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Peer Learning Through Multi-Institutional Case Conferences

Nelly Tan, MD

Assistant Professor
Loma Linda University Medical Center
@nellytanmd
netan@llu.edu

Disclosure

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- RSNA Seed Grant

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Objectives

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Quiz

Peer Learning

Multi-institutional Case Conference & Experience

Collective Intelligence

Cycle of Physician Behavior in Group Feedback

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Quiz

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Group judgement accuracy is _____ compared to individual diagnostician

A. ~25% higher
B. ~10% higher
C. Similar
D. ~10% worse
E. ~25 % worse

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Quiz

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What is a necessary behavior to prompt physicians to reflect on errors?

A. React to data (skepticism, question)
B. Demonstrate change cues
C. Identify action plan
D. A notice from Peer Review coordinator

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Move from Peer Review to Peer Learning

- Peer Learning (cultural shift to Quality improvement)
  - Group learning
  - Case-based
  - *Performance* improvement
- PL underpins the principles of *learning*:
  - Deliberate practice: focus on weaknesses
  - Coaching from peers: Group thinking > individual
    - Accuracy 62% solo vs 85% group (23% increase)
  - Regular intervals to reinforce long-term learning

Larson D. el al Peer Feedback, Learning and Improvement: Answering the Call of IOM Report of Diagnostic Error. Radiology 2016

Barnett ML, et al. Comparative Accuracy of Diagnosis by Collective Intelligence of Multiple Physicians vs Individual Physicians. JAMA Netw Open. 2019; 2(3):e190096.

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Peer Learning through Multi-institutional Case Conference

- Open Multi-institutional Sub-speciality web-based case conference
  - Weekly:
    - MSK Intergalactic Bone Conference (>10 yrs)
    - Society of Thoracic Radiology (7 yrs)
  - Monthly: Abdominal Case Conference (~2 yrs)
- Multi-institutional, review 10-12 cases/session
- Participants contribute cases
- Screen share. Use Video-conference software
- Cardiothoracic & Abdominal - Recorded & Posted on YouTube

Chow R, Tan N, et al Peer Learning Through Multi-Institutional Case Conferences: Abdominal & Cardiothoracic Radiology Experience. Academic Radiology 2020 (accepted)

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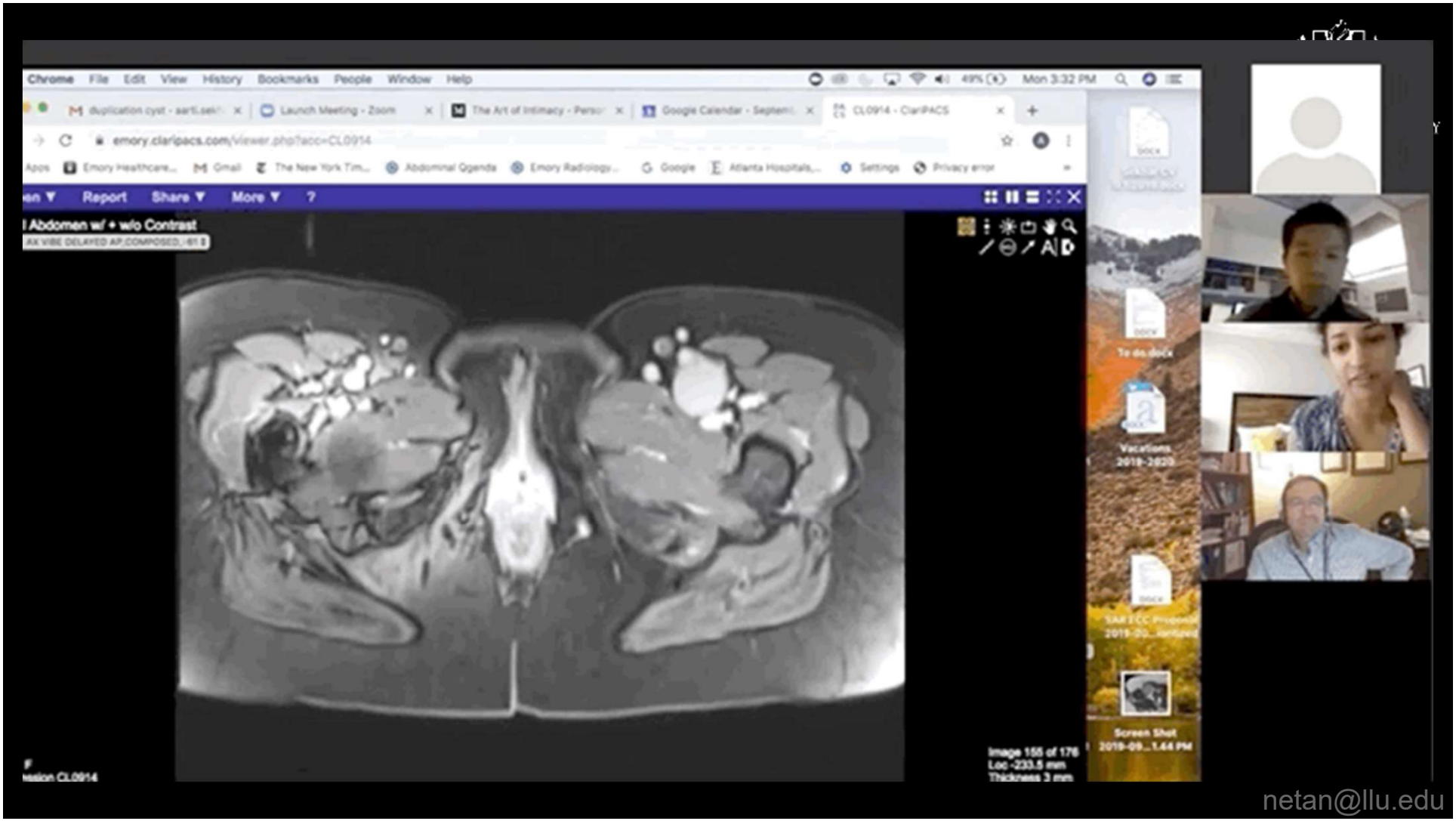
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Perceived Value (and Challenges) from Participants

- Surveyed Bone, Chest, Abdominal multi-institutional survey
  - Response rate: 57/119 (47.8%)
  - MSK 50% | Abdominal 21% | Chest 28%
  - Most academics, age ~50s, across US (some international)
  - Responses (knowledge, attitudes, behavior):
    - Gained new knowledge: 100% reported yes
    - Perceived Educational Value: 79% rated 5/5
    - Attitudes: 88% valued the education | 68% valued networking
    - Behavior:
      - 96% became more open to group discussion
      - 67% changed search pattern
      - 98% would continue to participate
  - Limitations: lack of CME credit and protected time

Armstrong V, Tan N, Sekhar A, et al. Peer Learning Through Multi- Institutional Web-based Case Conferences: Acad Radiol. 2019;S1076-6332(19)30578-1. doi:10.1016/j.acra.2019.11.009

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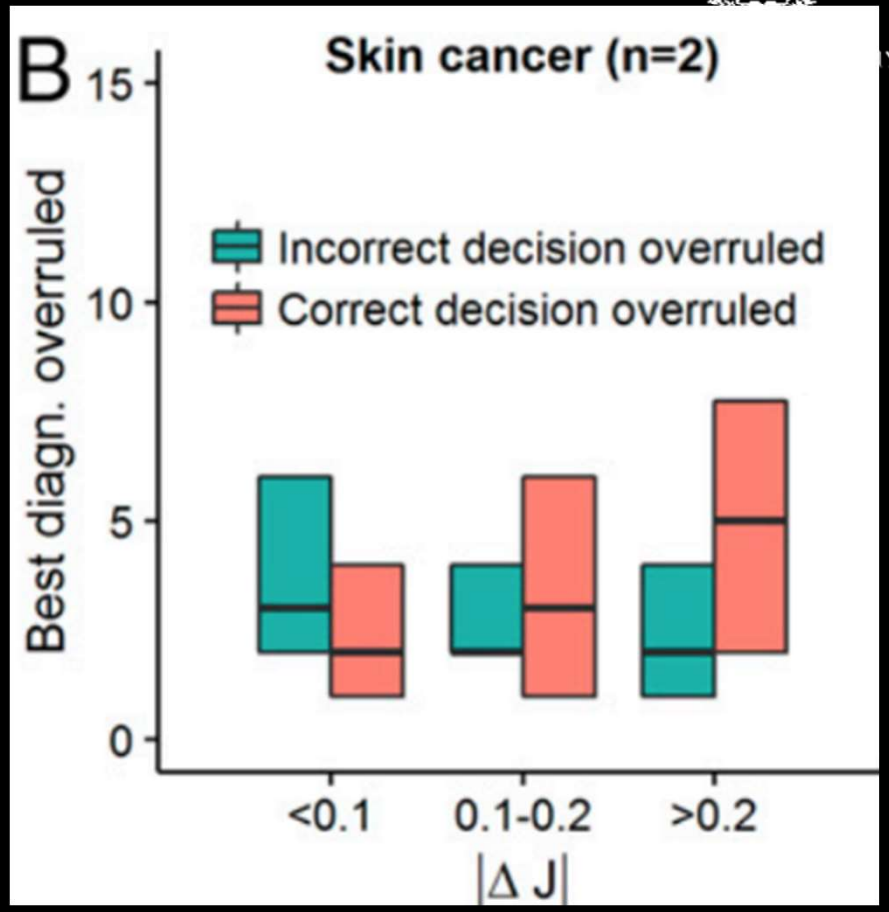
Collective Intelligence

- A group of diagnosticians w/ similar accuracy levels, combining independent judgements improves decision accuracy vs the best diagnostician
- When accuracy levels are very disparate, combining independent judgements < best diagnosticians



Kurves, RHJ eta al. Boosting Medical Diagnostics by Pooling Independent Judgements. PNAS 2016

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When accuracy levels are very disparate, combining ju

100 kids against 3 Pro Footballers ... who wins? https://www.youtube.com/watch?v=s5f8hjzxmkA

metan@llu.edu

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Combing judgements of a group of diagnosticians w/ similar accuracy improves decision accuracy vs best diagnostician

- When radiologists come together to learn from each other → our collective intelligence increases
- Group / Social learning powers this learning dynamics (absent with peer review system)

The best soccer Match Barcelona 5- Madrid 0 https://www.youtube.com/watch?v=rPEd-h8DdRI

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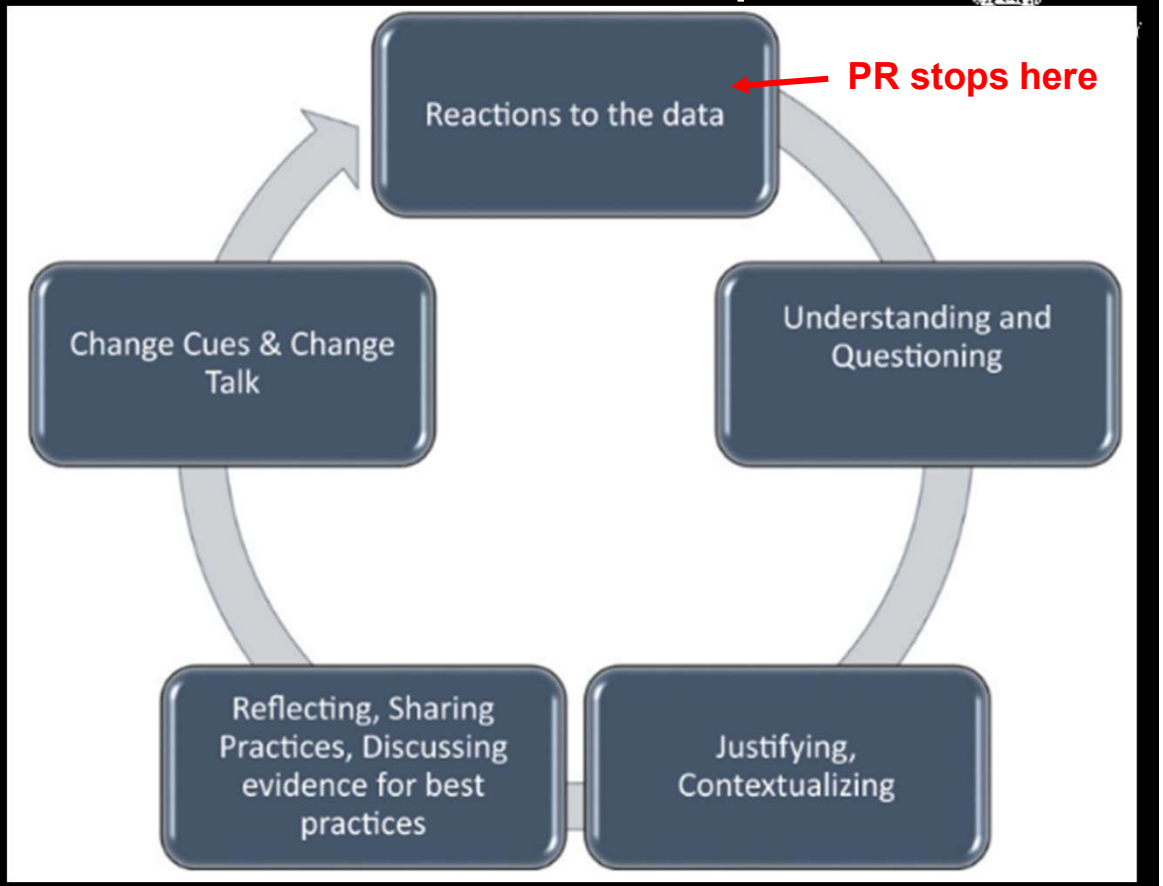
Cycle of Physician Behavior in Audit & Group Feedback

Physician progressed through a complement of behaviors

1. Reactions (skepticism, limitations, surprise)
2. Questioning & understanding
3. Reflection (practice variations, clinical guidelines)
4. Change cues arose from reflection → followed by action plan



Cooke et al. Implementation Science (2018) 13:104

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Cycle of Physician Behavior in Group Feedback

- Ability to learn through observation & interaction w others → critical to efficient learning and adoption of new behaviors
  - Trinh et al - group PR ~1000 cases / month → 5 meaningful discrepancies / mo (1 learning opportunity per 200 cases)
  - Multi-I case conferences discuss 8-12 cases / hour w/ several learning points / case.
- *Interaction* btw group members lead to discuss evidence-based practices, raise change cues, and move to action planning.

Cooke et al. Implementation Science (2018) 13:104
Trinh TW, et al Yield of Learning Opportunities From a Radiology Random Peer Review Program. AJR Am J Roentgenol. 2018; 211(3):630-4.
Chow R, Tan N, et al Peer Learning Through Multi-Institutional Case Conferences. Academic Radiology 2020 (accepted)

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Enabling multi-institutional case conferences

- Working model for sub-speciality case conferences
  - Mostly academic rads participate - learning (& camaraderie)
- Scalable: Open, web-based driven model
- Enablers/Steps for wider adoption:
  - White paper - legitimize PL
  - Formal program (legal issues assuaged)
    - Protected dedicated time
    - Alternative if no local PL available
    - Possibly smaller practices
    - CME or PL credit

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Take Home Points

- Peer Learning powered by Group Learning
- Collective > Individual Intelligence (w/ similar accuracy)
- Interactions allow participants to gain and apply knowledge
- Reproducible cycle of physician behavior in group learning
  - Process→ Question → Reflect → Change talk → Action
  - Lacking in Peer Review
- Multi-I case conferences scalable if needed

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