Using Telemedicine to Teach Clinical reasoning in Guyana –
A Feasibility Assessment

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OBJECTIVES

• Discuss the use of telemedicine as an innovative education tool in postgraduate medicine in Guyana

• Describe the feasibility of using CSR (chart simulated recall) as an online assessment tool for clinical reasoning in telemedicine for postgraduate medicine.
Clinical Reasoning

Consider our System 1 (intuitive) vs system 2 (analytical) thinking

Methodical, inquiry based approach to arriving at a patient’s diagnosis using pertinent detailed gathered with scientific evidence.

How is it usually taught/assessed?
- Chart Stimulated Recall
- Case discussions
- Role modelling
- Coaching

2. Allan D. Sniderman, MD; Kevin J. LaChapelle, MD; Nikodem A. Rachon, MA; and Curt D. Furberg, MD, PhD. The Necessity for Clinical Reasoning in the Era of Evidence-Based Medicine 2013
3. Jerome P. Kassirer. Teaching Clinical Reasoning: Case-Based and Coached 2010
What were the challenges in teaching and assessing clinical reasoning in our internal medicine residency programme in Guyana?
Figure 2. IM/ID Senior Registrars and Residents ($n = 21$) were asked to rate how often they use each resource when faced with a challenging clinical scenario to help guide clinical management.
What is Telemedicine?

Using information and communication technologies to support health care, research and evaluation, and for the continuing education of health care providers when distance separates participants. 1,2

1 WHO. A health telematics policy in support of WHO’s Health-For-All strategy for global health development: report of the WHO group consultation on health telematics 1998

Residents/Registrars send non-urgent queries to specialist At McMaster University.

Includes details such as:
- Brief succinct summary of case
- Demonstration clinical reasoning for clinical diagnosis
- Management details and justify with scientific evidence
- Reflect on one question that resident would like to ask faculty
Measuring Effectiveness of Telemedicine as a Teaching tool

- Used chart simulated recall assessment tool to review 156 cases by 2 independent reviewers (91% agreement)
- Survey to gauge resident satisfaction and perception of telemedicine
- Focus group discussion to discuss pros and cons of including telemedicine as part of curriculum
Mean CSR Overall Scores (Preliminary)

156 cases reviewed since pilot phase- Mean CSR scores on a scale of 9, 1-3 below expectations, 4-6 at expectations, 7-9 above expectations

<table>
<thead>
<tr>
<th>PGY</th>
<th>Academic Year 2017-2018</th>
<th>Academic Year (2018-2019)</th>
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<tbody>
<tr>
<td></td>
<td>No. Of cases/ Mean CSR score (SD)</td>
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<tr>
<td>PGY1</td>
<td>5 cases- 4.4 (2.0)</td>
<td>44 cases 5.4 (1.35)</td>
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<tr>
<td>PGY2</td>
<td>9 cases -4.7 (1.93)</td>
<td>36 cases 6 (1.35)</td>
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<tr>
<td>PGY3</td>
<td>3 cases- 4 (1)</td>
<td>59 cases 5.4 (1.6)</td>
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Reflection on the CSR comments and discussions

• Areas of weakness – integrating investigations into working diagnosis, generating a wider differential diagnosis

• Cases were all moderate to high in complexity so diagnostic dilemmas were common and system II (analytical) clinical reasoning was more applied

• The more residents engaged in telemedicine, it was noted they became more reflective and constructive on their discussions

• The new PGY1s did better as they completed more cases, had seniors who had now adopted culture of clinical reasoning and getting feedback from telemedicine so less hesitation to engage

The senior residents were now also primed to coach the junior residents
Results of Resident Feedback Survey

- **Helps with my decision making**
- **Adds to my knowledge base**
- **Feedback is helpful for me to improve my consultations/ case presentations**
- **Helps me get a different perspective from the consultant on the case and I learn from the clinical reasoning around the case**
- **Not useful – I only do it as it is required for my residency**

**TOTAL NUMBER OF RESIDENTS N=15**

- **Strongly Agree**
- **Agree**
- **Neutral**
- **Disagree**
- **Strongly Disagree**
## Focus Group Discussion

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<tr>
<th>PROS</th>
<th>CONS</th>
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<tr>
<td>● Improve management of complex patients</td>
<td>● Delayed responses – <em>improved after second focus group</em></td>
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<td>● Time-consuming</td>
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<td>● Enhance critical thinking when preparing for submission</td>
<td>● Technical issues with web-based interface- <em>improved with app</em></td>
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<td><em>implementation and improved WiFi</em></td>
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<td>● Access to specialists with evidence-based expertise</td>
<td><em>accessibility at GPHC</em></td>
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<tr>
<td>● Learn from specialists’ clinical approach and reasoning</td>
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<td>● Organise clinical presentation through informal feedback</td>
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Conclusion

• Telemedicine can be used in a resource limited setting for teaching clinical reasoning

• It is an innovative way to build international academic partnerships in global health education

• Telemedicine is especially useful in teaching System II clinical reasoning (analytical) for moderate- high complex cases

• Teaching clinical reasoning over telemedicine increased reflective practice among residents in clinical practice
Thankyou!

Merci!

Gracias!

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благодарю вас

Questions?