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, 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?

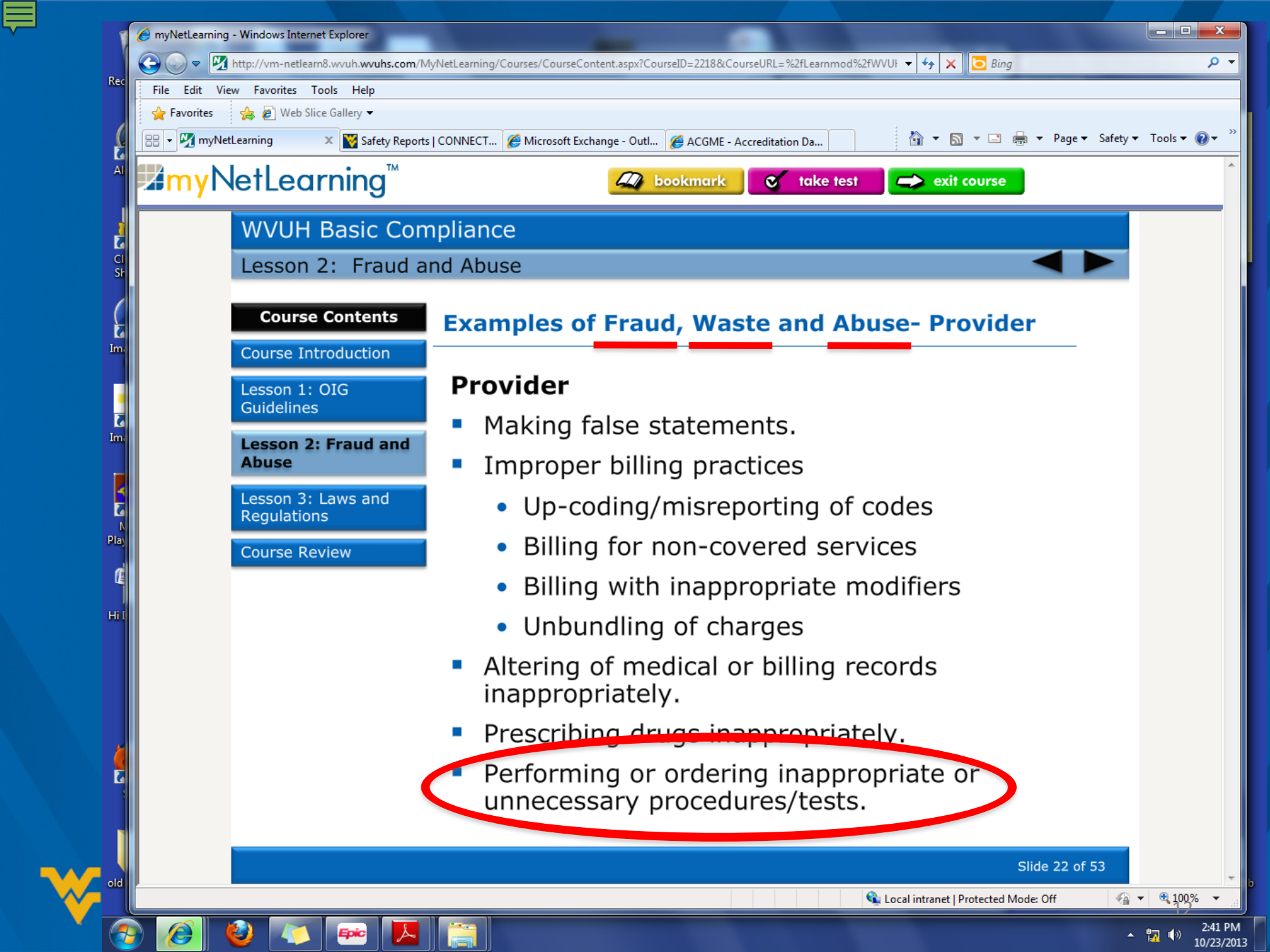
- Unneeded radiation exposure
- Delay in diagnosis

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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Microsoft Exchange - Outl...
ACGME - Accreditation Da...
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bookmark
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exit course
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.
Slide 22 of 53
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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
  - 230 topics
- Complies with PAMA federal legislation effective Jan 2017

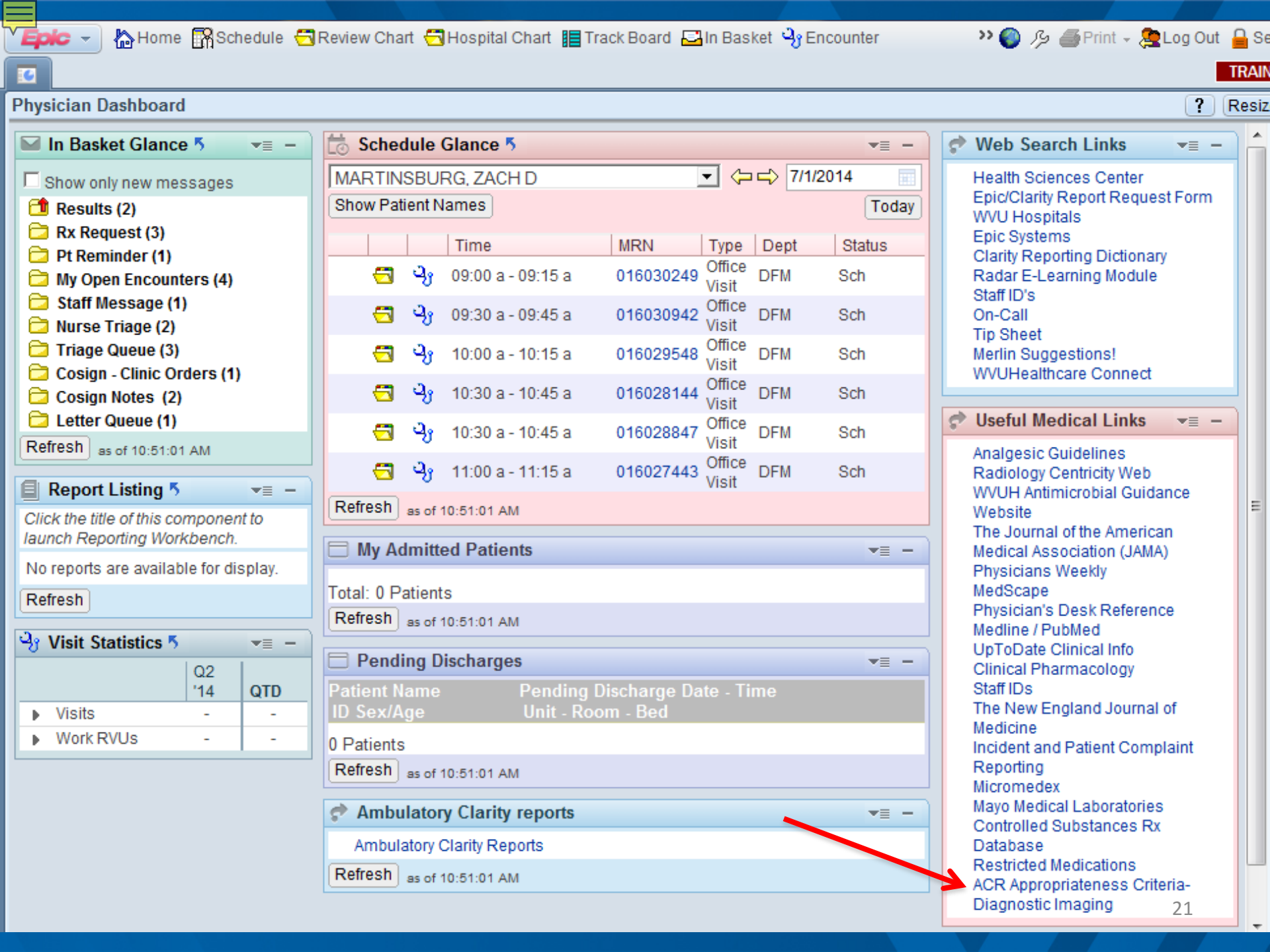
Who's on the Expert Panels?

- 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? WVU made it E-Z

- “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


Home
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Review Chart
Hospital Chart
Track Board
In Basket
Encounter
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Results (2)
Rx Request (3)
Pt Reminder (1)
My Open Encounters (4)
Staff Message (1)
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Cosign - Clinic Orders (1)
Cosign Notes (2)
Letter Queue (1)
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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
Analgesic 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
21

CONNECT | WVU Healthcare Intranet | WVU Health Sciences Center - Windows Internet Explorer

http://connect.wvuhealthcare.com/Pages/

File Edit View Favorites Tools Help

Favorites | Web Slice Gallery

CONNECT | WVU Healthcare Intranet | WVU Heal...

Page | Safety | Tools

WVU Healthcare

Email | Login | On Call | Directory | Pagers

CONNECT

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

Bravo | PI Plan | RUBY MENU | HSC MENU

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 ther 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 Aug 31	WVU Home Football Game (William & Mary)
Tue Sep 03	Tuesday Tea
Wed Sep 04	Farmer's Market
Wed Sep 04	First Wednesday Sale
Wed	Celebration of

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Reference Tools

If you would like to add information please contact John Kahl x75612 or kahlj@wvuh.com.

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

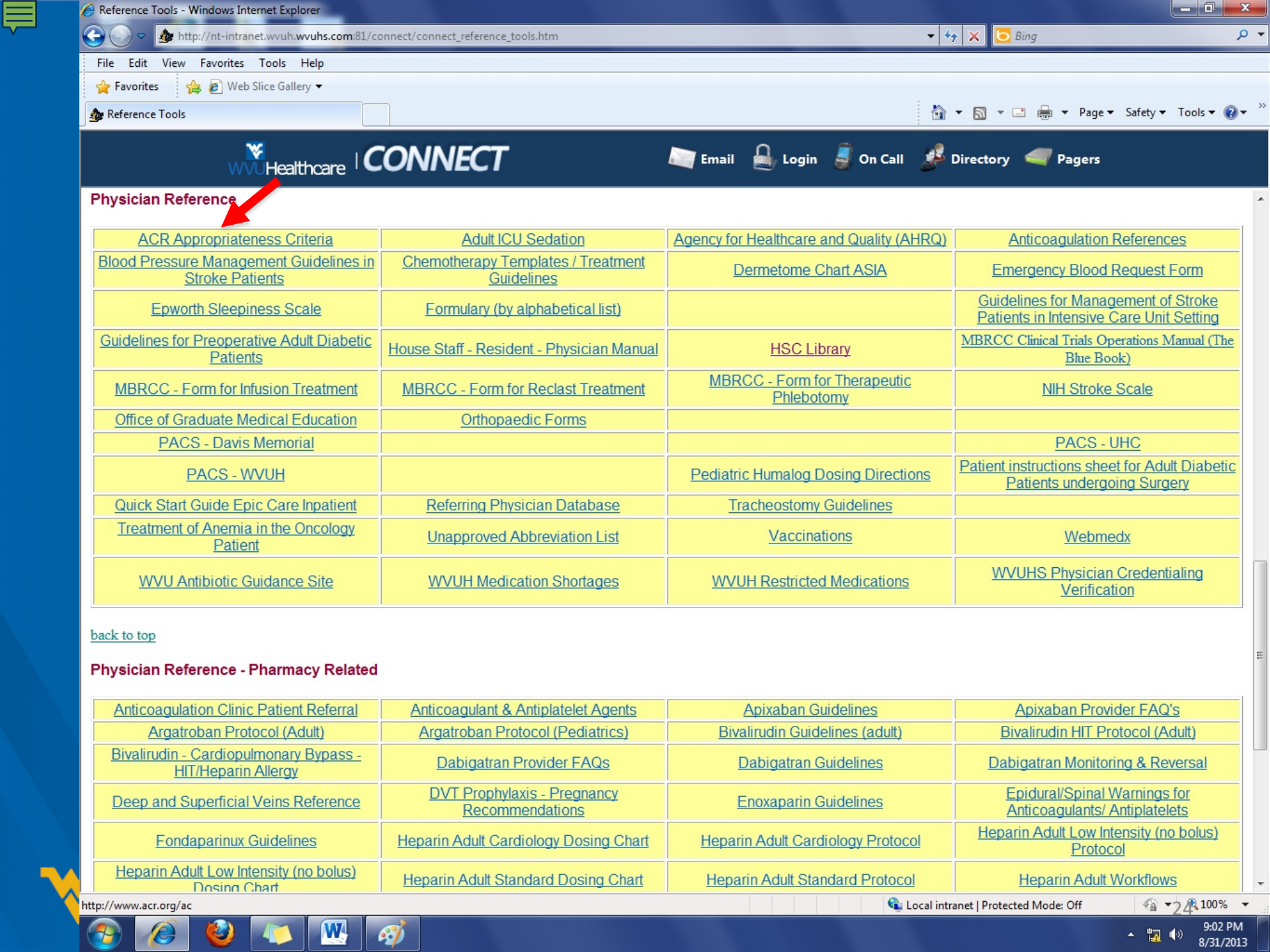
Education

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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Page Safety Tools
WVU Healthcare | CONNECT
Email
Login
On Call
Directory
Pagers
Physician Reference
ACR Appropriateness Criteria
Adult ICU Sedation
Agency for Healthcare and Quality (AHRQ)
Anticoagulation References
Blood Pressure Management Guidelines in Stroke Patients
Chemotherapy Templates / Treatment Guidelines
Dermetome Chart ASIA
Emergency Blood Request Form
Epworth Sleepiness Scale
Formulary (by alphabetical list)
Guidelines for Management of Stroke Patients in Intensive Care Unit Setting
Guidelines for Preoperative Adult Diabetic Patients
House Staff - Resident - Physician Manual
HSC Library
MBRCC Clinical Trials Operations Manual (The Blue Book)
MBRCC - Form for Infusion Treatment
MBRCC - Form for Reclast Treatment
MBRCC - Form for Therapeutic Phlebotomy
NIH Stroke Scale
Office of Graduate Medical Education
Orthopaedic Forms
PACS - Davis Memorial
PACS - UHC
PACS - WVUH
Pediatric Humalog Dosing Directions
Patient instructions sheet for Adult Diabetic Patients undergoing Surgery
Quick Start Guide Epic Care Inpatient
Referring Physician Database
Tracheostomy Guidelines
Treatment of Anemia in the Oncology Patient
Unapproved Abbreviation List
Vaccinations
Webmedx
WVU Antibiotic Guidance Site
WVUH Medication Shortages
WVUH Restricted Medications
WVUHS Physician Credentialing Verification
back to top
Physician Reference - Pharmacy Related
Anticoagulation Clinic Patient Referral
Anticoagulant & Antiplatelet Agents
Apixaban Guidelines
Apixaban Provider FAQ's
Argatroban Protocol (Adult)
Argatroban Protocol (Pediatrics)
Bivalirudin Guidelines (adult)
Bivalirudin HIT Protocol (Adult)
Bivalirudin - Cardiopulmonary Bypass - HIT/Heparin Allergy
Dabigatran Provider FAQs
Dabigatran Guidelines
Dabigatran Monitoring & Reversal
Deep and Superficial Veins Reference
DVT Prophylaxis - Pregnancy Recommendations
Enoxaparin Guidelines
Epidural/Spinal Warnings for Anticoagulants/ Antiplatelets
Fondaparinux Guidelines
Heparin Adult Cardiology Dosing Chart
Heparin Adult Cardiology Protocol
Heparin Adult Low Intensity (no bolus) Protocol
Heparin Adult Low Intensity (no bolus) Dosing Chart
Heparin Adult Standard Dosing Chart
Heparin Adult Standard Protocol
Heparin Adult Workflows
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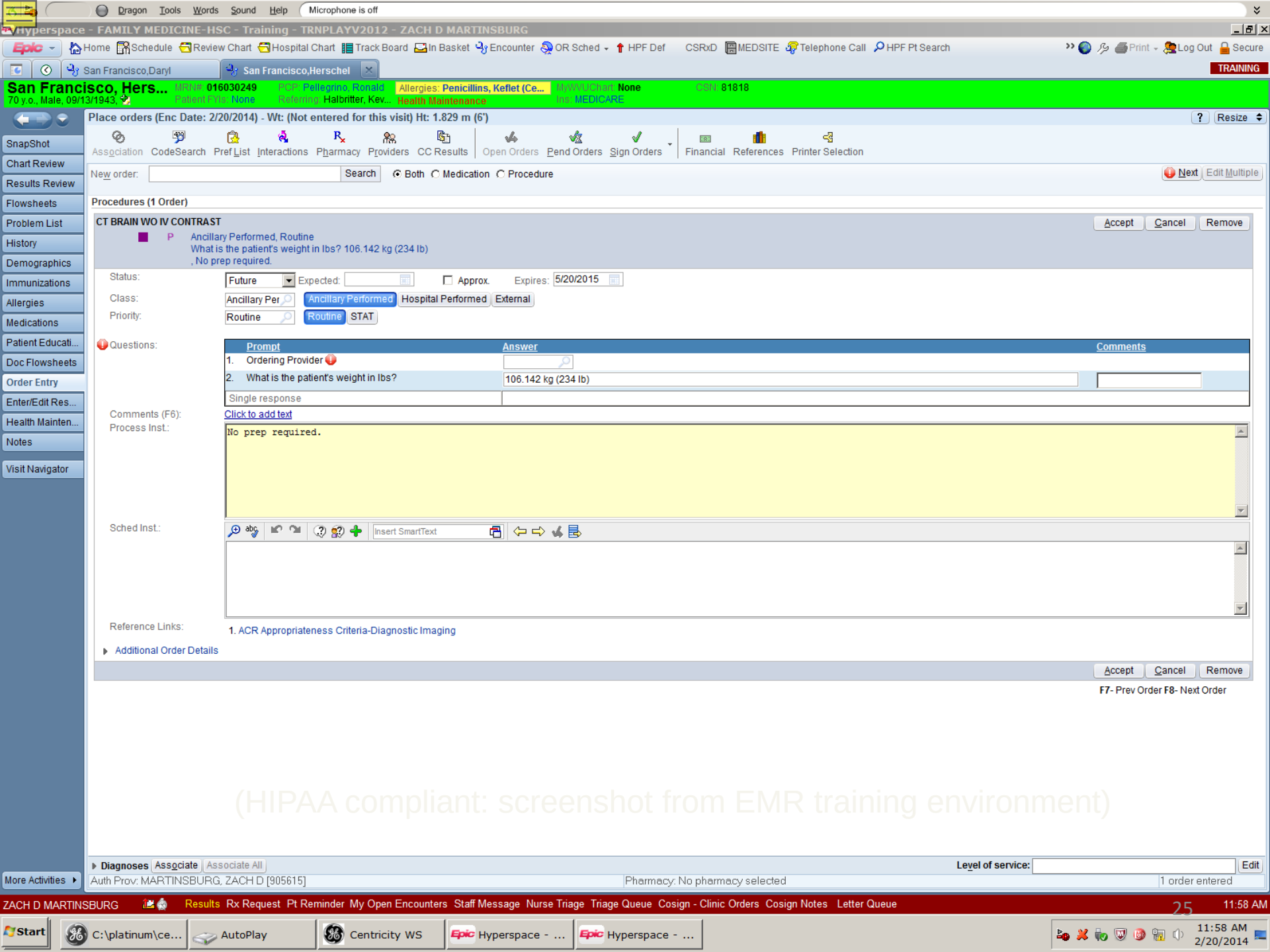
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San Francisco, Hers... MRN# 016030249 PCP: Pellegrino, Ronald Allergies: Penicillins, Keflet (Ce... MyWVUChart: None CSN: 81818
70 y.o., Male, 09/13/1943, Patient Fyis: None Referring: Halbritter, Kev... Health Maintenance Ins: MEDICARE
Place orders (Enc Date: 2/20/2014) - Wt: (Not entered for this visit) Ht: 1.829 m (6')
Resize
SnapShot
Chart Review
Results Review
Flowsheets
Problem List
History
Demographics
Immunizations
Allergies
Medications
Patient Educati...
Doc Flowsheets
Order Entry
Enter/Edit Res...
Health Mainten...
Notes
Visit Navigator
Association CodeSearch Pref List Interactions Pharmacy Providers CC Results
Open Orders Pend Orders Sign Orders
Financial References Printer Selection
New order: Search
Both Medication Procedure
Next Edit Multiple
Procedures (1 Order)
CT BRAIN WO IV CONTRAST
Accept Cancel Remove
P Ancillary Performed, Routine
What is the patient's weight in lbs? 106.142 kg (234 lb)
, No prep required.
Status: Future Expected: Approx. Expires: 5/20/2015
Class: Ancillary Per Ancillary Performed Hospital Performed External
Priority: Routine Routine STAT
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.: Insert SmartText
Reference Links: 1. ACR Appropriateness Criteria-Diagnostic Imaging
Additional Order Details
Accept Cancel Remove
F7- Prev Order F8- Next Order
(HIPAA compliant: screenshot from EMR training environment)
Diagnoses Associate Associate All
Level of service: Edit
Auth Prov: MARTINSBURG, ZACH D [905615]
Pharmacy: No pharmacy selected
1 order entered
More Activities
ZACH D MARTINSBURG
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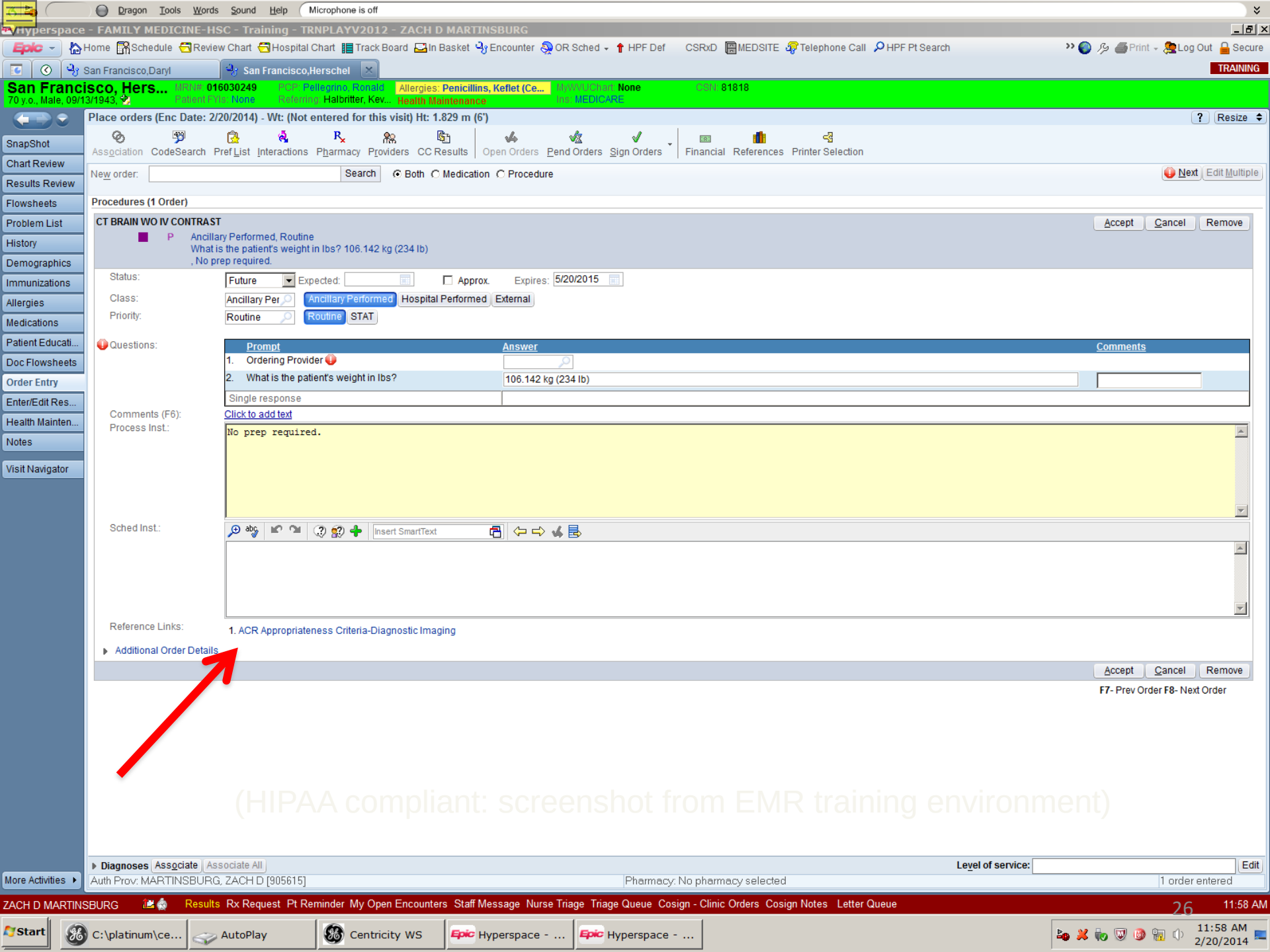
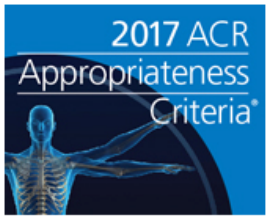


(HIPAA compliant: screenshot from EMR training environment)

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

QUALITY & SAFETY
- Accreditation
- Appropriateness Criteria®
  - New & Revised
  - Topics under Development
  - Topics to Be Developed
- Practice Parameters
- Quality Measurement
- NRDR Data Registries
- Radiology Safety
- RADPEER™
- Reporting and Data Systems
- Additional Resources
- eNews
- Contact Q&S

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 »

NEW! ACR Named a Qualified Provider-Led Entity by CMS

The Centers for Medicare & Medicaid Services (CMS) has named ACR a "qualified Provider-Led Entity" (qPLE) approved to provide appropriate use criteria (AUC) under the Medicare Appropriate Use Criteria program for advanced diagnostic imaging. This means that ACR Appropriateness Criteria fulfill the Protecting Access to Medicare Act (PAMA) requirements to consult AUC prior to ordering advanced diagnostic imaging for Medicare patients. ACR qPLE status is valid through June 2021. Read more »

Updates – 2017

The latest release of the ACR Appropriateness Criteria includes 230 clinical topics with over 1100 clinical variants. In 2017, there were **3 new and 5 revised topics**. All AC topics are reviewed annually.

NEW & REVISED TOPICS

Current Topics

To access existing AC ratings tables and narratives use the buttons below.

BASIC ACCESS » Browse for a complete list of topics and ratings tables organized by panel (login not required)

CONTACT US

Phone
703-648-8900

Email
acr_ac@acr.org

QUALITY & SAFETY

- Accreditation
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  - New & Revised
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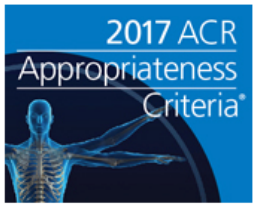

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ADVANCED SEARCH » Search and filter topics and ratings tables (login required)

CONTACT US

Phone
703-648-8900

Email
acr_ac@acr.org

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

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

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Date of origin: 1998
Last review date: 2013

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

Date of origin: 1998
Last review date: 2013

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

Date of origin: 1998
Last review date: 2013

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

Date of origin: 1998
Last review date: 2013

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

Date of origin: 1998
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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

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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

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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

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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

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Last review date: 2013

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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

Date of origin: 1998
Last review date: 2013

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

Date of origin: 1998
Last review date: 2013

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

Date of origin: 1998
Last review date: 2013

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	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		☢☢☢
Rating Scale: 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.	☢☢☢
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	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		☢☢☢
Rating Scale: 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.	☢☢☢
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	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		☢☢☢
Rating Scale: 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.	☢☢☢
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 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		☢☢
Rating Scale: 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		☢☢
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**

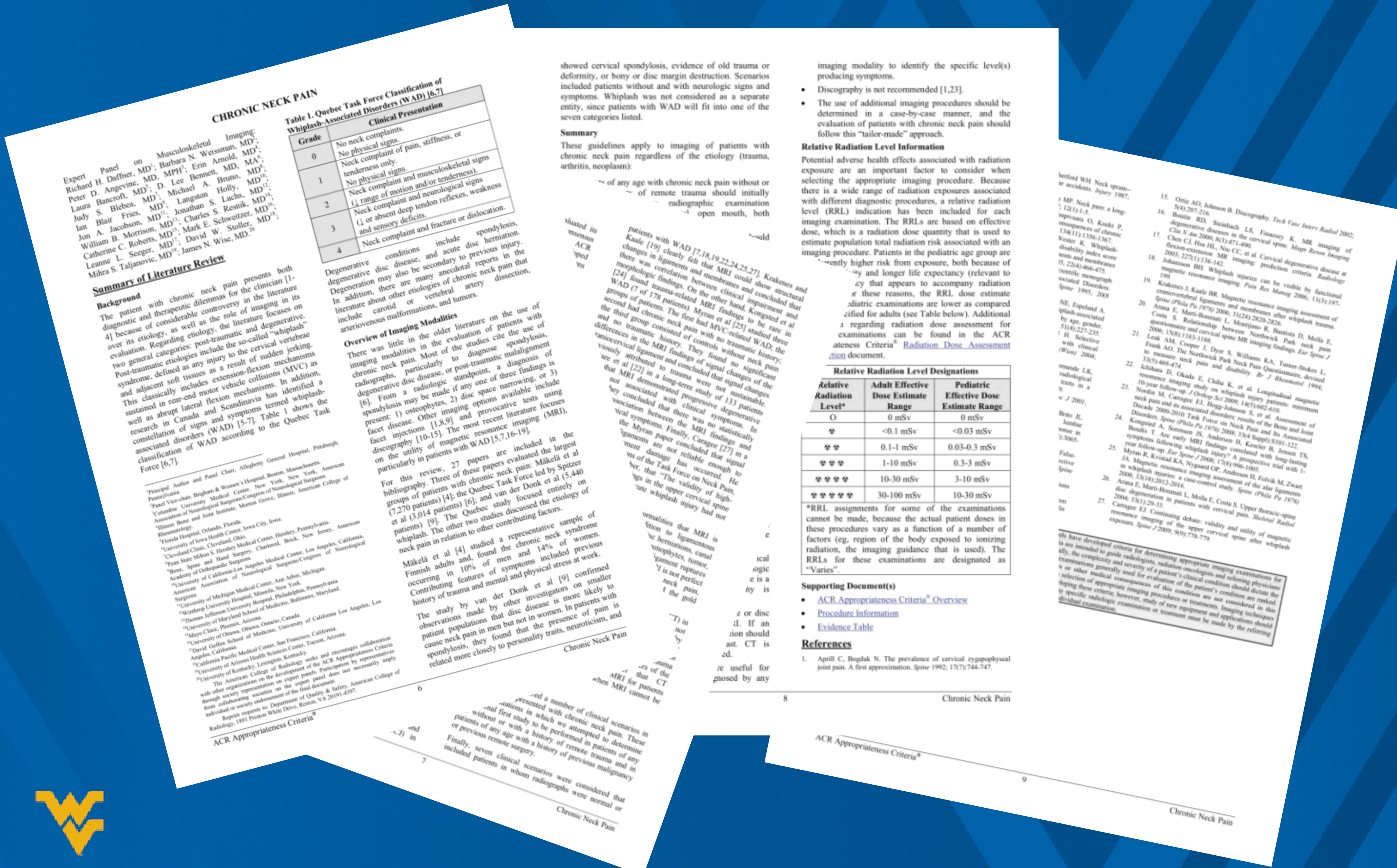
Variant 11: **Prior C-spine surgery (including ACDF) with radiographs showing no complication. Next study.**

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		☢☢
Rating Scale: 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		☢☢
Rating Scale: 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate			***Relative Radiation Level**

Literature Review


showed cervical spondylosis, evidence of old trauma or deformity, or bony or disc margin destruction. Scenarios included patients without and with neurologic signs and symptoms. Whiplash was not considered as a separate entity, since patients with WAD will fit into one of the seven categories listed.

Summary

These guidelines apply to imaging of patients with chronic neck pain regardless of the etiology (trauma, arthritis, neoplasm):

imaging modality to identify the specific level(s) producing symptoms.

- Discography is not recommended [1,23].
- The use of additional imaging procedures should be determined in a case-by-case manner, and the evaluation of patients with chronic neck pain should follow this "tailor-made" approach.

Relative Radiation Level Information

Potential adverse health effects associated with radiation exposure are an important factor to consider when selecting the appropriate imaging procedure. Because there is a wide range of radiation exposures associated with different diagnostic procedures, a relative radiation level (RRL) indication has been included for each imaging examination. The RRLs are based on effective dose, which is a radiation dose quantity that is used to estimate population total radiation risk associated with an imaging procedure. Patients in the pediatric age group are

Relative Radiation Level Designations

Relative Radiation Level*	Adult Effective Dose Estimate Range	Pediatric Effective Dose Estimate Range
O	0 mSv	0 mSv
☢	<0.1 mSv	<0.03 mSv
☢☢	0.1-1 mSv	0.03-0.3 mSv
☢☢☢	1-10 mSv	0.3-3 mSv
☢☢☢☢	10-30 mSv	3-10 mSv
☢☢☢☢☢	30-100 mSv	10-30 mSv

*RRL assignments for some of the examinations cannot be made, because the actual patient doses in these procedures vary as a function of a number of factors (eg, region of the body exposed to ionizing radiation, the imaging guidance that is used). The RRLs for these examinations are designated as "Varies".

Supporting Document(s)

- ACR Appropriateness Criteria® Overview
- Procedure Information
- Evidence Table

References

1. Aprill C, Bogduk N. The prevalence of cervical zygapophyseal joint pain. A first approximation. Spine 1992; 17(7):744-747.

ACR Appropriateness Criteria

Clinical Decision Support

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

www.acr.org/ac

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Clinical Decision Support

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- Free resource

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 what happened) 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 what happened) 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- 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***

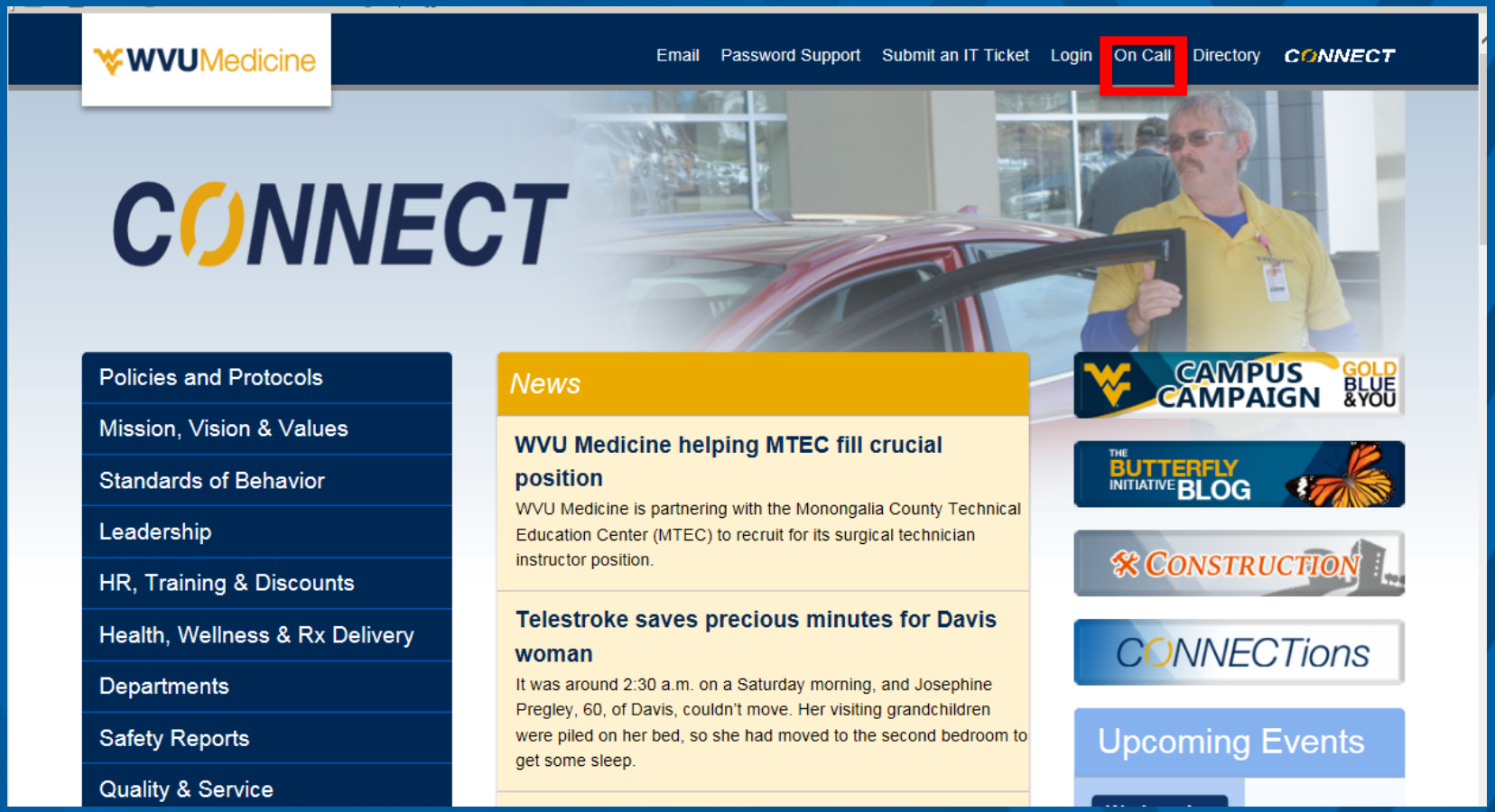
PROCEDURE	GLOBAL	PROFESSIONAL
PET- WB head to thigh	$3300	$400
PET- WB head to toes (Melanoma)	$3400	$420
PET- Brain Scan	$2600	$250

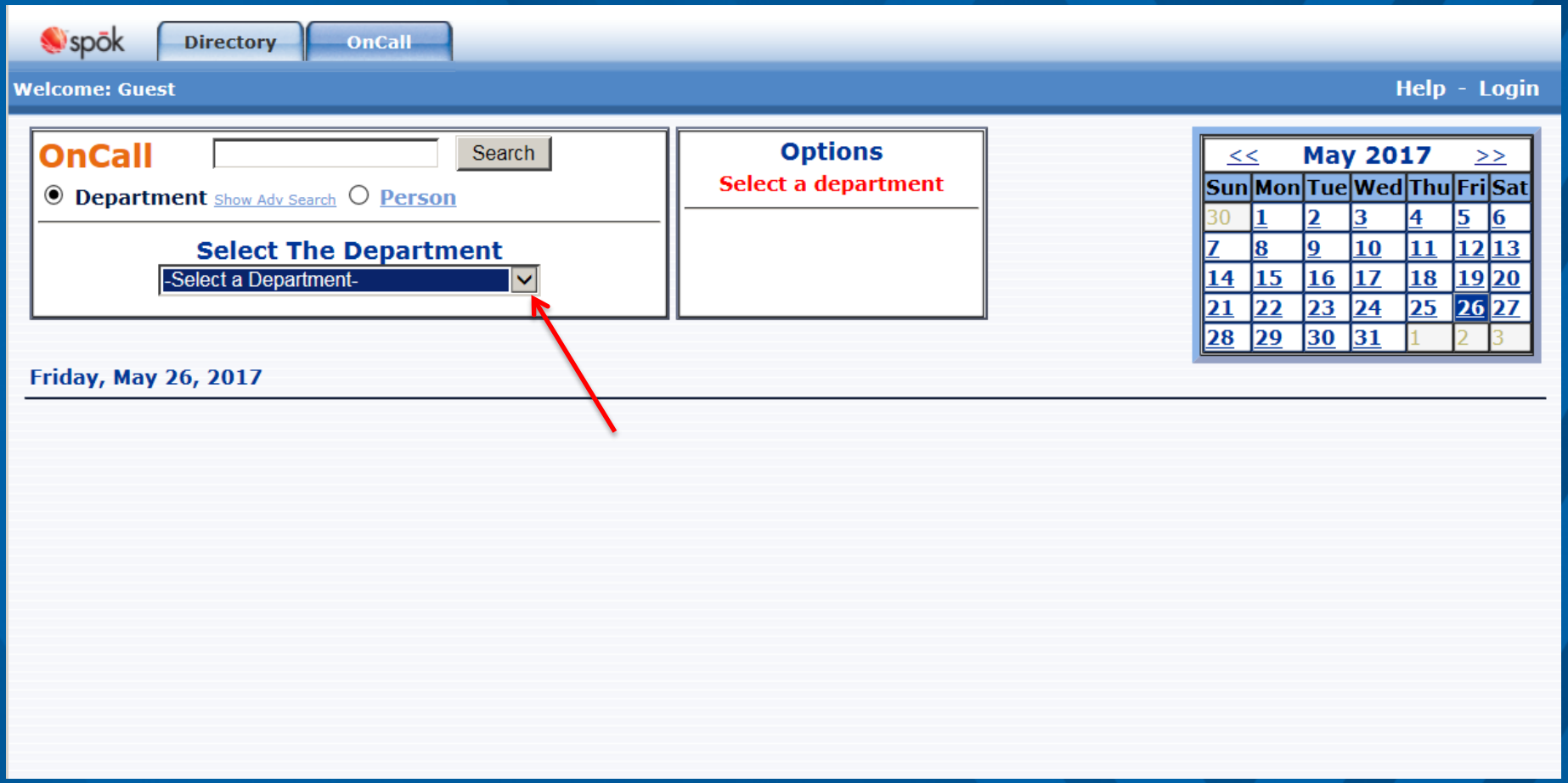
How do I contact the radiologists?

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…

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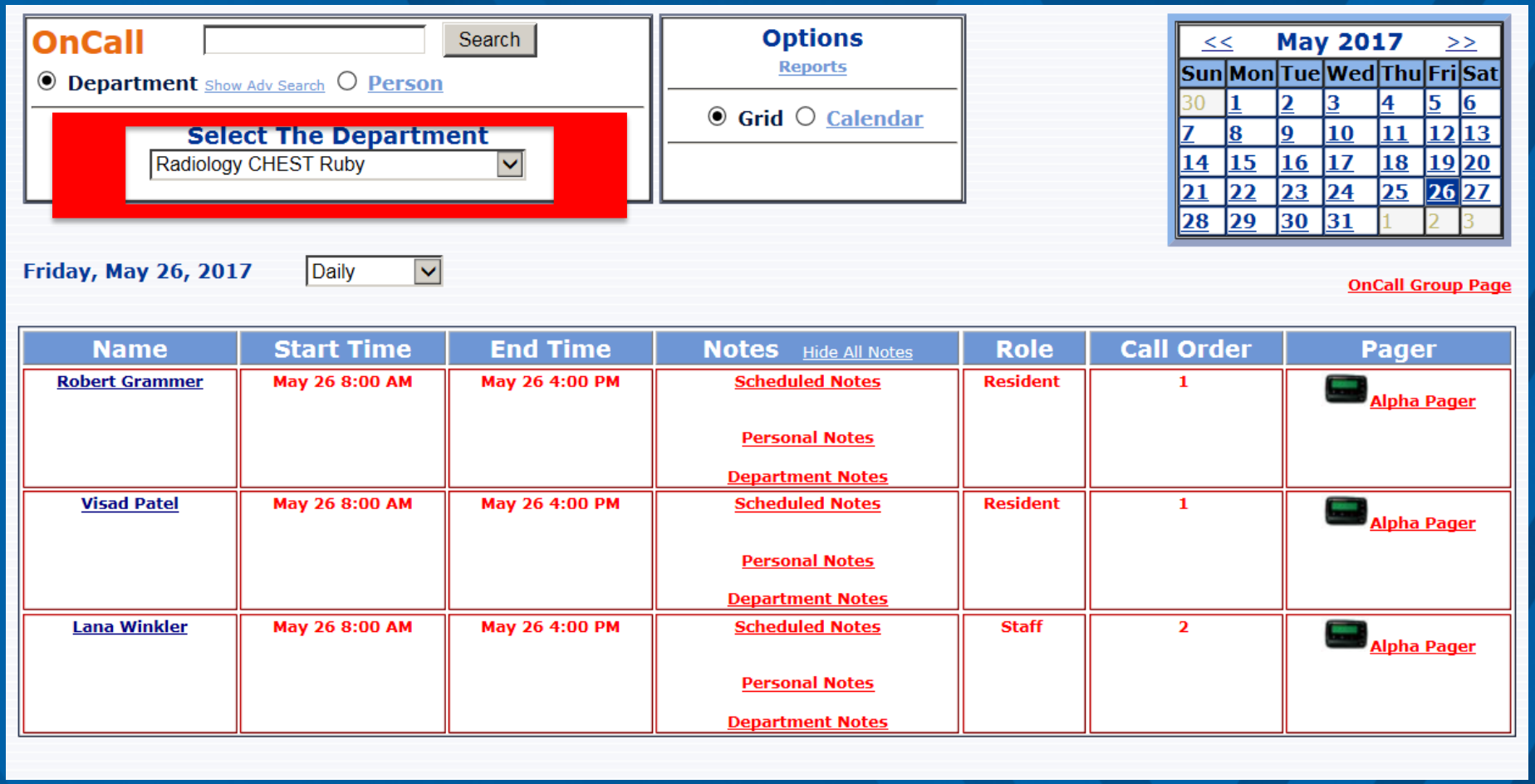
Directory
OnCall
Welcome: Guest
Help - Login
OnCall
Search
Department
Show Adv Search
Person
Select The Department
-Select a Department-
Options
Select a department
<< May 2017 >>
Sun Mon Tue Wed Thu Fri Sat
30 1 2 3 4 5 6
7 8 9 10 11 12 13
14 15 16 17 18 19 20
21 22 23 24 25 26 27
28 29 30 31 1 2 3
Friday, May 26, 2017



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

Or stop by…

- 3rd 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!