Bedside Ultrasonography Training & Continuous Quality Improvement

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Point-of-care, Limited Ultrasonography

or

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"A life is not important,
   except in the impact it has on other lives."

Jackie Robinson

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♦ "This technology is very exciting, but it must remain in the hands of specially trained physicians... "Otherwise, the results could be disastrous."

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- H.E. Sigerist, MD
  - 1905
  - Referring to the *Stethoscope*

- PLUS: the Stethoscope of the 21st Century

- A Paradigm Shift

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◆ Objectives
  – Background & History
  – Training Guidelines
  – Early Quality Assurance
  – Current State of PLUS CQI-CQM
  – The Future of Training & Quality Management

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♦ Background & History

   – First used in U.S. ED's in 1980's

   – 1991 - 1st ACEP policy statement on EUS

   – 1991 - 1st SAEM policy statement on EUS

   – 1994 - SAEM Model Curriculum

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♦ Background & History
- 1995 - 1st book on Emergency Ultrasound (Heller & Jhele)
- 1995 - 1st US fellowship – Medical College of Wisconsin
- 1996: 1st Courses at National SAEM meeting
- 1999 – AMA Position Statement advocating specialty-specific guidelines for ultrasound use

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♦ Background & History
  – 2000 - Inclusion of EUS into EM core curriculum
  – 2001 – ACEP training guidelines published
  – 2001 – Emergency Ultrasound Section established in EM unfriendly AIUM after agreement with ACEP
  – 2002 - 11 EUS fellowships established
  – 2007 >25 fellowships

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♦ Training Guidelines: Position Papers
  – AMA
  – AIUM
  – Radiology (ACR, SRU)
  – Cardiology (ACC, ASE)
  – Ob-Gyn
  – Surgery
  – Family Practice

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♦ Training Guidelines: AMA

– AMA Resolution 802 - 1999

· RESOLVED, that the American Medical Association affirm that ultrasound imaging is within the scope of practice of appropriately trained physicians specialists.

· RESOLVED; That AMA policy on ultrasound imaging state that each hospital medical staff should review and approve criteria for granting ultrasound privileges based upon background and training for the use of ultrasound technology and ensure that these criteria are in accordance with recommended training and education standards developed by each physician's respective specialty society.

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♦ Training Guidelines: AIUM

- Established in 1950's

- Membership

  • Radiology

  • OB/GYN

  • Cardiology

  • Ultrasound technologists

- Recently added section on Emergency Medicine (est. 2000)

  • Co-chaired by EM and Radiology

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♦ Training Guidelines: AIUM

   – Completion of approved residency program (i.e. - radiology, cardiology, ob/gyn)

   – Completion of approved fellowship or post-graduate training (i.e. - cardiology)

   – Practice track

      • 100 hours of CME

      • 500 examinations per body area within 3 years

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♦ Training Guidelines: ACR
  – American College of Radiology
  – Society of Radiologists in Ultrasound
  – Many other organizations of radiologists that speak on ultrasound in medicine

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♦ Training Guidelines: ACR

– Completion of an ACGME accredited residency in specialty practiced with **200 hrs of Category 1 CME** in the subspecialty where ultrasound reading occurs and **500** cases relative to that subspecialty interpreted and reported during the past 36 months in a supervised situation.

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♦ Training Guidelines: EM

- – SAEM : Model Curriculum for Emergency Medicine Residency Training in Emergency Ultrasonography – 1998

- – Response
    - • Society of Chairmen of Academic Radiology (SCARD)
    - • Association of Program Directors in Radiology (APDR)

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♦ Training Guidelines: EM

– ACEP Emergency Ultrasound Guidelines 2000

– Consensus-driven from panel of "experts"

– 6 Sections on

- Introduction
- Scope of practice
- Training and Proficiency
- Credentialing
- QA and Documentations
- Future issues

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♦ Training Options
  – Introductory Courses
  – Extended Courses
  – Mini-fellowships
  – Sabbaticals
  – Fellowships
  – Customized Training

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♦ Training Options

– Books

– CDs & DVDs

– Websites

– Image & Video Banks

– Position Papers & Guidelines

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♦ Quality Assurance: the beginning
  – Documentation of proficiency
  – Credentialing
    • May use graduated credentialing categories
      – Level 1 – able to use machine but no management decisions
      – Level 2 – able to gain images but still requires oversight for management decisions
      – Level 3 – able to perform and interpret without supervision

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♦ Quality Assurance
  – QA and Documentation
    • Documentation (paper)
      – Written notes may be required with documentation of procedure following Medicare and JCAHO requirements
      – QA
        • Review all scans prior to credentialing
        • Sample percentage of all scans after privileges acquired
      – Equipment QA (maybe digital)
        • Follow institutional and manufacturer guidelines

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♦ Early Quality Assurance

– Most documentation was on paper

– Most feedback was face-to-face

– Problems:

• Durability

• Lack of face time

• Loss of commitment

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♦ Early Quality Assurance

  – Rural and Austere Settings

    • Frequently none

    • No cheerleader or guru

    • Loss of enthusiasm

    • Failure

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♦ Current State: PLUS Training & CQI-CQM

  – Credentialing: Hospital issue

    • Different criteria between institutions

    • Wide variance of requirements

    • Suggest use of ACEP EUS Guidelines for Emergency Department's credentialing criteria

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♦ Current State: PLUS Training & CQI-CQM

– CLEARLY explain your proposal

- Need
- Objectives
- Applications
- Cost
- Training
- QA

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♦ Current State: PLUS Training & CQI-CQM

– Form alliances with other departments with similar interest

- Ultrasound Technologists
- OB/GYN
- Surgery
- Critical Care Medicine
- Family Practice

– Jointly request limited privileges with other departments

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♦ Seek out understanding
- Radiology
- Cardiology
- OB/GYN

♦ Do not ask for permission from other departments.

♦ *Why give other departments control of yours?*

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♦ Emphasize ED's role as patient advocate
  - "Safety Net" for patients
  - Interested in "saving lives", not "making $$$"
  - Improved Quality of Care
  - Improved Risk Management for certain emergencies
  - Education of faculty (CME)
  - Education of residents
  - Decreased use of limited resources (US techs)
  - Improved management efficiency of ED patients

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♦ The Future of Training & Quality Management

– Future Issues in Clinical Sonography

- Research

- Pre-hospital care

- Multi- & Interdisciplinary Use

- Remote locations

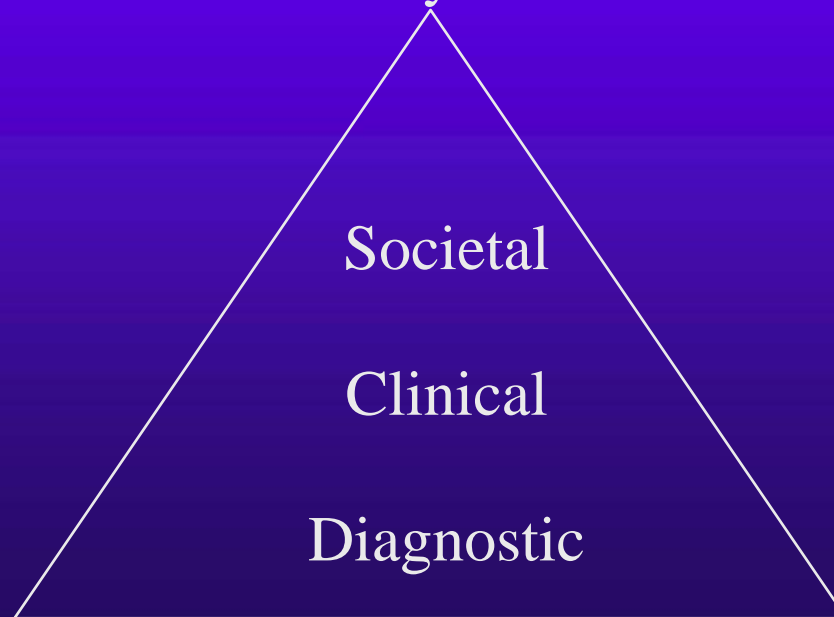- Medical Student Education

- Remote training & CQM

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♦ The Future of Training & Quality Management
  – Research
    • Outcomes Assessment Pyramid

Societal

Clinical

Diagnostic

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♦ The Future of Training & Quality Management

– Pre-hospital care

- Portability

- New applications

- Advanced triage

– Multi- & Interdisciplinary Use

- Not *Emergency* Ultrasound

- A slice of a bigger pie: Clinical Sonography

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♦ The Future of Training & Quality Management

– IT-incorporated Training

• Virtual reality

• Gaming

• Simulation medicine

– Remote Training

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♦ The Future of Training & Quality Management

– Remote CQM

- All digital – all the time

- Wireless transfer

- WWW

- *Near* real-time feedback

- Real-time feedback

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♦ The Future of Training & Quality Management
   – The future is now
   – Algorithmic thinking
   – The Gizmo

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Questions?