Theme 1: Current Practice

Dr Nicola Desmond
Liverpool School of Tropical Medicine & Malawi-Liverpool Wellcome Trust
NIHR Global Health Research Group on Brain Infections
9th July 2019 – CMC Vellore
The Patient Journey

**PATIENT PRESENTS TO HOSPITAL**

**REQUIRED FOR PROCESSES - PHYSICAL:**
- Staff
- Equipment
- Reagents
- Money
- Electricity

**PROCESSSES:**
- Suspicion of BI
- Assessment by a clinician
- Doing the LP
- Doing other tests
- Requesting the right tests
- Getting samples to the lab
- Sample storage
- Sample processing
- Sample testing
- Reporting of results
- Communication to patient

**INFLUENCED BY TIME:**
- To assessment by a clinician
- To LP, from presentation
- To LP, from treatment
- To LP, from pre-hospital treatment
- To CSF storage
- To CSF processing
- To CSF testing
- To reporting, from LP
- To reporting, from presentation

**PATIENT RECEIVES A DIAGNOSIS**

**REQUIRED FOR PROCESSES – NON-PHYSICAL:**
- Expertise
- Quality control and assurance
- Belief in the (value of the) tests and their results!
- Motivation
Baseline (pre-intervention) Plan

8 patients & 8 samples per hospital

[A] Journey observation → ANALYSIS

Should answer:
1. What’s currently happening?
2. What within this might be impacting on diagnosis (+management)?

Should guide who is best to answer these, and with which questions (updated topic guide):
3. What are the factors responsible for these challenges and barriers to optimal diagnosis (+management)?
4. What can/should be done about these?

[B] Key informant interviews → ANALYSIS

Should answer:
3. What are the factors responsible for these challenges and barriers to optimal diagnosis (+management)?
4. What can/should be done about these?

3 from each of 3 key areas of each hospital: administration, clinical, and laboratory
Baseline (pre-intervention) Plan

- Journey observation
  - ANALYSIS
  - Key informant SSIs
    - Quantitative
      - By BS
        - Database analysis
      - Qualitative AND Integration of Qual+Quant
        - By Team at each site: social scientist, clinician, microbiologist
    - Qualitative – rapid per centre
      - By Team at each site: social scientist, clinician, microbiologist
    - Qualitative – rapid cross-centre
      - By social science working group
    - Qualitative – detailed
      - By social scientist
  - Qualitative – rapid per centre
    - By Team at each site: social scientist, clinician, microbiologist
  - Qualitative – rapid cross-centre
    - By social science working group
  - Qualitative – detailed
    - By social scientist

4-MONTH MAIN OUTCOMES ANALYSIS

DECISION MAKING FOR INTERVENTION
# Baseline (pre-intervention) Plan

## Theme 1 (Current Practice) – Baseline Data Collection & Analysis Plan

<table>
<thead>
<tr>
<th>Activity</th>
<th>Wk 1</th>
<th>Wk 2</th>
<th>Wk 3</th>
<th>Wk 4</th>
<th>Wk 5</th>
<th>Wk 6</th>
<th>Wk 7</th>
<th>Wk 8</th>
<th>Wk 9</th>
<th>Wk 10</th>
<th>Wk 11</th>
<th>Wk 12</th>
<th>Wk 13</th>
<th>Wk 14</th>
<th>Wk 15</th>
<th>Wk 16</th>
<th>Wk 17</th>
<th>Wk 18</th>
<th>Wk 19</th>
<th>Wk 20</th>
<th>Wk 21</th>
</tr>
</thead>
<tbody>
<tr>
<td>Journey data collection</td>
<td>☑</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Journey observation analysis</td>
<td></td>
<td>☑</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conducting interviews</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transcription of 2-3 interviews per site</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transcription and translation of all interviews</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inductive coding within each centre</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cross-centre coding framework development</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indexing of transcripts</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Charting per hospital and per centre</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cross-centre mapping and interpretation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Journey Modelling (Process Mapping)

- Identifying what steps occur, when, and how:
  - Patient: from presentation to discharge
  - Sample: from acquisition to result
- Can be used to identify bottlenecks, delays, barriers, challenges
- Could allow modelling of effects of intervention

Process map – ED patient flow (Martin Int Emerg Nurs 2011)
**Generic:**
Steps likely to be involved all or some (>10%) of the time.
Example 1:
Fever, headache, has been sleepy.
Has rapid malaria test by triage nurse, which is positive.
Sees clinical officer, who gives malaria treatment, and discharges.
Example 1 - SIMPLIFIED:
Fever, headache, has been sleepy.
Has rapid malaria test by triage nurse, which is positive.
Sees clinical officer, who gives malaria treatment, and discharges.
Journey Modelling - Domains

• What (process/event)
• Where (location (of patient/of sample/of process e.g. test or storage)
• Who (team? Individual? Cadre?)
• When (date, day of week, month, time (day/night))
• How (decisions / communications / organized or *ad hoc* e.g. standard procedure or one-off requirement)

• *Why [only in brief and what’s easily visible]*
COM-B Model (S Michie et al 2014)

Capability
Opportunity
Motivation
Why? - Interviews

• Minimal “why” data from journey CRFs analysed in a team:
  • Social scientist
  • Clinician
  • Microbiologist

• Decide which questions to ask, and to whom

• Semi-structured with per-hospital topic guide

• 3 from each of three key areas at each hospital (data saturation at 2 in some smaller hospitals?):
  • Administration
  • Clinical
  • Laboratory
Framework analysis

• Used widely in policy and systems research
• Creates charts and maps
• Steps (after transcription):
  1. Inductive coding using 2-3 “training” interviews from each hospital
  2. Cross-centre meeting – make coding framework
  3. Indexing of each transcript using coding framework
  4. Charting of indexed data for each hospital
  5. Cross-centre meeting – mapping and interpretation
Table 1. Extract of thematic chart for experience

<table>
<thead>
<tr>
<th>Experience</th>
<th>2.1</th>
<th>2.2</th>
<th>2.3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant number</td>
<td>Length of time since first qualification</td>
<td>Length of time in position as a school nurse</td>
<td>Importance of experience</td>
</tr>
<tr>
<td>School nurse 2</td>
<td>Qualified in 1995 (17 years)</td>
<td>Started in 2005 (six years)</td>
<td>‘Life experience brings you to that too. If I had come into school nursing straight as a newly qualified nurse without a whole load of life experience, I probably would not have the same ability to pick up on little things’</td>
</tr>
</tbody>
</table>

Hackett Nurs Res 2018

RESEARCH NOTES ON MOTIVATIONS TO VOLUNTEER

<table>
<thead>
<tr>
<th>Why volunteer</th>
<th>Why not volunteer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Because asked</td>
<td>Never been asked</td>
</tr>
<tr>
<td>Had time to spare</td>
<td>Can’t spare the time</td>
</tr>
<tr>
<td>To continue existing association</td>
<td>Potential disadvantages (cost, involvement, embarrassment)</td>
</tr>
<tr>
<td>Personal circumstances or link with need</td>
<td>Not that sort of person</td>
</tr>
<tr>
<td>A chance to make a contribution/pay back</td>
<td>Suspicion</td>
</tr>
<tr>
<td>General philosophy/beliefs</td>
<td>Interest/enjoyment</td>
</tr>
</tbody>
</table>

KEY DIMENSIONS IDENTIFIED

- whether asked
- perceptions of time available
- existence of personal link
- desire to make contribution
- general philosophy
- image of volunteering: fun/embarrassing? costs?
- self concept

Bryman & Burgess 1994
Operational simulation modelling

1. Generic model of patient & sample journeys
2. Models of observed journeys in each hospital
   1. What happens 80% of the time
   2. Variability – alternative journeys, and why they occur
3. Feed in potential intervention
4. Simulate the impact of these on:
   1. Achievement of diagnosis
   2. Likelihood of events occurring, e.g. tests
   3. Resource use
   4. Time to events
Post-intervention – Satisfaction Survey & Interview

- 3 people from each of 3 key areas at each hospital (data saturation at 2 in some smaller hospitals?):
  - Administration
  - Clinical
  - Laboratory
- Evaluation of perceived impact
- Perceptions of acceptability, ease of implementation and sustainability
- Structured electronic survey -> descriptive tables & figures
- Semi-structured interviews 30min -> framework analysis again
- Total 15 weeks (~3 months)
Theme 1 Breakout Session - Outcomes

**Outcome 1.1: Agree upon post-intervention qualitative reassessment plan**

1. Does this provide an adequate account of:
   a. how well the intervention has been implemented?
   b. how well it met its aim (improved diagnosis & management)?
   c. acceptability of the intervention?
   d. its unintended consequences?

2. Is this deliverable?
Theme 1 Breakout Session - Outcomes

*Outcome 1.2: Formulate a plan for delivery of theme 1 activities at each centre*

1. How much should the social scientist and coordinator participate in the journey *observations*?
2. What times of day and week need to be captured, and how could work schedules be tailored to this?
3. Who will form the analysing/interviewing team at each centre:
   a. social scientist;
   b. clinician;
   c. microbiologist?
4. Are there expected challenges at each hospital, and how could they be overcome?
5. Which hospitals have paper vs. electronic clinical notes/results, and how will this impact on obtaining journey data?
Questions/discussion...