative |  Evidence Table |
| Nonpalpable Mammographic Findings (Excluding Calcifications)   |  Narrative |  Evidence Table |
| Palpable Breast Masses   |  Narrative |  Evidence Table |
| Stage I Breast Cancer: Initial Workup and Surveillance for Local Recurrence and Distant Metastases in Asymptomatic Women |  Narrative |  Evidence Table |


















































### Cardiac


















































 Rectangular Ship

| Topic Name   | Narrative   | Evidence Table   |
|--|---|--|
| Acute Chest Pain — Suspected Aortic Dissection   |  Narrative   |  Evidence Table   |
| Acute Chest Pain — Suspected Pulmonary Embolism  |  Narrative   |  Evidence Table   |
| Acute Nonspecific Chest Pain — Low Probability of Coronary Artery Disease                              |  Narrative   |  Evidence Table   |
| Asymptomatic Patient at Risk for Coronary Artery Disease   |  Narrative   |  Evidence Table   |
| Chest Pain Suggestive of Acute Coronary Syndrome   |  Narrative |  Evidence Table |
| Chronic Chest Pain — High Probability of Coronary Artery Disease                                       |  Narrative |  Evidence Table |
| Chronic Chest Pain — Low to Intermediate Probability of Coronary Artery Disease                        |  Narrative |  Evidence Table |
| Dyspnea — Suspected Cardiac Origin   |  Narrative |  Evidence Table |
| Imaging for Transcatheter Aortic Valve Replacement   |  Narrative |  Evidence Table |
| Known or Suspected Congenital Heart Disease in the Adult   |  Narrative |  Evidence Table |
| Nonischemic Myocardial Disease with Clinical Manifestations (Ischemic Cardiomyopathy Already Excluded) |  Narrative |  Evidence Table |
| Suspected Infective Endocarditis   |  Narrative |  Evidence Table |



| Suspected Small-Bowel Obstruction  |  Narrative      |  Evidence Table      |
|--|---|--|
| Musculoskeletal  |   |  |
| Topic Name   | Narrative   | Evidence Table   |
| Acute Hand and Wrist Trauma  |  Narrative   |  Evidence Table   |
| Acute Hip Pain—Suspected Fracture  |  Narrative   |  Evidence Table   |
| Acute Shoulder Pain  |  Narrative   |  Evidence Table   |
| Acute Trauma to the Ankle  |  Narrative   |  Evidence Table   |
| Acute Trauma to the Foot   |  Narrative   |  Evidence Table   |
| Acute Trauma to the Knee   |  Narrative   |  Evidence Table   |
| Avascular Necrosis (Osteonecrosis) of the Hip  |  Narrative   |  Evidence Table   |
| Chronic Ankle Pain   |  Narrative   |  Evidence Table   |
| Chronic Elbow Pain   |  Narrative   |  Evidence Table   |
| Chronic Foot Pain  |  Narrative   |  Evidence Table   |
| Chronic Hip Pain   |  Narrative   |  Evidence Table   |
| Chronic Neck Pain  |  Narrative   |  Evidence Table   |
| Chronic Wrist Pain   |  Narrative   |  Evidence Table   |
| Follow-up of Malignant or Aggressive Musculoskeletal Tumors                          |  Narrative   |  Evidence Table   |
| Imaging After Total Knee Arthroplasty  |  Narrative   |  Evidence Table   |
| Management of Vertebral Compression Fractures  |  Narrative  |  Evidence Table  |
| Metastatic Bone Disease  |  Narrative |  Evidence Table |
| Nontraumatic Knee Pain   |  Narrative |  Evidence Table |
| Osteoporosis and Bone Mineral Density  |  Narrative |  Evidence Table |
| Primary Bone Tumors  |  Narrative |  Evidence Table |
| Soft-Tissue Masses   |  Narrative |  Evidence Table |
| Stress (Fatigue/Insufficiency) Fracture, Including Sacrum, Excluding Other Vertebrae |  Narrative |  Evidence Table |
| Suspected Osteomyelitis of the Foot in Patients with Diabetes Mellitus               |  Narrative |  Evidence Table |

|  Suspected Small-Bowel Obstruction |  Narrative      |  Evidence Table      |
|---|---|--|
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| Acute Hip Pain—Suspected Fracture   |  Narrative   |  Evidence Table   |
| Acute Shoulder Pain   |  Narrative   |  Evidence Table   |
| Acute Trauma to the Ankle   |  Narrative   |  Evidence Table   |
| Acute Trauma to the Foot  |  Narrative   |  Evidence Table   |
| Acute Trauma to the Knee  |  Narrative   |  Evidence Table   |
| Avascular Necrosis (Osteonecrosis) of the Hip   |  Narrative   |  Evidence Table   |
| Chronic Ankle Pain  |  Narrative   |  Evidence Table   |
| Chronic Elbow Pain  |  Narrative   |  Evidence Table   |
| Chronic Foot Pain   |  Narrative   |  Evidence Table   |
| Chronic Hip Pain  |  Narrative   |  Evidence Table   |
| Chronic Neck Pain   |  Narrative   |  Evidence Table   |
| Chronic Wrist Pain  |  Narrative   |  Evidence Table   |
| Follow-up of Malignant or Aggressive Musculoskeletal Tumors   |  Narrative   |  Evidence Table   |
| Imaging After Total Knee Arthroplasty   |  Narrative   |  Evidence Table   |
| Management of Vertebral Compression Fractures   |  Narrative  |  Evidence Table  |
| Metastatic Bone Disease   |  Narrative |  Evidence Table |
| Nontraumatic Knee Pain  |  Narrative |  Evidence Table |
| Osteoporosis and Bone Mineral Density   |  Narrative |  Evidence Table |
| Primary Bone Tumors   |  Narrative |  Evidence Table |
| Soft-Tissue Masses  |  Narrative |  Evidence Table |
| Stress (Fatigue/Insufficiency) Fracture, Including Sacrum, Excluding Other Vertebrae                          |  Narrative |  Evidence Table |
| Suspected Osteomyelitis of the Foot in Patients with Diabetes Mellitus  |  Narrative |  Evidence Table |



## American College of Radiology ACR Appropriateness Criteria®

**Clinical Condition:** Chronic Neck Pain

**Variant 1:** Patient with chronic neck pain without or with a history of previous trauma. First study.

| Radiologic Procedure  | Rating | Comments   | <a href="#">RRL*</a>             |
|---|--------|--|----------------------------------|
| X-ray cervical spine  | 9      | AP and lateral (may be supplemented with swimmer's and/or open mouth views). | ⊕ ⊕                              |
| MRI cervical spine without contrast   | 2      |  | O                                |
| Facet injection/medial branch block cervical spine  | 1      | Never indicated as initial study.  | ⊕ ⊕                              |
| X-ray myelography cervical spine  | 1      | Never indicated as initial study.  | ⊕ ⊕ ⊕                            |
| CT cervical spine without contrast  | 1      | Never indicated as initial study.  | ⊕ ⊕ ⊕                            |
| Tc-99m bone scan with SPECT neck  | 1      | Never indicated as initial study.  | ⊕ ⊕ ⊕                            |
| Myelography and post myelography CT cervical spine  | 1      | Never indicated as initial study.  | ⊕ ⊕ ⊕ ⊕                          |
| MRI cervical spine without and with contrast  | 1      |  | O                                |
| CT cervical spine with contrast   | 1      |  | ⊕ ⊕ ⊕                            |
| CT cervical spine without and with contrast   | 1      |  | ⊕ ⊕ ⊕                            |
| <b>Rating Scale:</b> 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate |        |  | <b>*Relative Radiation Level</b> |

**Variant 2:** Patient with chronic neck pain with history of previous malignancy. First study.

| Radiologic Procedure  | Rating | Comments   | <a href="#">RRL*</a>             |
|---|--------|--|----------------------------------|
| X-ray cervical spine  | 9      | AP and lateral (may be supplemented with swimmer's and/or open mouth views). | ⊕ ⊕                              |
| MRI cervical spine without contrast   | 2      |  | O                                |
| CT cervical spine without contrast  | 2      | Only if MRI is contraindicated.  | ⊕ ⊕ ⊕                            |
| Tc-99m bone scan whole body with SPECT neck   | 2      |  | ⊕ ⊕ ⊕                            |
| MRI cervical spine without and with contrast  | 1      |  | O                                |
| CT cervical spine with contrast   | 1      |  | ⊕ ⊕ ⊕                            |
| CT cervical spine without and with contrast   | 1      |  | ⊕ ⊕ ⊕                            |
| <b>Rating Scale:</b> 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate |        |  | <b>*Relative Radiation Level</b> |



## American College of Radiology ACR Appropriateness Criteria®

**Clinical Condition:** Chronic Neck Pain

**Variant 1:** Patient with chronic neck pain without or with a history of previous trauma. First study.

| Radiologic Procedure  | Rating | Comments   | <a href="#">RRL*</a>             |
|---|--------|--|----------------------------------|
| X-ray cervical spine  | 9      | AP and lateral (may be supplemented with swimmer's and/or open mouth views). | ⊕ ⊕                              |
| MRI cervical spine without contrast   | 2      |  | O                                |
| Facet injection/medial branch block cervical spine  | 1      | Never indicated as initial study.  | ⊕ ⊕                              |
| X-ray myelography cervical spine  | 1      | Never indicated as initial study.  | ⊕ ⊕ ⊕                            |
| CT cervical spine without contrast  | 1      | Never indicated as initial study.  | ⊕ ⊕ ⊕                            |
| Tc-99m bone scan with SPECT neck  | 1      | Never indicated as initial study.  | ⊕ ⊕ ⊕                            |
| Myelography and post myelography CT cervical spine  | 1      | Never indicated as initial study.  | ⊕ ⊕ ⊕ ⊕                          |
| MRI cervical spine without and with contrast  | 1      |  | O                                |
| CT cervical spine with contrast   | 1      |  | ⊕ ⊕ ⊕                            |
| CT cervical spine without and with contrast   | 1      |  | ⊕ ⊕ ⊕                            |
| <b>Rating Scale:</b> 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate |        |  | <b>*Relative Radiation Level</b> |

**Variant 2:** Patient with chronic neck pain with history of previous malignancy. First study.

| Radiologic Procedure  | Rating | Comments   | <a href="#">RRL*</a>             |
|---|--------|--|----------------------------------|
| X-ray cervical spine  | 9      | AP and lateral (may be supplemented with swimmer's and/or open mouth views). | ⊕ ⊕                              |
| MRI cervical spine without contrast   | 2      |  | O                                |
| CT cervical spine without contrast  | 2      | Only if MRI is contraindicated.  | ⊕ ⊕ ⊕                            |
| Tc-99m bone scan whole body with SPECT neck   | 2      |  | ⊕ ⊕ ⊕                            |
| MRI cervical spine without and with contrast  | 1      |  | O                                |
| CT cervical spine with contrast   | 1      |  | ⊕ ⊕ ⊕                            |
| CT cervical spine without and with contrast   | 1      |  | ⊕ ⊕ ⊕                            |
| <b>Rating Scale:</b> 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate |        |  | <b>*Relative Radiation Level</b> |



# American College of Radiology ACR Appropriateness Criteria®

**Clinical Condition:** Chronic Neck Pain

**Variant 1:** Patient with chronic neck pain without or with a history of previous trauma. First study.

| Radiologic Procedure  | Rating | Comments   | <a href="#">RRL*</a>             |
|---|--------|--|----------------------------------|
| X-ray cervical spine  | 9      | AP and lateral (may be supplemented with swimmer's and/or open mouth views). | ⊕ ⊕                              |
| MRI cervical spine without contrast   | 2      |  | O                                |
| Facet injection/medial branch block cervical spine  | 1      | Never indicated as initial study.  | ⊕ ⊕                              |
| X-ray myelography cervical spine  | 1      | Never indicated as initial study.  | ⊕ ⊕ ⊕                            |
| CT cervical spine without contrast  | 1      | Never indicated as initial study.  | ⊕ ⊕ ⊕                            |
| Tc-99m bone scan with SPECT neck  | 1      | Never indicated as initial study.  | ⊕ ⊕ ⊕                            |
| Myelography and post myelography CT cervical spine  | 1      | Never indicated as initial study.  | ⊕ ⊕ ⊕ ⊕                          |
| MRI cervical spine without and with contrast  | 1      |  | O                                |
| CT cervical spine with contrast   | 1      |  | ⊕ ⊕ ⊕                            |
| CT cervical spine without and with contrast   | 1      |  | ⊕ ⊕ ⊕                            |
| <b>Rating Scale:</b> 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate |        |  | <b>*Relative Radiation Level</b> |

**Variant 2:** Patient with chronic neck pain with history of previous malignancy. First study.

| Radiologic Procedure  | Rating | Comments   | <a href="#">RRL*</a>             |
|---|--------|--|----------------------------------|
| X-ray cervical spine  | 9      | AP and lateral (may be supplemented with swimmer's and/or open mouth views). | ⊕ ⊕                              |
| MRI cervical spine without contrast   | 2      |  | O                                |
| CT cervical spine without contrast  | 2      | Only if MRI is contraindicated.  | ⊕ ⊕ ⊕                            |
| Tc-99m bone scan whole body with SPECT neck   | 2      |  | ⊕ ⊕ ⊕                            |
| MRI cervical spine without and with contrast  | 1      |  | O                                |
| CT cervical spine with contrast   | 1      |  | ⊕ ⊕ ⊕                            |
| CT cervical spine without and with contrast   | 1      |  | ⊕ ⊕ ⊕                            |
| <b>Rating Scale:</b> 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate |        |  | <b>*Relative Radiation Level</b> |



# American College of Radiology ACR Appropriateness Criteria®

**Clinical Condition:** Chronic Neck Pain

**Variant 1:** Patient with chronic neck pain without or with a history of previous trauma. First study.

| Radiologic Procedure   | Rating | Comments   | RRL*                      |
|--|--------|--|---------------------------|
| X-ray cervical spine   | 9      | AP and lateral (may be supplemented with swimmer's and/or open mouth views). | ⊕ ⊕                       |
| MRI cervical spine without contrast  | 2      |  | O                         |
| Facet injection/medial branch block cervical spine   | 1      | Never indicated as initial study.  | ⊕ ⊕                       |
| X-ray myelography cervical spine   | 1      | Never indicated as initial study.  | ⊕ ⊕ ⊕                     |
| CT cervical spine without contrast   | 1      | Never indicated as initial study.  | ⊕ ⊕ ⊕                     |
| Tc-99m bone scan with SPECT neck   | 1      | Never indicated as initial study.  | ⊕ ⊕ ⊕                     |
| Myelography and post myelography CT cervical spine   | 1      | Never indicated as initial study.  | ⊕ ⊕ ⊕ ⊕                   |
| MRI cervical spine without and with contrast   | 1      |  | O                         |
| CT cervical spine with contrast  | 1      |  | ⊕ ⊕ ⊕                     |
| CT cervical spine without and with contrast  | 1      |  | ⊕ ⊕ ⊕                     |
| Rating Scale: 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate |        |  | *Relative Radiation Level |

**Variant 2:** Patient with chronic neck pain with history of previous malignancy. First study.

| Radiologic Procedure   | Rating | Comments   | RRL*                      |
|--|--------|--|---------------------------|
| X-ray cervical spine   | 9      | AP and lateral (may be supplemented with swimmer's and/or open mouth views). | ⊕ ⊕                       |
| MRI cervical spine without contrast  | 2      |  | O                         |
| CT cervical spine without contrast   | 2      | Only if MRI is contraindicated.  | ⊕ ⊕ ⊕                     |
| Tc-99m bone scan whole body with SPECT neck  | 2      |  | ⊕ ⊕ ⊕                     |
| MRI cervical spine without and with contrast   | 1      |  | O                         |
| CT cervical spine with contrast  | 1      |  | ⊕ ⊕ ⊕                     |
| CT cervical spine without and with contrast  | 1      |  | ⊕ ⊕ ⊕                     |
| Rating Scale: 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate |        |  | *Relative Radiation Level |





# American College of Radiology ACR Appropriateness Criteria®

**Clinical Condition:** Chronic Neck Pain

**Variant 1:** Patient with chronic neck pain without or with a history of previous trauma. First study.

| Radiologic Procedure  | Rating | Comments   | RRL*                      |
|---|--------|--|---------------------------|
| X-ray cervical spine  | 9      | AP and lateral (may be supplemented with swimmer's and/or open mouth views). | ⊕ ⊕                       |
| MRI cervical spine without contrast   | 2      |  | O                         |
| Facet injection/medial branch block cervical spine  | 1      | Never indicated as initial study.  | ⊕ ⊕                       |
| X-ray myelography cervical spine  | 1      | Never indicated as initial study.  | ⊕ ⊕ ⊕                     |
| CT cervical spine without contrast  | 1      | Never indicated as initial study.  | ⊕ ⊕ ⊕                     |
| Tc-99m bone scan with SPECT neck  | 1      | Never indicated as initial study.  | ⊕ ⊕ ⊕                     |
| Myelography and post myelography CT cervical spine  | 1      | Never indicated as initial study.  | ⊕ ⊕ ⊕ ⊕                   |
| MRI cervical spine without and with contrast  | 1      |  | O                         |
| CT cervical spine with contrast   | 1      |  | ⊕ ⊕ ⊕                     |
| CT cervical spine without and with contrast   | 1      |  | ⊕ ⊕ ⊕                     |
| <b>Rating Scale:</b> 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate |        |  | *Relative Radiation Level |

**Variant 2:** Patient with chronic neck pain with history of previous malignancy. First study.

| Radiologic Procedure  | Rating | Comments   | RRL*                      |
|---|--------|--|---------------------------|
| X-ray cervical spine  | 9      | AP and lateral (may be supplemented with swimmer's and/or open mouth views). | ⊕ ⊕                       |
| MRI cervical spine without contrast   | 2      |  | O                         |
| CT cervical spine without contrast  | 2      | Only if MRI is contraindicated.  | ⊕ ⊕ ⊕                     |
| Tc-99m bone scan whole body with SPECT neck   | 2      |  | ⊕ ⊕ ⊕                     |
| MRI cervical spine without and with contrast  | 1      |  | O                         |
| CT cervical spine with contrast   | 1      |  | ⊕ ⊕ ⊕                     |
| CT cervical spine without and with contrast   | 1      |  | ⊕ ⊕ ⊕                     |
| <b>Rating Scale:</b> 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate |        |  | *Relative Radiation Level |



## American College of Radiology ACR Appropriateness Criteria®

**Clinical Condition:** Chronic Neck Pain

**Variant 1:** Patient with chronic neck pain without or with a history of previous trauma. First study.

| Radiologic Procedure  | Rating | Comments   | RRL*                      |
|---|--------|--|---------------------------|
| X-ray cervical spine  | 9      | AP and lateral (may be supplemented with swimmer's and/or open mouth views). | ⊕ ⊕                       |
| MRI cervical spine without contrast   | 2      |  | O                         |
| Facet injection/medial branch block cervical spine  | 1      | Never indicated as initial study.  | ⊕ ⊕                       |
| X-ray myelography cervical spine  | 1      | Never indicated as initial study.  | ⊕ ⊕ ⊕                     |
| CT cervical spine without contrast  | 1      | Never indicated as initial study.  | ⊕ ⊕ ⊕                     |
| Tc-99m bone scan with SPECT neck  | 1      | Never indicated as initial study.  | ⊕ ⊕ ⊕                     |
| Myelography and post myelography CT cervical spine  | 1      | Never indicated as initial study.  | ⊕ ⊕ ⊕ ⊕                   |
| MRI cervical spine without and with contrast  | 1      |  | O                         |
| CT cervical spine with contrast   | 1      |  | ⊕ ⊕ ⊕                     |
| CT cervical spine without and with contrast   | 1      |  | ⊕ ⊕ ⊕                     |
| <b>Rating Scale:</b> 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate |        |  | *Relative Radiation Level |

**Variant 2:** Patient with chronic neck pain with history of previous malignancy. First study.

| Radiologic Procedure  | Rating | Comments   | RRL*                      |
|---|--------|--|---------------------------|
| X-ray cervical spine  | 9      | AP and lateral (may be supplemented with swimmer's and/or open mouth views). | ⊕ ⊕                       |
| MRI cervical spine without contrast   | 2      |  | O                         |
| CT cervical spine without contrast  | 2      | Only if MRI is contraindicated.  | ⊕ ⊕ ⊕                     |
| Tc-99m bone scan whole body with SPECT neck   | 2      |  | ⊕ ⊕ ⊕                     |
| MRI cervical spine without and with contrast  | 1      |  | O                         |
| CT cervical spine with contrast   | 1      |  | ⊕ ⊕ ⊕                     |
| CT cervical spine without and with contrast   | 1      |  | ⊕ ⊕ ⊕                     |
| <b>Rating Scale:</b> 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate |        |  | *Relative Radiation Level |



# American College of Radiology ACR Appropriateness Criteria®

**Clinical Condition:** Chronic Neck Pain

**Variant 1:** Patient with chronic neck pain without or with a history of previous trauma. First study.

| Radiologic Procedure  | Rating | Comments   | RRL*                      |
|---|--------|--|---------------------------|
| X-ray cervical spine  | 9      | AP and lateral (may be supplemented with swimmer's and/or open mouth views). | ⊕ ⊕                       |
| MRI cervical spine without contrast   | 2      |  | O                         |
| Facet injection/medial branch block cervical spine  | 1      | Never indicated as initial study.  | ⊕ ⊕                       |
| X-ray myelography cervical spine  | 1      | Never indicated as initial study.  | ⊕ ⊕ ⊕                     |
| CT cervical spine without contrast  | 1      | Never indicated as initial study.  | ⊕ ⊕ ⊕                     |
| Tc-99m bone scan with SPECT neck  | 1      | Never indicated as initial study.  | ⊕ ⊕ ⊕                     |
| Myelography and post myelography CT cervical spine  | 1      | Never indicated as initial study.  | ⊕ ⊕ ⊕ ⊕                   |
| MRI cervical spine without and with contrast  | 1      |  | O                         |
| CT cervical spine with contrast   | 1      |  | ⊕ ⊕ ⊕                     |
| CT cervical spine without and with contrast   | 1      |  | ⊕ ⊕ ⊕                     |
| <b>Rating Scale:</b> 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate |        |  | *Relative Radiation Level |

**Variant 2:** Patient with chronic neck pain with history of previous malignancy. First study.

| Radiologic Procedure  | Rating | Comments   | RRL*                      |
|---|--------|--|---------------------------|
| X-ray cervical spine  | 9      | AP and lateral (may be supplemented with swimmer's and/or open mouth views). | ⊕ ⊕                       |
| MRI cervical spine without contrast   | 2      |  | O                         |
| CT cervical spine without contrast  | 2      | Only if MRI is contraindicated.  | ⊕ ⊕ ⊕                     |
| Tc-99m bone scan whole body with SPECT neck   | 2      |  | ⊕ ⊕ ⊕                     |
| MRI cervical spine without and with contrast  | 1      |  | O                         |
| CT cervical spine with contrast   | 1      |  | ⊕ ⊕ ⊕                     |
| CT cervical spine without and with contrast   | 1      |  | ⊕ ⊕ ⊕                     |
| <b>Rating Scale:</b> 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate |        |  | *Relative Radiation Level |



## American College of Radiology ACR Appropriateness Criteria®

**Clinical Condition:** Chronic Neck Pain

**Variant 1:** Patient with chronic neck pain without or with a history of previous trauma. First study.

| Radiologic Procedure  | Rating | Comments   | RRL*                      |
|---|--------|--|---------------------------|
| X-ray cervical spine  | 9      | AP and lateral (may be supplemented with swimmer's and/or open mouth views). | ⊕ ⊕                       |
| MRI cervical spine without contrast   | 2      |  | O                         |
| Facet injection/medial branch block cervical spine  | 1      | Never indicated as initial study.  | ⊕ ⊕                       |
| X-ray myelography cervical spine  | 1      | Never indicated as initial study.  | ⊕ ⊕ ⊕                     |
| CT cervical spine without contrast  | 1      | Never indicated as initial study.  | ⊕ ⊕ ⊕                     |
| Tc-99m bone scan with SPECT neck  | 1      | Never indicated as initial study.  | ⊕ ⊕ ⊕                     |
| Myelography and post myelography CT cervical spine  | 1      | Never indicated as initial study.  | ⊕ ⊕ ⊕ ⊕                   |
| MRI cervical spine without and with contrast  | 1      |  | O                         |
| CT cervical spine with contrast   | 1      |  | ⊕ ⊕ ⊕                     |
| CT cervical spine without and with contrast   | 1      |  | ⊕ ⊕ ⊕                     |
| <b>Rating Scale:</b> 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate |        |  | *Relative Radiation Level |

**Variant 2:** Patient with chronic neck pain with history of previous malignancy. First study.

| Radiologic Procedure  | Rating | Comments   | RRL*                      |
|---|--------|--|---------------------------|
| X-ray cervical spine  | 9      | AP and lateral (may be supplemented with swimmer's and/or open mouth views). | ⊕ ⊕                       |
| MRI cervical spine without contrast   | 2      |  | O                         |
| CT cervical spine without contrast  | 2      | Only if MRI is contraindicated.  | ⊕ ⊕ ⊕                     |
| Tc-99m bone scan whole body with SPECT neck   | 2      |  | ⊕ ⊕ ⊕                     |
| MRI cervical spine without and with contrast  | 1      |  | O                         |
| CT cervical spine with contrast   | 1      |  | ⊕ ⊕ ⊕                     |
| CT cervical spine without and with contrast   | 1      |  | ⊕ ⊕ ⊕                     |
| <b>Rating Scale:</b> 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate |        |  | *Relative Radiation Level |





## American College of Radiology ACR Appropriateness Criteria®

**Clinical Condition:** Chronic Neck Pain

**Variant 1:**

**Patient with chronic neck pain without or with a history of previous trauma. First study.**

| Radiologic Procedure  | Rating | Comments   | <a href="#">RRL*</a>             |
|---|--------|--|----------------------------------|
| X-ray cervical spine  | 9      | AP and lateral (may be supplemented with swimmer's and/or open mouth views). | ⊕ ⊕                              |
| MRI cervical spine without contrast   | 2      |  | O                                |
| Facet injection/medial branch block cervical spine  | 1      | Never indicated as initial study.  | ⊕ ⊕                              |
| X-ray myelography cervical spine  | 1      | Never indicated as initial study.  | ⊕ ⊕ ⊕                            |
| CT cervical spine without contrast  | 1      | Never indicated as initial study.  | ⊕ ⊕ ⊕                            |
| Tc-99m bone scan with SPECT neck  | 1      | Never indicated as initial study.  | ⊕ ⊕ ⊕                            |
| Myelography and post myelography CT cervical spine  | 1      | Never indicated as initial study.  | ⊕ ⊕ ⊕ ⊕                          |
| MRI cervical spine without and with contrast  | 1      |  | O                                |
| CT cervical spine with contrast   | 1      |  | ⊕ ⊕ ⊕                            |
| CT cervical spine without and with contrast   | 1      |  | ⊕ ⊕ ⊕                            |
| <b>Rating Scale:</b> 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate |        |  | <b>*Relative Radiation Level</b> |

**Variant 2:**

**Patient with chronic neck pain with history of previous malignancy. First study.**

| Radiologic Procedure  | Rating | Comments   | <a href="#">RRL*</a>             |
|---|--------|--|----------------------------------|
| X-ray cervical spine  | 9      | AP and lateral (may be supplemented with swimmer's and/or open mouth views). | ⊕ ⊕                              |
| MRI cervical spine without contrast   | 2      |  | O                                |
| CT cervical spine without contrast  | 2      | Only if MRI is contraindicated.  | ⊕ ⊕ ⊕                            |
| Tc-99m bone scan whole body with SPECT neck   | 2      |  | ⊕ ⊕ ⊕                            |
| MRI cervical spine without and with contrast  | 1      |  | O                                |
| CT cervical spine with contrast   | 1      |  | ⊕ ⊕ ⊕                            |
| CT cervical spine without and with contrast   | 1      |  | ⊕ ⊕ ⊕                            |
| <b>Rating Scale:</b> 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate |        |  | <b>*Relative Radiation Level</b> |





## American College of Radiology ACR Appropriateness Criteria®

**Clinical Condition:** Chronic Neck Pain

**Variant 1:**

Patient with chronic neck pain without or with a history of previous trauma. First study.

| Radiologic Procedure  | Rating | Comments   | RRL*                      |
|---|--------|--|---------------------------|
| X-ray cervical spine  | 9      | AP and lateral (may be supplemented with swimmer's and/or open mouth views). | ☼☼                        |
| MRI cervical spine without contrast   | 2      |  | O                         |
| Facet injection/medial branch block cervical spine  | 1      | Never indicated as initial study.  | ☼☼                        |
| X-ray myelography cervical spine  | 1      | Never indicated as initial study.  | ☼☼☼                       |
| CT cervical spine without contrast  | 1      | Never indicated as initial study.  | ☼☼☼                       |
| Tc-99m bone scan with SPECT neck  | 1      | Never indicated as initial study.  | ☼☼☼                       |
| Myelography and post myelography CT cervical spine  | 1      | Never indicated as initial study.  | ☼☼☼☼                      |
| MRI cervical spine without and with contrast  | 1      |  | O                         |
| CT cervical spine with contrast   | 1      |  | ☼☼☼                       |
| CT cervical spine without and with contrast   | 1      |  | ☼☼☼                       |
| <b>Rating Scale:</b> 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate |        |  | *Relative Radiation Level |

**Variant 2:**

Patient with chronic neck pain with history of previous malignancy. First study.

| Radiologic Procedure  | Rating | Comments   | RRL*                      |
|---|--------|--|---------------------------|
| X-ray cervical spine  | 9      | AP and lateral (may be supplemented with swimmer's and/or open mouth views). | ☼☼                        |
| MRI cervical spine without contrast   | 2      |  | O                         |
| CT cervical spine without contrast  | 2      | Only if MRI is contraindicated.  | ☼☼☼                       |
| Tc-99m bone scan whole body with SPECT neck   | 2      |  | ☼☼☼                       |
| MRI cervical spine without and with contrast  | 1      |  | O                         |
| CT cervical spine with contrast   | 1      |  | ☼☼☼                       |
| CT cervical spine without and with contrast   | 1      |  | ☼☼☼                       |
| <b>Rating Scale:</b> 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate |        |  | *Relative Radiation Level |



## American College of Radiology ACR Appropriateness Criteria®

**Clinical Condition:** Chronic Neck Pain

**Variant 1:** Patient with chronic neck pain without or with a history of previous trauma. First study.

| Radiologic Procedure  | Rating | Comments   | <a href="#">RRL*</a>      |
|---|--------|--|---------------------------|
| X-ray cervical spine  | 9      | AP and lateral (may be supplemented with swimmer's and/or open mouth views). | ⊕ ⊕                       |
| MRI cervical spine without contrast   | 2      |  | O                         |
| Facet injection/medial branch block cervical spine  | 1      | Never indicated as initial study.  | ⊕ ⊕                       |
| X-ray myelography cervical spine  | 1      | Never indicated as initial study.  | ⊕ ⊕ ⊕                     |
| CT cervical spine without contrast  | 1      | Never indicated as initial study.  | ⊕ ⊕ ⊕                     |
| Tc-99m bone scan with SPECT neck  | 1      | Never indicated as initial study.  | ⊕ ⊕ ⊕                     |
| Myelography and post myelography CT cervical spine  | 1      | Never indicated as initial study.  | ⊕ ⊕ ⊕ ⊕                   |
| MRI cervical spine without and with contrast  | 1      |  | O                         |
| CT cervical spine with contrast   | 1      |  | ⊕ ⊕ ⊕                     |
| CT cervical spine without and with contrast   | 1      |  | ⊕ ⊕ ⊕                     |
| <b>Rating Scale:</b> 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate |        |  | *Relative Radiation Level |

**Variant 2:** Patient with chronic neck pain with history of previous malignancy. First study.

| Radiologic Procedure  | Rating | Comments   | <a href="#">RRL*</a>      |
|---|--------|--|---------------------------|
| X-ray cervical spine  | 9      | AP and lateral (may be supplemented with swimmer's and/or open mouth views). | ⊕ ⊕                       |
| MRI cervical spine without contrast   | 2      |  | O                         |
| CT cervical spine without contrast  | 2      | Only if MRI is contraindicated.  | ⊕ ⊕ ⊕                     |
| Tc-99m bone scan whole body with SPECT neck   | 2      |  | ⊕ ⊕ ⊕                     |
| MRI cervical spine without and with contrast  | 1      |  | O                         |
| CT cervical spine with contrast   | 1      |  | ⊕ ⊕ ⊕                     |
| CT cervical spine without and with contrast   | 1      |  | ⊕ ⊕ ⊕                     |
| <b>Rating Scale:</b> 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate |        |  | *Relative Radiation Level |



# American College of Radiology ACR Appropriateness Criteria®

**Clinical Condition:** Chronic Neck Pain

**Variant 1:** Patient with chronic neck pain without or with a history of previous trauma. First study.

| Radiologic Procedure   | Rating | Comments   | RRL*                      |
|--|--------|--|---------------------------|
| X-ray cervical spine   | 9      | AP and lateral (may be supplemented with swimmer's and/or open mouth views). | ⊕ ⊕                       |
| MRI cervical spine without contrast  | 2      |  | O                         |
| Facet injection/medial branch block cervical spine   | 1      | Never indicated as initial study.  | ⊕ ⊕                       |
| X-ray myelography cervical spine   | 1      | Never indicated as initial study.  | ⊕ ⊕ ⊕                     |
| CT cervical spine without contrast   | 1      | Never indicated as initial study.  | ⊕ ⊕ ⊕                     |
| Tc-99m bone scan with SPECT neck   | 1      | Never indicated as initial study.  | ⊕ ⊕ ⊕                     |
| Myelography and post myelography CT cervical spine   | 1      | Never indicated as initial study.  | ⊕ ⊕ ⊕ ⊕                   |
| MRI cervical spine without and with contrast   | 1      |  | O                         |
| CT cervical spine with contrast  | 1      |  | ⊕ ⊕ ⊕                     |
| CT cervical spine without and with contrast  | 1      |  | ⊕ ⊕ ⊕                     |
| Rating Scale: 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate |        |  | *Relative Radiation Level |

**Variant 2:** Patient with chronic neck pain with history of previous malignancy. First study.

| Radiologic Procedure   | Rating | Comments   | RRL*                      |
|--|--------|--|---------------------------|
| X-ray cervical spine   | 9      | AP and lateral (may be supplemented with swimmer's and/or open mouth views). | ⊕ ⊕                       |
| MRI cervical spine without contrast  | 2      |  | O                         |
| CT cervical spine without contrast   | 2      | Only if MRI is contraindicated.  | ⊕ ⊕ ⊕                     |
| Tc-99m bone scan whole body with SPECT neck  | 2      |  | ⊕ ⊕ ⊕                     |
| MRI cervical spine without and with contrast   | 1      |  | O                         |
| CT cervical spine with contrast  | 1      |  | ⊕ ⊕ ⊕                     |
| CT cervical spine without and with contrast  | 1      |  | ⊕ ⊕ ⊕                     |
| Rating Scale: 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate |        |  | *Relative Radiation Level |



**Clinical Condition:** Chronic Neck Pain

**Variant 5:**

**Radiographs normal. Neurologic signs or symptoms present.**

| Radiologic Procedure  | Rating | Comments  | <u>RRL*</u>                      |
|---|--------|---|----------------------------------|
| MRI cervical spine without contrast   | 9      |   | O                                |
| Myelography and post myelography CT cervical spine  | 5      | If MRI contraindicated.   | ⊗ ⊗ ⊗ ⊗                          |
| CT cervical spine without contrast  | 5      | If MRI contraindicated.   | ⊗ ⊗ ⊗                            |
| Facet injection/medial branch block cervical spine  | 3      | MBB may be used to confirm facet as specific pain generator, generally third line test following MRI or CT. | ⊗ ⊗                              |
| MRI cervical spine without and with contrast  | 2      |   | O                                |
| X-ray myelography cervical spine  | 2      |   | ⊗ ⊗ ⊗                            |
| CT cervical spine with contrast   | 2      |   | ⊗ ⊗ ⊗                            |
| CT cervical spine without and with contrast   | 2      |   | ⊗ ⊗ ⊗                            |
| Tc-99m bone scan with SPECT neck  | 2      |   | ⊗ ⊗ ⊗                            |
| <b>Rating Scale:</b> 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate |        |   | <b>*Relative Radiation Level</b> |

**Variant 6:**

**Radiographs show degenerative changes. No neurologic findings.**

| Radiologic Procedure  | Rating | Comments  | <u>RRL*</u>                      |
|---|--------|---|----------------------------------|
| MRI cervical spine without contrast   | 5      | Persistent pain following failure of conservative management.   | O                                |
| CT cervical spine without contrast  | 3      | Following conservative management if MRI contraindicated.   | ⊗ ⊗ ⊗                            |
| Myelography and post myelography CT cervical spine  | 2      |   | ⊗ ⊗ ⊗ ⊗                          |
| Tc-99m bone scan with SPECT neck  | 2      |   | ⊗ ⊗ ⊗                            |
| Facet injection/medial branch block cervical spine  | 2      | MBB may be used to confirm facet as specific pain generator, generally third line test following MRI or CT. | ⊗ ⊗                              |
| MRI cervical spine without and with contrast  | 1      |   | O                                |
| X-ray discography cervical spine  | 1      |   | ⊗ ⊗                              |
| CT cervical spine with contrast   | 1      |   | ⊗ ⊗ ⊗                            |
| CT cervical spine without and with contrast   | 1      |   | ⊗ ⊗ ⊗                            |
| X-ray myelography cervical spine  | 1      | Should not be performed without CT.   | ⊗ ⊗ ⊗                            |
| <b>Rating Scale:</b> 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate |        |   | <b>*Relative Radiation Level</b> |

**Clinical Condition:** Chronic Neck Pain

**Variant 5:**

**Radiographs normal. Neurologic signs or symptoms present.**

| Radiologic Procedure  | Rating | Comments  | <u>RRL*</u>                      |
|---|--------|---|----------------------------------|
| MRI cervical spine without contrast   | 9      |   | O                                |
| Myelography and post myelography CT cervical spine  | 5      | If MRI contraindicated.   | ⊕ ⊕ ⊕ ⊕                          |
| CT cervical spine without contrast  | 5      | If MRI contraindicated.   | ⊕ ⊕ ⊕                            |
| Facet injection/medial branch block cervical spine  | 3      | MBB may be used to confirm facet as specific pain generator, generally third line test following MRI or CT. | ⊕ ⊕                              |
| MRI cervical spine without and with contrast  | 2      |   | O                                |
| X-ray myelography cervical spine  | 2      |   | ⊕ ⊕ ⊕                            |
| CT cervical spine with contrast   | 2      |   | ⊕ ⊕ ⊕                            |
| CT cervical spine without and with contrast   | 2      |   | ⊕ ⊕ ⊕                            |
| Tc-99m bone scan with SPECT neck  | 2      |   | ⊕ ⊕ ⊕                            |
| <b>Rating Scale:</b> 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate |        |   | <b>*Relative Radiation Level</b> |

**Variant 6:**

**Radiographs show degenerative changes. No neurologic findings.**

| Radiologic Procedure  | Rating | Comments  | <u>RRL*</u>                      |
|---|--------|---|----------------------------------|
| MRI cervical spine without contrast   | 5      | Persistent pain following failure of conservative management.   | O                                |
| CT cervical spine without contrast  | 3      | Following conservative management if MRI contraindicated.   | ⊕ ⊕ ⊕                            |
| Myelography and post myelography CT cervical spine  | 2      |   | ⊕ ⊕ ⊕ ⊕                          |
| Tc-99m bone scan with SPECT neck  | 2      |   | ⊕ ⊕ ⊕                            |
| Facet injection/medial branch block cervical spine  | 2      | MBB may be used to confirm facet as specific pain generator, generally third line test following MRI or CT. | ⊕ ⊕                              |
| MRI cervical spine without and with contrast  | 1      |   | O                                |
| X-ray discography cervical spine  | 1      |   | ⊕ ⊕                              |
| CT cervical spine with contrast   | 1      |   | ⊕ ⊕ ⊕                            |
| CT cervical spine without and with contrast   | 1      |   | ⊕ ⊕ ⊕                            |
| X-ray myelography cervical spine  | 1      | Should not be performed without CT.   | ⊕ ⊕ ⊕                            |
| <b>Rating Scale:</b> 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate |        |   | <b>*Relative Radiation Level</b> |





**Clinical Condition:** Chronic Neck Pain

**Variant 5:**

**Radiographs normal. Neurologic signs or symptoms present.**

| Radiologic Procedure  | Rating | Comments  | RRL*                      |
|---|--------|---|---------------------------|
| MRI cervical spine without contrast   | 9      |   | O                         |
| Myelography and post myelography CT cervical spine  | 5      | If MRI contraindicated.   | ⊗ ⊗ ⊗ ⊗                   |
| CT cervical spine without contrast  | 5      | If MRI contraindicated.   | ⊗ ⊗ ⊗                     |
| Facet injection/medial branch block cervical spine  | 3      | MBB may be used to confirm facet as specific pain generator, generally third line test following MRI or CT. | ⊗ ⊗                       |
| MRI cervical spine without and with contrast  | 2      |   | O                         |
| X-ray myelography cervical spine  | 2      |   | ⊗ ⊗ ⊗                     |
| CT cervical spine with contrast   | 2      |   | ⊗ ⊗ ⊗                     |
| CT cervical spine without and with contrast   | 2      |   | ⊗ ⊗ ⊗                     |
| Tc-99m bone scan with SPECT neck  | 2      |   | ⊗ ⊗ ⊗                     |
| <b>Rating Scale:</b> 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate |        |   | *Relative Radiation Level |

**Variant 6:**

**Radiographs show degenerative changes. No neurologic findings.**

| Radiologic Procedure  | Rating | Comments  | RRL*                      |
|---|--------|---|---------------------------|
| MRI cervical spine without contrast   | 5      | Persistent pain following failure of conservative management.   | O                         |
| CT cervical spine without contrast  | 3      | Following conservative management if MRI contraindicated.   | ⊗ ⊗ ⊗                     |
| Myelography and post myelography CT cervical spine  | 2      |   | ⊗ ⊗ ⊗ ⊗                   |
| Tc-99m bone scan with SPECT neck  | 2      |   | ⊗ ⊗ ⊗                     |
| Facet injection/medial branch block cervical spine  | 2      | MBB may be used to confirm facet as specific pain generator, generally third line test following MRI or CT. | ⊗ ⊗                       |
| MRI cervical spine without and with contrast  | 1      |   | O                         |
| X-ray discography cervical spine  | 1      |   | ⊗ ⊗                       |
| CT cervical spine with contrast   | 1      |   | ⊗ ⊗ ⊗                     |
| CT cervical spine without and with contrast   | 1      |   | ⊗ ⊗ ⊗                     |
| X-ray myelography cervical spine  | 1      | Should not be performed without CT.   | ⊗ ⊗ ⊗                     |
| <b>Rating Scale:</b> 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate |        |   | *Relative Radiation Level |



**Clinical Condition:****Chronic Neck Pain****Variant 11:****Prior C-spine surgery (including ACDF) with radiographs showing no complication. Next study.**

| Radiologic Procedure  | Rating | Comments   | <u>RRL*</u>                      |
|---|--------|--|----------------------------------|
| CT cervical spine without contrast  | 7      | CT best examination to assess for hardware complication, extent of fusion. | ⊗ ⊗ ⊗                            |
| MRI cervical spine without contrast   | 5      |  | O                                |
| X-ray myelography cervical spine  | 2      |  | ⊗ ⊗ ⊗                            |
| Tc-99m bone scan with SPECT neck  | 2      |  | ⊗ ⊗ ⊗                            |
| CT cervical spine with contrast   | 1      |  | ⊗ ⊗ ⊗                            |
| CT cervical spine without and with contrast   | 1      |  | ⊗ ⊗ ⊗                            |
| MRI cervical spine without and with contrast  | 1      | Unless there is a concern for infection.                                   | O                                |
| Facet injection/medial branch block cervical spine  | 1      |  | ⊗ ⊗                              |
| <b>Rating Scale:</b> 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate |        |  | <b>*Relative Radiation Level</b> |

**Variant 12:****Radiographs show OPLL. Next study.**

| Radiologic Procedure  | Rating | Comments   | <u>RRL*</u>                      |
|---|--------|--|----------------------------------|
| CT cervical spine without contrast  | 8      | Best for depiction of osseous masses.              | ⊗ ⊗ ⊗                            |
| MRI cervical spine without contrast   | 7      | Best for depiction of myelopathy, disc herniation. | O                                |
| X-ray myelography cervical spine  | 2      |  | ⊗ ⊗ ⊗                            |
| CT cervical spine with contrast   | 1      |  | ⊗ ⊗ ⊗                            |
| CT cervical spine without and with contrast   | 1      |  | ⊗ ⊗ ⊗                            |
| MRI cervical spine without and with contrast  | 1      |  | O                                |
| Tc-99m bone scan with SPECT neck  | 1      |  | ⊗ ⊗ ⊗                            |
| Facet injection/medial branch block cervical spine  | 1      |  | ⊗ ⊗                              |
| <b>Rating Scale:</b> 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate |        |  | <b>*Relative Radiation Level</b> |

**Clinical Condition:****Chronic Neck Pain****Variant 11:****Prior C-spine surgery (including ACDF) with radiographs showing no complication. Next study.**

| Radiologic Procedure  | Rating | Comments   | RRL*                      |
|---|--------|--|---------------------------|
| CT cervical spine without contrast  | 7      | CT best examination to assess for hardware complication, extent of fusion. | ☼ ☼ ☼                     |
| MRI cervical spine without contrast   | 5      |  | O                         |
| X-ray myelography cervical spine  | 2      |  | ☼ ☼ ☼                     |
| Tc-99m bone scan with SPECT neck  | 2      |  | ☼ ☼ ☼                     |
| CT cervical spine with contrast   | 1      |  | ☼ ☼ ☼                     |
| CT cervical spine without and with contrast   | 1      |  | ☼ ☼ ☼                     |
| MRI cervical spine without and with contrast  | 1      | Unless there is a concern for infection.                                   | O                         |
| Facet injection/medial branch block cervical spine  | 1      |  | ☼ ☼                       |
| <b>Rating Scale:</b> 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate |        |  | *Relative Radiation Level |

**Variant 12:****Radiographs show OPLL. Next study.**

| Radiologic Procedure  | Rating | Comments   | RRL*                      |
|---|--------|--|---------------------------|
| CT cervical spine without contrast  | 8      | Best for depiction of osseous masses.              | ☼ ☼ ☼                     |
| MRI cervical spine without contrast   | 7      | Best for depiction of myelopathy, disc herniation. | O                         |
| X-ray myelography cervical spine  | 2      |  | ☼ ☼ ☼                     |
| CT cervical spine with contrast   | 1      |  | ☼ ☼ ☼                     |
| CT cervical spine without and with contrast   | 1      |  | ☼ ☼ ☼                     |
| MRI cervical spine without and with contrast  | 1      |  | O                         |
| Tc-99m bone scan with SPECT neck  | 1      |  | ☼ ☼ ☼                     |
| Facet injection/medial branch block cervical spine  | 1      |  | ☼ ☼                       |
| <b>Rating Scale:</b> 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate |        |  | *Relative Radiation Level |







# ACR Appropriateness Criteria

## Clinical Decision Support

- Evidence based
- Multidisciplinary
- Up to date
- Free resource

[www.acr.org/ac](http://www.acr.org/ac)







# ACR Appropriateness Criteria

## Clinical Decision Support

- Evidence based
- Multidisciplinary
- Up to date
- Free resource

[www.acr.org/ac](http://www.acr.org/ac)

Use the radiologists as a resource also!





How do you ensure the best imaging interpretation for your patients?

By giving us an appropriate study indication





# What to write in the study Indication?

- Concise summary statement that clearly spells out the clinical picture and your reason for ordering the study
  - Symptoms and Signs (use qualifiers!)
  - Duration
  - Relevant PMH (NOTE: prior cancer or immune compromise ALWAYS is relevant, as are key surgeries)





# For the Consult

## Use Qualifiers

- They shape DDx
- They support decision making
- They SAVE time, money, and radiation

- Acute – chronic
- Local - systemic
- Sudden – gradual
- Immediate - delayed
- Constant - intermittent
- Mild – severe
- Unilateral – bilateral
- Left-sided – right-sided
- Upper – lower
- Localized - diffuse
- At rest – with activity
- Painful – painless
- Sharp - dull
- Tender - non-tender
- Exudative – non-exudative
- Productive – non-productive
- Blanching – non-blanching
- Pruritic – non-pruritic





- This ensures
  - Proper protocoling of the study
  - Appropriate attention to the area of interest







# Which indication is best for the patient?

## Intern “Dr Speedy”

- Dx Abdominal pain

## Intern “Dr. Deliberate”

- Dx Acute onset colicky abdominal pain in right flank
- Suspicion of renal stone disease





# Which indication is best for the patient?

## Intern “Dr Speedy”

- Dx Abdominal pain
- (no clinical question)

## Intern “Dr. Deliberate”

- Dx Acute onset colicky abdominal pain in right flank
- Suspicion of renal stone disease





# Which consult helps patient care?

## Intern “Dr Speedy”

- Dx Abdominal pain
- (no clinical question)

## Intern “Dr. Deliberate”

- Dx Acute onset colicky abdominal pain in right flank
- Suspicion of renal stone disease



Noncontrast CT Renal  
Calculus Scan





# “R/O\_\_\_\_\_” is NOT an appropriate indication!

- Based on a guess rather than the FACTS (symptoms)
- Adds to cost of care
  - Insurers may not reimburse “R/O\_\_\_\_\_”
- Not Professional





# Translate to reimbursable indication

|               |  |
|---------------|--|
| r/o stroke    |  |
| r/o mets      |  |
| r/o pathology |  |
| r/o trauma    |  |
| r/o PE        |  |





# Translate to reimbursable indication

|               |  |
|---------------|--|
| r/o stroke    | 36year old woman on oral contraceptives w new weakness left side. Clin ? is stroke |
| r/o mets      |  |
| r/o pathology |  |
| r/o trauma    |  |
| r/o PE        |  |



# Translate to reimbursable indication

|               |  |
|---------------|--|
| r/o stroke    | 36year old woman on oral contraceptives w new weakness left side. Clin ? is stroke |
| r/o mets      | 52year old woman w breast ca and new headache. Clin ? Is metastasis                |
| r/o pathology |  |
| r/o trauma    |  |
| r/o PE        |  |



# Translate to reimbursable indication

|               |  |
|---------------|--|
| r/o stroke    | 36year old woman on oral contraceptives w new weakness left side. Clin ? is stroke |
| r/o mets      | 52year old woman w breast ca and new headache. Clin ? Is metastasis                |
| r/o pathology | 61year old man with chronic fever and weight loss. Clin ? Is tumor                 |
| r/o trauma    |  |
| r/o PE        |  |



# Translate to reimbursable indication

|               |   |
|---------------|---|
| r/o stroke    | 36year old woman on oral contraceptives w new weakness left side. Clin ? is stroke                |
| r/o mets      | 52year old woman w breast ca and new headache. Clin ? Is metastasis                               |
| r/o pathology | 61year old man with chronic fever and weight loss. Clin ? Is tumor                                |
| r/o trauma    | (if there is trauma, Just say <u>what happened</u> )<br>18 year old man in mvc c/o abdominal pain |
| r/o PE        |   |



# Translate to reimbursable indication

|               |   |
|---------------|---|
| r/o stroke    | 36year old woman on oral contraceptives w new weakness left side. Clin ? is stroke                |
| r/o mets      | 52year old woman w breast ca and new headache. Clin ? Is metastasis                               |
| r/o pathology | 61year old man with chronic fever and weight loss. Clin ? Is tumor                                |
| r/o trauma    | (if there is trauma, Just say <u>what happened</u> )<br>18 year old man in mvc c/o abdominal pain |
| r/o PE        | 25year old woman postpartum new onset sob. Clin ? Is PE   |





# Learn from others' mistakes...

- Daily CXR
- MICU patient
- Intubated
- f/u
- Abnormal finding on diagnostic imaging of other specific body structures
- /
- Increased
- New symptoms



# How much does imaging cost?



# Charges

- Common procedure charges- ***XRAY***



| PROCEDURE                | GLOBAL | PROFESSIONAL |
|--------------------------|--------|--------------|
| X ray Ankle- 3 views     | \$100  | \$25         |
| X ray Knee- 1 or 2 views | \$100  | \$30         |
| X ray Chest- 2 views     | \$100  | \$40         |

# Charges



- Common procedure charges- ***Ultrasound***

| PROCEDURE              | GLOBAL | PROFESSIONAL |
|------------------------|--------|--------------|
| Ultrasound-<br>Thyroid | \$430  | \$95         |
| Ultrasound- Carotid    | \$750  | \$180        |
| US- OB- > 12 weeks     | \$530  | \$180        |

# Charges



- Common procedure charges- *CT*

| PROCEDURE                   | GLOBAL | PROFESSIONAL |
|-----------------------------|--------|--------------|
| CT-Brain w/o contrast       | \$550  | \$120        |
| CT- Brain w/ and w/o        | \$750  | \$180        |
| CT- Abd/Pelvis w/o contrast | \$650  | \$250        |

 \*\*\*New combined CT code, reimbursement down by \$200-\$400 per scan



# Charges

- Common procedure charges- ***MRI***

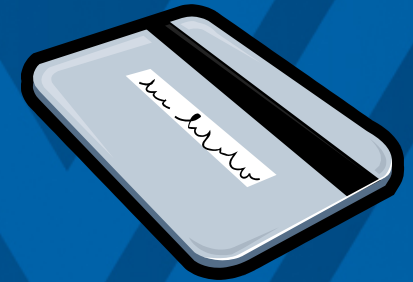


| PROCEDURE   | GLOBAL | PROFESSIONAL |
|---|--------|--------------|
| MRI- Spinal canal and contents, cervical w/o contrast | \$1500 | \$300        |
| MR- Spinal canal and contents lumbar w/o contrast     | \$1500 | \$250        |
| MR- Spinal canal and contents thoracic w/o contrast   | \$1500 | \$300        |



# Charges

- Common procedure charges- *PET*



| PROCEDURE                       | GLOBAL | PROFESSIONAL |
|---------------------------------|--------|--------------|
| PET- WB head to thigh           | \$3300 | \$400        |
| PET- WB head to toes (Melanoma) | \$3400 | \$420        |
| PET- Brain Scan                 | \$2600 | \$250        |





# How do I contact the radiologists?



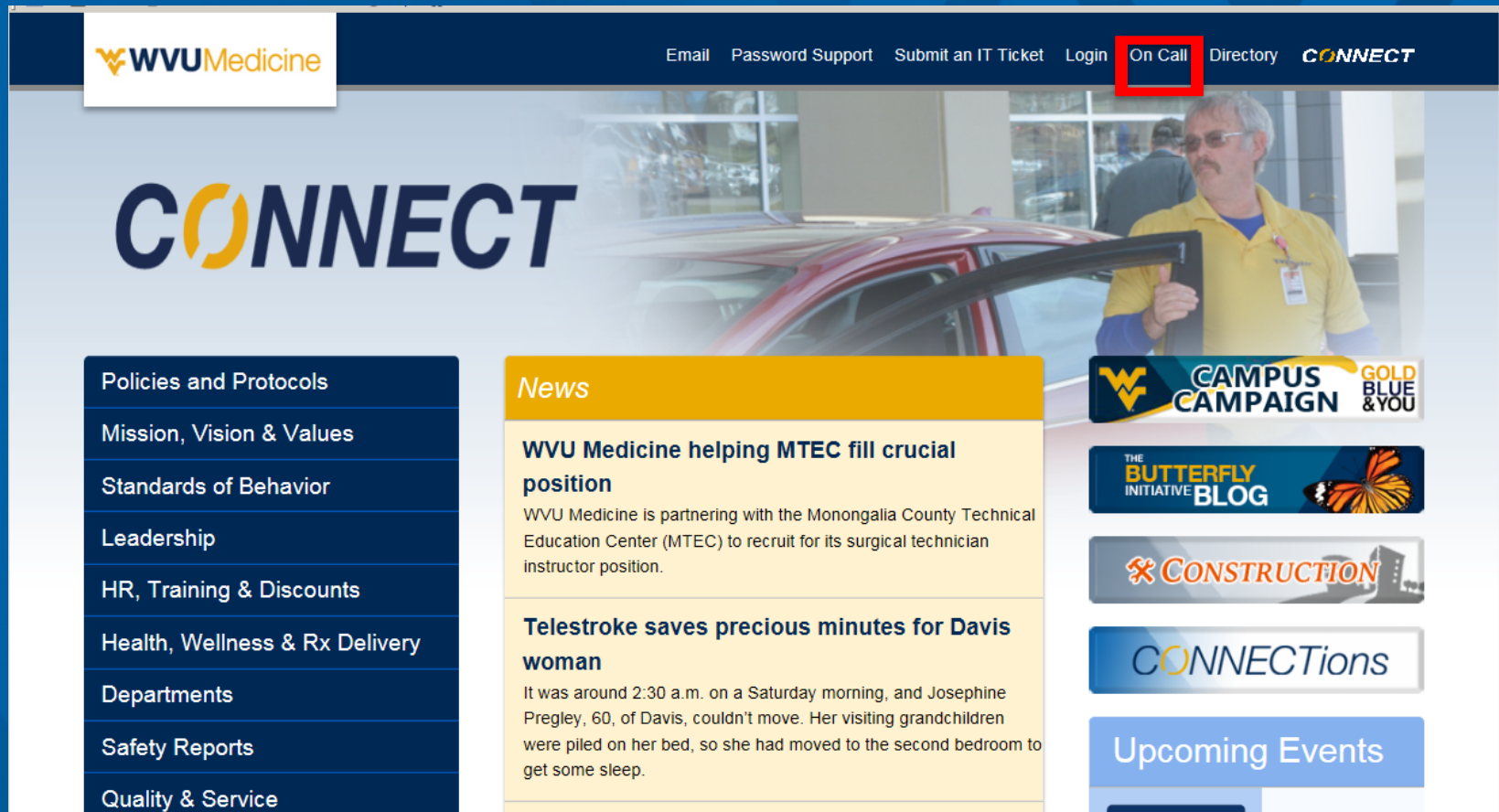


# The radiologists are here to help you!

- Please page or call us at any time to discuss appropriate imaging ordering
- Come to the reading room to view the images with us
- We are available 24/7



# How to contact us...



The screenshot displays the WVU Medicine CONNECT website. At the top, a dark blue navigation bar contains the WVU Medicine logo on the left and a series of links on the right: Email, Password Support, Submit an IT Ticket, Login, On Call (highlighted with a red box), Directory, and CONNECT. Below the navigation bar is a large hero image of a man in a yellow polo shirt standing next to a red car. The word "CONNECT" is overlaid in large, bold, blue letters. On the left side, a vertical menu lists various links: Policies and Protocols, Mission, Vision & Values, Standards of Behavior, Leadership, HR, Training & Discounts, Health, Wellness & Rx Delivery, Departments, Safety Reports, and Quality & Service. The central content area features a "News" section with two articles. The first article, "WVU Medicine helping MTEC fill crucial position," describes a partnership with the Monongalia County Technical Education Center (MTEC) to recruit surgical technicians. The second article, "Telestroke saves precious minutes for Davis woman," reports on a successful telestroke intervention for a patient named Josephine Pregley. On the right side, there are four promotional banners: "CAMPUS CAMPAIGN GOLD BLUE & YOU", "THE BUTTERFLY INITIATIVE BLOG" with a butterfly graphic, "CONSTRUCTION" with a construction site graphic, and "CONNECTIONs". At the bottom right, there is a section for "Upcoming Events".

**WVU Medicine**

Email Password Support Submit an IT Ticket Login **On Call** Directory **CONNECT**

# CONNECT

- Policies and Protocols
- Mission, Vision & Values
- Standards of Behavior
- Leadership
- HR, Training & Discounts
- Health, Wellness & Rx Delivery
- Departments
- Safety Reports
- Quality & Service

## News

### WVU Medicine helping MTEC fill crucial position

WVU Medicine is partnering with the Monongalia County Technical Education Center (MTEC) to recruit for its surgical technician instructor position.

### Telestroke saves precious minutes for Davis woman

It was around 2:30 a.m. on a Saturday morning, and Josephine Pregley, 60, of Davis, couldn't move. Her visiting grandchildren were piled on her bed, so she had moved to the second bedroom to get some sleep.

**CAMPUS CAMPAIGN** GOLD BLUE & YOU

THE BUTTERFLY INITIATIVE BLOG

**CONSTRUCTION**

**CONNECTIONs**

Upcoming Events





Directory

OnCall

Welcome: Guest


Help - Login

OnCall

Search

☒ Department [Show Adv Search](#) ☐ Person

Select The Department

Select a Department- 

Options

Select a department

<< May 2017 >>

| Sun | Mon | Tue | Wed | Thu | Fri | Sat |
|-----|-----|-----|-----|-----|-----|-----|
| 30  | 1   | 2   | 3   | 4   | 5   | 6   |
| 7   | 8   | 9   | 10  | 11  | 12  | 13  |
| 14  | 15  | 16  | 17  | 18  | 19  | 20  |
| 21  | 22  | 23  | 24  | 25  | 26  | 27  |
| 28  | 29  | 30  | 31  | 1   | 2   | 3   |

Friday, May 26, 2017



**OnCall**

☒ Department [Show Adv Search](#)
☐ Person

**Select The Department**

Radiology CHEST Ruby

**Options**

[Reports](#)




☒ Grid
☐ [Calendar](#)

[<<](#)
**May 2017**
[>>](#)

|     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|
| Sun | Mon | Tue | Wed | Thu | Fri | Sat |
| 30  | 1   | 2   | 3   | 4   | 5   | 6   |
| 7   | 8   | 9   | 10  | 11  | 12  | 13  |
| 14  | 15  | 16  | 17  | 18  | 19  | 20  |
| 21  | 22  | 23  | 24  | 25  | 26  | 27  |
| 28  | 29  | 30  | 31  | 1   | 2   | 3   |

Friday, May 26, 2017
Daily

[OnCall Group Page](#)

| Name                           | Start Time     | End Time       | Notes <a href="#">Hide All Notes</a>  | Role     | Call Order | Pager   |
|--------------------------------|----------------|----------------|---|----------|------------|---|
| <a href="#">Robert Grammer</a> | May 26 8:00 AM | May 26 4:00 PM | <a href="#">Scheduled Notes</a><br><br><a href="#">Personal Notes</a><br><br><a href="#">Department Notes</a> | Resident | 1          |  <a href="#">Alpha Pager</a> |
| <a href="#">Visad Patel</a>    | May 26 8:00 AM | May 26 4:00 PM | <a href="#">Scheduled Notes</a><br><br><a href="#">Personal Notes</a><br><br><a href="#">Department Notes</a> | Resident | 1          |  <a href="#">Alpha Pager</a> |
| <a href="#">Lana Winkler</a>   | May 26 8:00 AM | May 26 4:00 PM | <a href="#">Scheduled Notes</a><br><br><a href="#">Personal Notes</a><br><br><a href="#">Department Notes</a> | Staff    | 2          |  <a href="#">Alpha Pager</a> |

- Day: Choose section...Chest, Neuro, MSK, etc
- Evening/Nights/Weekends: Radiology ER, Radiology Call





# Or stop by...

- 3<sup>rd</sup> floor Ruby
- Multiple separate reading rooms





# In conclusion, for your patients..

- Order the appropriate study





# In conclusion, for your patients..

- Order the appropriate study
- Give an appropriate indication/history







# In conclusion, for your patients..

- Order the appropriate study
- Give an appropriate indication/history
- When in doubt, ask your friendly radiologist!





Thanks for your attention and  
Welcome to WVU!

