Theme 2: The Intervention

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Classifying Health Interventions

Policy → Generic service process → Targeted service process → Clinical process → Patient Outcome

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Brain Infections Global

NIHR National Institute for Health Research
Complex Interventions

• Most service / systems / policy interventions involve complexity:
  • Complicated / multiple causal pathways (pathway complexity)
Complex Interventions

• Most service / systems / policy interventions involve complexity:
  • Complicated / multiple causal pathways (pathway complexity), and
  • Multiple components (intervention complexity)

Guise J Clin Epi 2017
Craig BMJ 2008
Complex Interventions

- Additional elements:
  - Target multiple individuals, groups, or system levels (*population complexity*)
Complex Interventions

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  • Applied to a complex and dynamic environment (*contextual complexity*)
Complex Interventions

• Additional elements:
  • Target multiple individuals, groups, or system levels (*population complexity*)
  • Applied to a complex and dynamic environment (*contextual complexity*)
  • Require complex implementation strategies (*implementation complexity*)

Craig BMJ 2008
Guise J Clin Epi 2017
Process – Overall (MRC)

Feasibility/piloting
1. Testing procedures
2. Estimating recruitment/retention & sample size

Development
1. Identifying evidence & theory
2. Modelling process & outcomes

Implementation
1. Dissemination
2. Surveillance and monitoring
3. Long term follow-up

Evaluation
1. Assessing effectiveness & cost-effectiveness
2. Understanding change process

Modified from Craig BMJ 2008
Process – This Programme

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Modified from Craig BMJ 2008
Comprehensive Interventions

• ‘Recipe’
• Thorough description of each component
• Fixed or modifiable components, or both
• Too rigid and prescriptive?
• Especially with varying context
Promoter Interventions

• Describe end result, NOT how to get there
• Standards, directives
• Allow significant autonomy in development and delivery
• But components likely very heterogeneous
• So an overall structure isn’t preserved
Somewhere in between?

• Probably need some direction, but planned tailoring to context

• Domains, e.g.:
  • Processes
  • Training/knowledge
  • Equipment
  • Medicines
  • Logistics
  • HR

Goldilocks and the Three Project Resource Libraries

This one is just right

Too Much Information

2020 Resource Library

Not enough Information
Decisions – Liverpool Meeting Jan 2019

• ‘In between’ approach: overarching domains & tailoring to hospitals
• Targeting multiple levels more likely to work
• Can’t affect some issues (night staffing?) -> focus on quick/easy gains
• Guidelines: what’s available? -> tailor as needed, use for advocacy
• Involve policymakers: local, regional, national
• Equipment and reagents: what’s needed, how to acquire
• Training: explore methods, eg online via TGHN
Development Approaches (O’Cathain 2019)

1. Partnership
End users have at least equal decision-making powers as research team.

2. Target population-centred
Based on views and actions of end-users.

3. Theory and evidence-based
Combination of published evidence and formal/specific theories.

4. Implementation-based
Attention to ensuring intervention can work in the real world.

5. Efficiency-based
A series of optimisation mini-studies precede main rollout and evaluation.

6. Stepped/phased
Emphasis on systematic overview of processes involved.

7. Intervention-specific
Approach constructed for the intervention.

8. Combination
Combination of approaches – mostly centred on behaviour.
Stepped Approach - 6SQuID (Wight 2015)

Step 1: Define and understand the problem and its causes
Step 2: Identify which causal or contextual factors are modifiable:
   A. Which have the greatest scope for change and
   B. Who would benefit most
Step 3: Decide on the mechanisms of change
Step 4: Clarify how these will be delivered
Step 5: Test and adapt the intervention
Step 6: Collect sufficient evidence of effectiveness to proceed to rigorous evaluation
Approach (Stepped) - 6SQuID (Wight 2015)

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Can start to think about these...
### Intervention Domains & Components

<table>
<thead>
<tr>
<th>HUMAN RESOURCES</th>
<th>ACCESS &amp; PROCUREMENT</th>
<th>PROCESSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical training</td>
<td>Diagnostic kits</td>
<td>Clinical algorithms</td>
</tr>
<tr>
<td>Lab training</td>
<td>Consumables</td>
<td>Lab algorithms</td>
</tr>
<tr>
<td>HR management</td>
<td>Equipment</td>
<td>Lumbar puncture pack</td>
</tr>
<tr>
<td></td>
<td>Medicines</td>
<td>Logistics</td>
</tr>
</tbody>
</table>

*Each component tailored to hospitals’ needs & capacity*
Core Intervention Working Group

Purpose:
To ensure some consistency of components and approach is retained across centres

Membership:
Tom Solomon; Richard Lilford; V Ravi; Priscilla Rupali; Rafael França; Jen Cornick; Nic Desmond; Mike Griffiths; Benedict Michael; Chris Parry; Lance Turtle; Fiona McGill
Co-design Structure for Intervention

PATIENT & PUBLIC INVOLVEMENT PANEL

CORE WORKING GROUP

CENTRE INVESTIGATORS

HOSPITAL STAFF & POLICYMAKERS
Local Context

All of this will vary by hospital:

• Likelihood of uptake
• Ease of implementation
• Cost: short and long term
• Likelihood of sustainability
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Theme 2 Breakout Session - Outcomes

**Outcome 2.1: Decide the overall structure of the intervention**

Questions:

1. Do the domains make sense?
2. Will the domains capture all relevant anticipated components of the intervention?
3. Will they allow room for unanticipated components?
4. Are there domains not present, which need to be?
Theme 2 Breakout Session - Outcomes

**Outcome 2.2: Highlight local contextual considerations for the intervention**

Questions:
1. What local issues need to be considered when developing the intervention?
2. What local challenges to implementation can be expected?
3. What can be done now, without biasing the baseline observation phase, to prepare for these?
A few words from Richard Lilford & Tom Solomon...
Questions/discussion...