



A View from the Trenches: How to Better Equip CT Technologists in Dealing with the Increasing Complexity of Modern CT Scanners

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Resources

www.asrt.org



- CT Consensus Meeting
 - *Computed Tomography in the 21st Century: Changing Practice for Medical Imaging and Radiation Therapy Professionals*
- CT Educational Needs Assessment



CT Consensus Meeting

- Sponsored by ASRT and ARRT
- August 4, 2007
- April 5, 2008
- 32 Member Panel
 - SNM
 - ACR
 - AEIRS
 - JRCERT, JRCNMT
 - NMTCB
 - U.S. Navy
 - Physicians
 - Vendors
 - Medical Physicist



Goals

“To serve as the groundwork for discussion, recommendations and future action in addressing the increasing use of CT and its impact on the role radiologic technologists play in ensuring high-quality patient care as medical imaging continues to evolve.”



CT Educational Needs Assessment



- Sponsored by ASRT
- December, 2005
- 10,000 CT Technologists (Certified and noncertified)
- 20% Response rate
- 31% Rural, 38% Suburban, 31% Urban



There is a need for increased education in Computed Tomography



- 13% of procedures but 70% of patients' radiation exposure (*Radiographics*. 2002;22:1541-1553)
- Increasing number of pediatric and adolescent exams (*Curr Opin Pediatr*. 2008;20(3):243-247)
- 68% of CT Technologists believe CT education should be increased in entry-level programs (CTNA)



Radiography Curriculum

Radiography Curriculum

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Radiography Curriculum

- Computed Tomography Generations
- Components, Operations and Processes
 - Data acquisition
 - Quality factors
 - Post-processing
- Radiation Protection



Radiography Curriculum

III. Clinical Competency

- A. ARRT Competency Requirements (refer to the document located at http://www.arrt.org/education/CompReqs/RAD_CX_2005.pdf)*
- B. Optional basic computed tomography
 - 1. Head
 - 2. Thorax
 - 3. Abdomen

Note: Although this may not be seen in the ARRT mandatory or elective radiography clinical competencies, a basic understanding of computed tomography is increasingly expected of new program graduates. In planning student clinical experiences, radiography programs with sufficient local resources are encouraged to provide students with clinical exposure to computed tomography.



ARRT Content Specification for Radiography



- Currently no required clinical competencies in CT
- ~~Next Revision: 2011~~
- Next Revision: 2012



More Educational Programs / Clinical Sites are Needed

- Major problem lies in securing clinical sites (CTC)
 - Staff need to perform exams
 - Clinical competency for new CT technologists
 - Students
 - Radiation therapists need to be trained
 - Nuclear medicine technologists need to be trained
- Only 4 known CT programs in the country
- No Accreditation for CT education programs
- 95% of CT technologists received OJT (CTNA)



There are not enough certified CT technologists in the US (ARRT, 2008)



- Approximately 50,000 technologists who perform CT procedures in the US
- 21,000 technologists hold CT certification
- 29,000 technologists perform CT without certification
- Why Not? (CTNA)
 - Does not lead to increased pay (61%)
 - Not required of employer or state (51%)
 - Workplace assessment validates competence (34%)
- Fewer CT certified technologists in rural areas (CTC)





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Can a workplace validate competence?



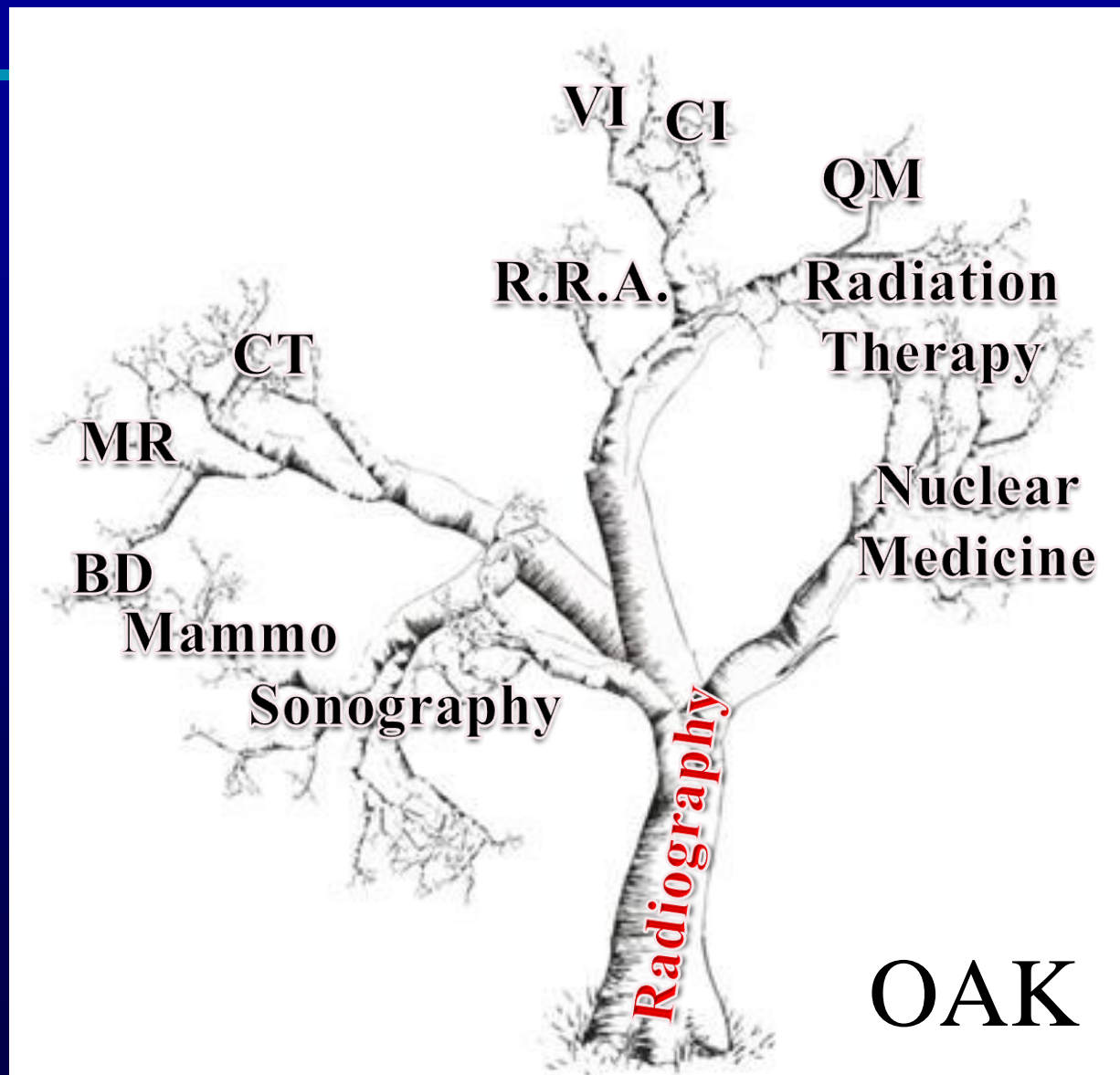
Answer is: Sort of...

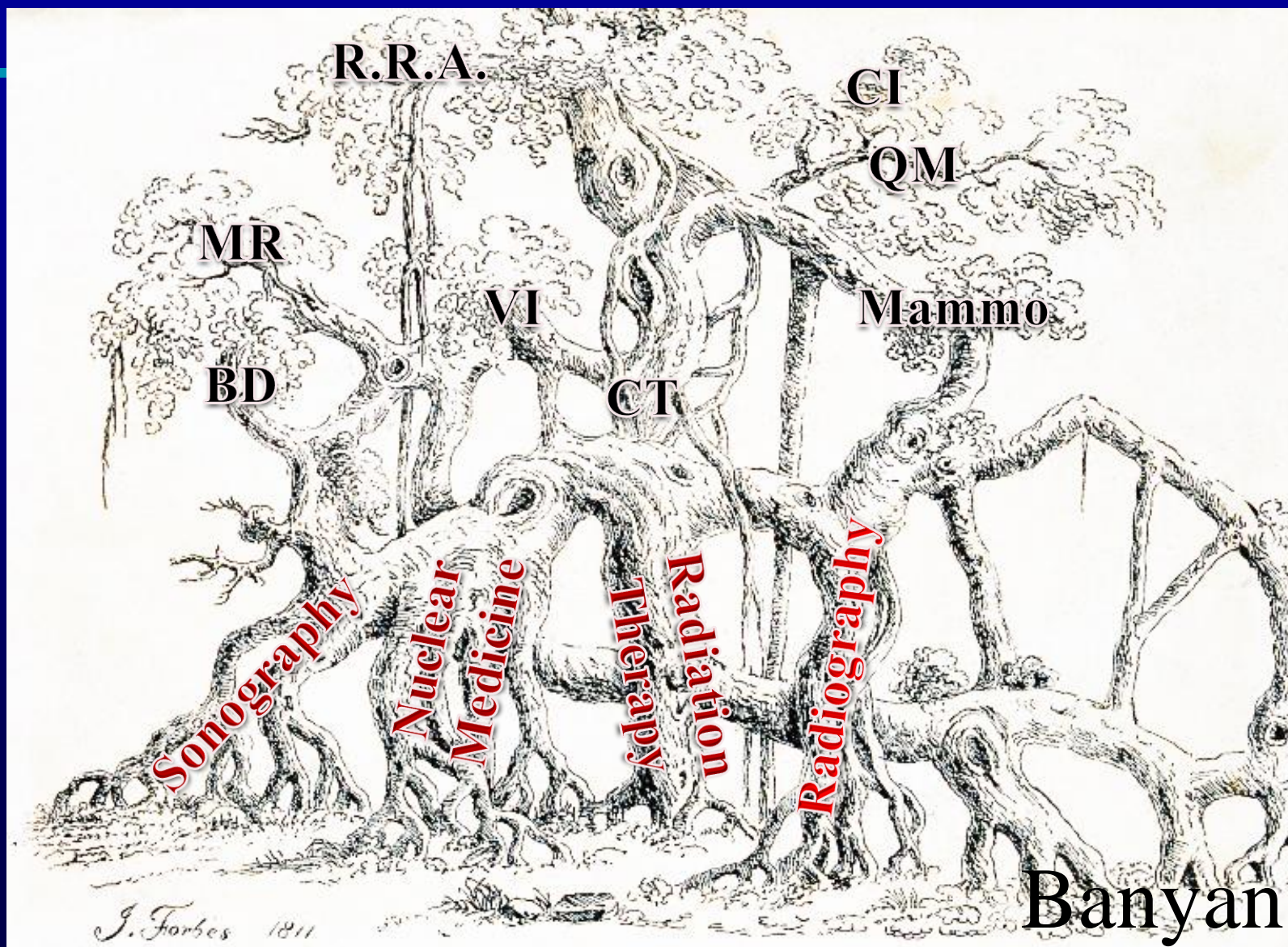


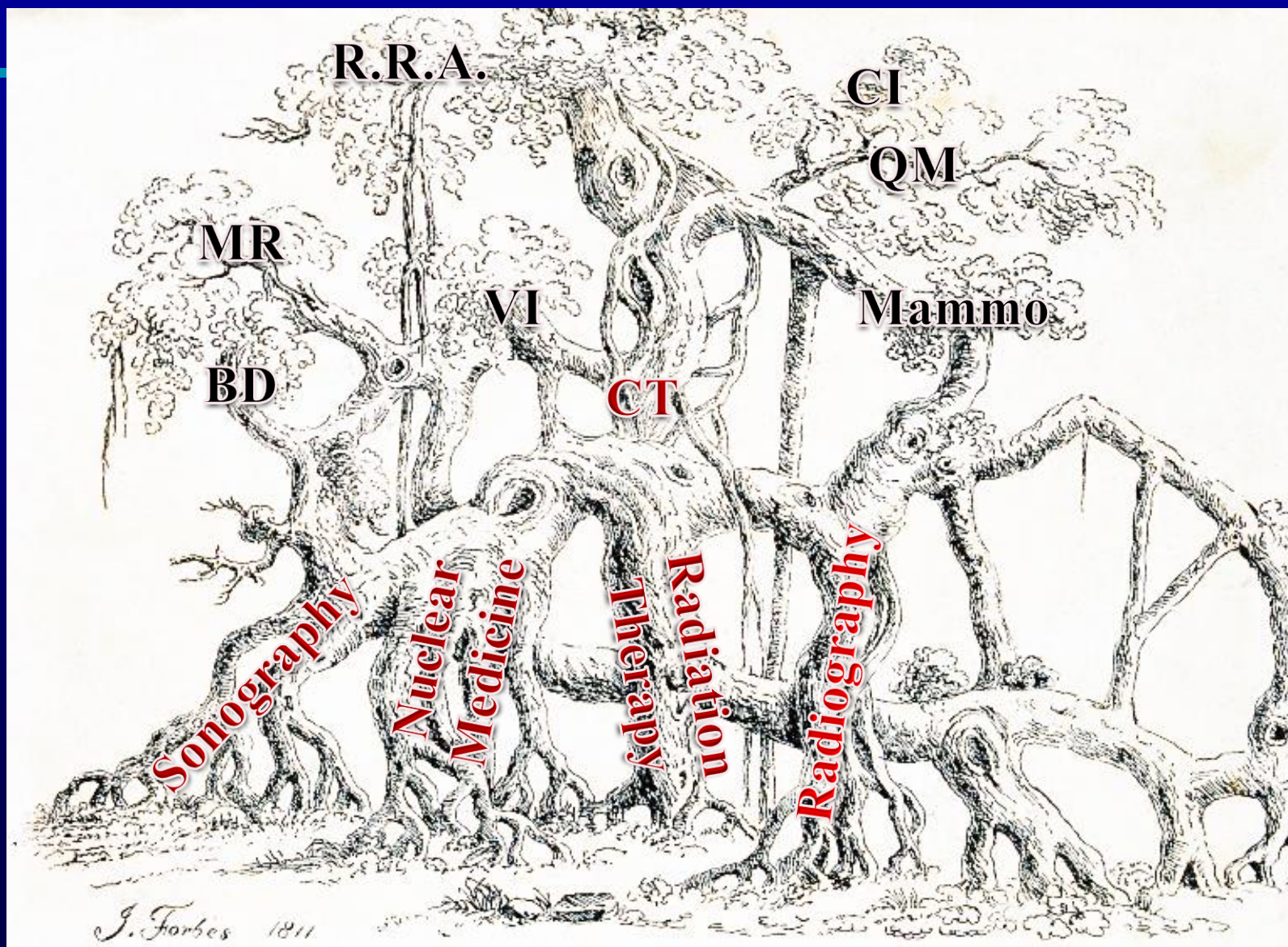


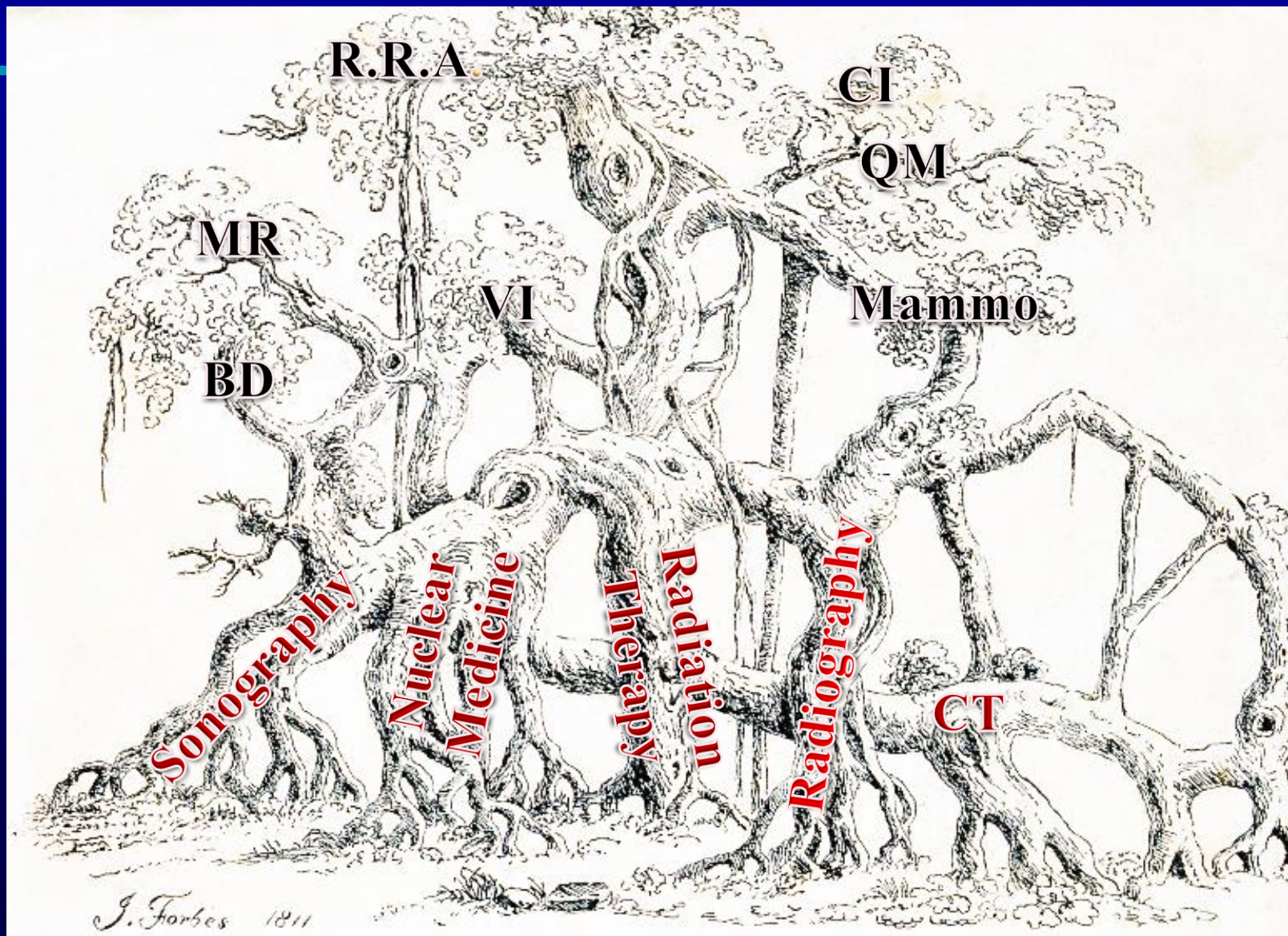
CT is a Core Skill

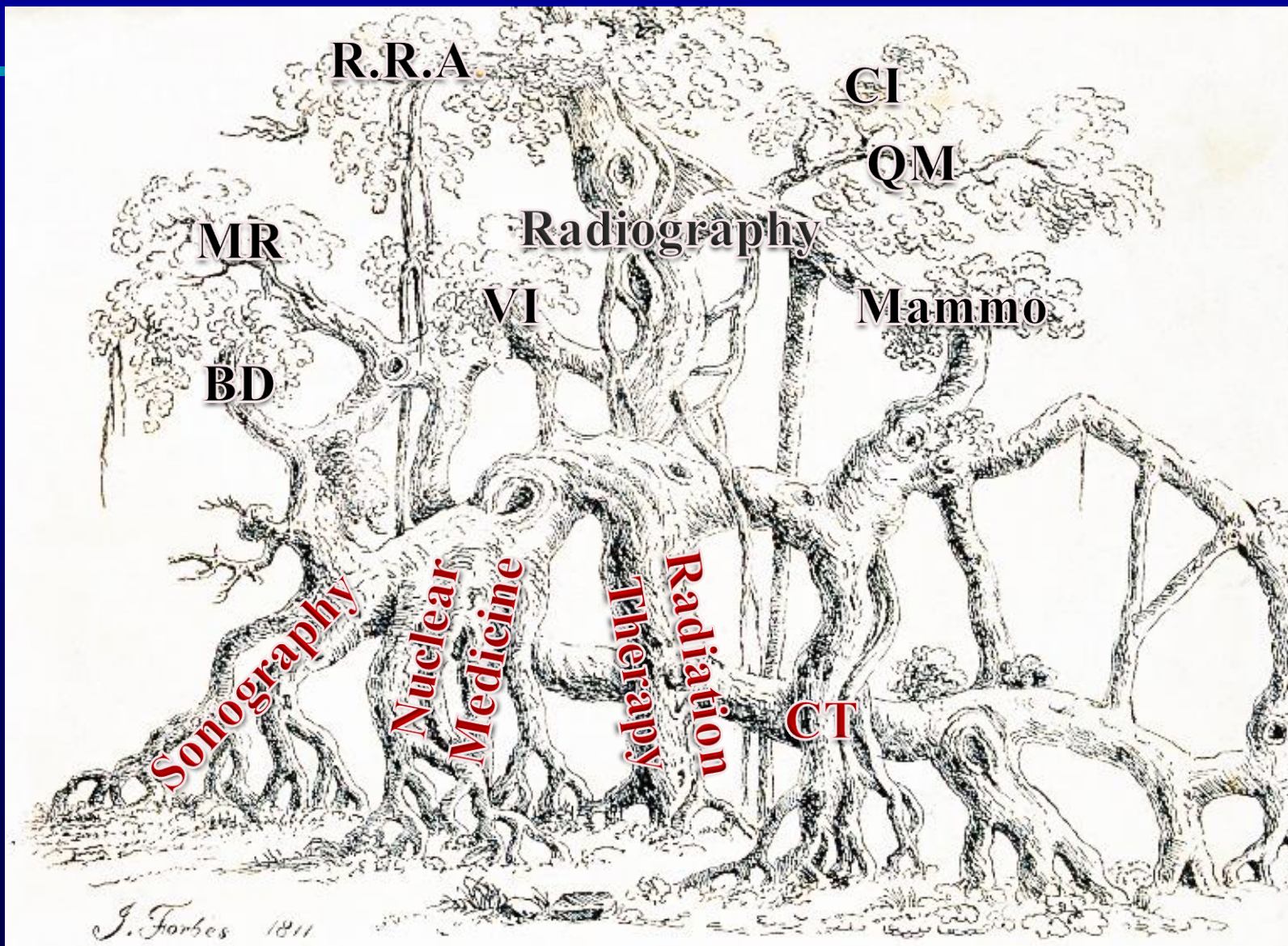
- 68% of CT Technologists believe CT education should be increased in entry-level programs (CTNA)
 - Within 5 years will entry-level radiographers be expected to perform CT? (CTC) – 56% yes
- CT Simulation is a core skill in radiation therapy (CTC)
- CT is a core skill in nuclear medicine hybrid imaging (CTC)
- Within 5 years, will radiation therapy technologists and nuclear medicine technologists perform diagnostic CT scans? (CTC)
 - Nuclear Medicine – 23% yes
 - Radiation Therapy – 31% yes













Regulations

- No federal regulations exist for CT certification or licensure
- 3 states require CT certification (CO, WI, OR)
- 6 states + DC have no licensure of any kind (Except MQSA)
- MIPPA (CT accreditation required in 2012)
 - IAC – Technical Director must be CT certified
 - ACR – *Recommends* post-primary certification
 - Joint Commission - ?



CT Needs

1. Create a common lexicon
 - Terminology
 - Protocols
 - Include radiologists, physicists, vendors, R.T.s
2. Incentivize CT certification
 - Federal or state statute
 - Accreditation requirements
 - Individual institutions (\$, promotion, position)
3. Bridge the education gap
 - Take the pressure off the clinical area
 - Provide education for those in rural areas
 - CT Basics (ASRT)



CT Basics

Update Your Professional Skill Set



CT Basics:

- Module 1 – Fundamentals
- Module 2 – Equipment and Instrumentation
- Module 3 – Data Acquisition
- Module 4 – Image Processing and Reconstruction
- Module 5 – Patient Safety
- Module 6 – Image Quality
- Module 7 – Procedures
- Module 8 – Cross-sectional Anatomy of the Head and Neck
- Module 9 – Cross-sectional Anatomy of the Chest, Abdomen and Pelvis
- Module 10 – Additional Applications

Complete all 10 online modules successfully and receive a diploma from the ASRT.

Also available: Institutional version licensed for staff trainings.

Get started at www.asrt.org/CTBasics.

CT Basics *A New Interactive Series*



essential education



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