NIHS Residency TRAINING PROGRAM

Program: Radiology Specialty

Comprehensive Clinical Examination (CCE)

I. Definition of Comprehensive Clinical Examination (CCE)

The Radiology CCE is a structured, performance-based assessment designed to evaluate a candidate's readiness to function independently as a radiologist. The exam replicates real-world diagnostic and clinical scenarios to assess interpretation, decision-making, communication, and professional behaviour across all major radiology subspecialties. It evaluates a range of cognitive and applied skills through interactions with examiners using clinical cases and imaging datasets.

II. Comprehensive Clinical Examination (CCE) Exam Format

COMPONENT	DETAILS
Number of Stations	9 total: Rapid Reporting station Oral stations (5 core + 3 subspecialty)
Core Stations	Body, Cardiothoracic, Pediatric, Neuro, MSK
Subspeciality Stations	Interventional Radiology, Mammography, Nuclear Medicine
Duration per Rapid Reporting	60 min (40 cases)
Duration per core Station	30 minutes
Duration per subspeciality Station	20 minutes
Number of Examiners per Station	2

III. Clinical/Practical Skill Domains

Proposed Domains for NIHS	DEFINITIONS
Data Gathering / Clinical Context	Ability to gather relevant clinical history and understand imaging referral context.
Image Interpretation	Systematic and accurate interpretation of X-ray, CT, MRI, US, NM, PET, Mammography, etc.
Diagnostic Reasoning	Formulating differential diagnoses and integrating clinical/imaging findings effectively.
Decision-making & Management	Suggesting next steps in investigation or treatment, including interventional options.
Communication & Reporting	Clear and structured explanation of findings and their significance using appropriate language.
Professionalism & Ethics	Empathy, ethical standards, and respectful conduct in simulated clinical scenarios.
Radiation Safety & Technical Aspects	Awareness of radiation doses, safety protocols, contrast media risks, and image quality.

IV. Blueprint Outline

Radiology CCE blueprint is structured across core and subspecialty disciplines:

Core Major Stations:

- **Musculoskeletal Radiology (MSK)**
- **Neuroradiology & Head & Neck Imaging**
- **Pediatric Radiology (including Fetal & Obstetric Imaging)**
- **Cardiothoracic Radiology**
- **Body Imaging (Gastrointestinal & Genitourinary)**

Subspecialty Stations:

- **Breast Imaging (Mammography)**
- **Nuclear Medicine & PET**
- **Vascular & Interventional Radiology (IR)**

Additional Content Coverage:

- **The Rapid Reporting Station includes 40 high-yield emergency spot diagnosis cases to be interpreted in 60 minutes**.
- **It assesses the candidate's diagnostic speed and accuracy under pressure, mimicking real-world emergency radiology scenarios.**
- **Minimum Performance Level (MPL) determined by a standard-setting method such as modified Angoff or borderline regression**

V. Passing Score

- Each station will have a **Minimum Performance Level (MPL)** determined by a standard-setting method such as **modified Angoff or borderline regression**.
- In addition to meeting the Minimum Performance Level (MPL) of the stations, candidates **must also pass the Rapid Reporting Station independently**.
- All scoring rubrics and examiner checklists are validated and standardized.

VI. Time Management

- Examiners are trained to guide candidates efficiently through each station.
- Candidates will be informed when to move forward in the interest of time.
- Early completion of a station does not impact scoring.
- If clarification is needed, candidates may respectfully request it during the encounter.

VII. Examiner Professionalism

- Examiners maintain a professional demeanor, and neutral facial expressions are not indicative of performance.
- Candidates are encouraged to request a moment to collect their thoughts if needed.
- Examiners are appointed by NIHS and are trained for consistency and objectivity.

VIII. Conflict of Interest

- Prior academic or clinical interaction with an examiner does not constitute a conflict unless substantial training involvement is present.
- Candidates or examiners must declare any conflict at the start of the station. Substitutions will be made where feasible.

IX. Confidentiality

- Use of electronic devices or communication with peers during the exam is strictly prohibited.
- Violation of confidentiality or academic integrity will result in disciplinary action.

X. Recommended Resources

General Radiology

- **Brant & Helms' Fundamentals of Diagnostic Radiology**, 5th Edition, 2022
- **Radiology Review Manual** by Wolfgang Dähnert, 8th Edition, 2017
- **Chapman & Nakielny's Guide to Radiological Procedures**, 8th Edition, 2021

Cardiovascular Imaging

- **Fundamentals of High-Resolution Lung CT** by Webb et al., 2nd Edition, 2020
- **Chest Imaging: Fundamentals of Radiology** by Mamlouk & Ziai, 2023
- **Cardiac Imaging: The Requisites by Lawrence Boxt 2015**

Body Imaging

- **Core Radiology: A Visual Approach to Diagnostic Imaging** by Jacob Mandell, 2nd Edition, 2022
- **Fundamentals of Body CT** by W. Richard Webb, 4th Edition, 2014
- **MRI of the Abdomen and Pelvis: A Text Atlas** by Mortele, 2020
- **Body MRI by Richard C. Semelka and Michèle A. Brown**, 4th Edition, 2016

Neuroradiology

- **Osborn's Brain: Imaging, Pathology, and Anatomy**, 2nd Edition, 2017
- **Neuroradiology: The Core Requisites**, 4th Edition, 2022
- **The Essentials of Neuroimaging** by Yousem & Grossman, 2021

Musculoskeletal

- **Fundamentals of Skeletal Radiology** by Clyde Helms, 5th Edition, 2019
- **Musculoskeletal MRI** by Helms et al., 2nd Edition, 2009
- **Essentials of Musculoskeletal Imaging** by Bredella & Tirman, 2021

Pediatric Radiology

- **Fundamentals of Pediatric Imaging** by Lane Donnelly, 2nd Edition, 2016
- **Pediatric Radiology: The Core Requisites**, 4th Edition, 2016
- **Caffey's Pediatric Diagnostic Imaging**, 13th Edition, 2019

Interventional Radiology

- **Handbook of Interventional Radiologic Procedures** by Kandarpa & Machan, 5th Edition, 2016
- **Vascular and Interventional Radiology: The Requisites**, 2nd Edition, 2013

Nuclear Medicine

- **Essentials of Nuclear Medicine Imaging** by Mettler & Guiberteau, 7th Edition, 2018
- **Nuclear Medicine: The Requisites**, 4th Edition, 2013

Breast Imaging

- **Breast Imaging: The Fundamentals** by Cherie Kuzmiak, 2022
- **Breast Imaging: The Requisites**, 2nd Edition, 2010

General Imaging References

- Requisites Series (Chest, Neuro, Body, MSK, Pediatric, Breast, IR, NM)
- Chapman & Nakielny's Guide to Radiological Procedures
- Fundamentals of Skeletal and Body Radiology

XI. Journals

- Radiology (RSNA)
- AJR – American Journal of Roentgenology
- Insights into Imaging
- European Radiology
- Pediatric Radiology Journal
- Journal of Vascular and Interventional Radiology (JVIR)
- Nuclear Medicine Communications
- BIR guidelines, ACR Appropriateness Criteria, ESR recommendations

XII. Others

- Professionalism and Ethics Handbook for Residents (NIHS Edition)
- Essentials of Patient Safety, NIHS Latest Edition