“In older people with suspected heart failure, does adding a focused ultrasound scan to the community pathway improve healthcare quality?”

Dr Emma Rees
Health Research Fellowship
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MRC framework for complex intervention trials

Research plan and progress

Core elements
- Consider context
- Develop, refine, and (re)test programme theory
- Engage stakeholders
- Identify key uncertainties
- Refine intervention
- Economic considerations
Learning new methods!

- Quant data collection
  - Case report forms (n=32)
  - PROMs

- Quant analysis
  - Data cleaning
  - Descriptive statistics
  - Frequencies, accuracy, Kappa

Consolidated Framework for Implementation Research: cfirguide.org
<table>
<thead>
<tr>
<th>CFIR domains</th>
<th>Quantitative result</th>
<th>Qualitative result</th>
<th>Meta-inference</th>
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</thead>
<tbody>
<tr>
<td><strong>Intervention</strong></td>
<td>N=32 (81±9y) 100% acceptance, 94% feasibility 50% scanned in chair Scan + 15mins to visit PROMIS2 65% complete</td>
<td>“relatives liked that it could be done at home” “patients all thought good idea” “more challenging in house setting” “not all questions relevant – many aren’t active”</td>
<td>• Scan protocol is feasible and acceptable • Adjust training to include scanning challenges • PROMIS2 unsuitable for cohort</td>
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<td><strong>Inner setting</strong></td>
<td>4 nurses Recruitment ~2.5 months 43% recruitment by 1 nurse 30% of all referrals eligible</td>
<td>“need a machine each” “Dr X supportive and could see clinical use” “Team positive” “remote expert would be helpful” “management can be short-sighted” “they don’t understand hospital-at-home service”</td>
<td>• Review machine availability and recruitment window • Consider infrastructure for remote expertise • Management believed to be a barrier - engage</td>
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<tr>
<td><strong>Process</strong></td>
<td>38% medication change 53% formal echo referral (6% inappropriate)</td>
<td>“improves decision making” “added to the working diagnosis, consolidated your thoughts” “a more reliable diagnosis” “start treatments with confidence”</td>
<td>• Diagnostic confidence impacts management decision • Current pathway appears less effective in this population</td>
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<td><strong>Individuals</strong></td>
<td>Prevalence LVSD 44% Agreement 0.81 (Kappa) Sensitivity 0.94 Specificity 0.88</td>
<td>“struggled with subcostal view” “could not get all views – is it me?” “sometimes difficult to determine if B-lines” “LUS ok and useful” “Confident with POCUS views”</td>
<td>• Variation in individual nurse confidence • Belief about skill ≠ accuracy results. • Review power calculation</td>
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Progress: Personal development
Reflections

If you could learn the difference between epistemology and ontology, that would be great.