Developing a framework for the evaluation of digital mental health applications

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Background

- Lack of dedicated regulation (except type/aim of app (prevention to substitution) available resources and expertise for evaluation other real world constraints
- Development phase (initial idea to large scale RCT ready)
- Up to date Incentives
- Scientific methods under revision
- Type of framework user (public, developer, NHS, academic)
- Personalization: allow people to be promoted
- Trusted (recommendation by developers)
- Limited resources and expertise for evaluation
- Usef ul categories e.g. app type, 'Agile' science: adaptable, iterative, real world constraints, built into product development

Framework for developers

<table>
<thead>
<tr>
<th>Idea</th>
<th>Theoretical ground work: expectations, existing evidence, planning</th>
<th>Will this work?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product development</td>
<td>Co-design the product with stakeholders to ensure user friendliness/relevance Establish user engagement and clinical safety (and privacy, technical performance etc.) and keep tracking these throughout product’s lifetime Start thinking about effectiveness and cost effectiveness</td>
<td>Do people find it useful and easy to use? Do people use it correctly?</td>
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<tr>
<td>Feasibility (formative evaluation)</td>
<td>Focus on process evaluation, qualitative analysis, predictors/indicators Allow methods and digital product to be adapted</td>
<td>Is it possible that this tool has any health &amp;/or cost benefits?</td>
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<tr>
<td>Formal evaluation</td>
<td>Focus on outcome evaluation, quantitative analysis, validated outcome measures Improvement over current best alternative (if applicable) Methods and digital product remain stable RCT still golden standard but alternative designs being proposed and tested</td>
<td>Which health benefits does this tool provide? Is it worth the cost?</td>
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<tr>
<td>Embed</td>
<td>Keep up to date and implement small improvements while the digital tool is being promoted and becoming 'mainstream'</td>
<td>Does it still work?</td>
</tr>
</tbody>
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Yet another framework?

Content comes from existing frameworks/guidelines - focus on implementation - How do we get people to use the framework (correctly)?

METHODS: 
Educate and ask the various stakeholders (public/patients, developers, NHS commissioners, NHS staff, charities, academics etc) 
Co-design feasible evaluation strategy, test, do process evaluation, repeat - currently at small scale to prepare for scaling up in the future

FLEXIBILITY to adapt to
- type/aim of app (prevention to substitution) 
- development phase (initial idea to large scale RCT ready) 
- type of framework user (public, developer, NHS, academic etc) 
- current best practice, academic consensus, regulations, ... 
- available resources and expertise for evaluation 
- other real world constraints

Framework for general public

Workshop and interviews
Public is interested in contributing to a crowdsourced platform for app evaluation

- Non-commercial and transparent 
- Trusted (recommendation by clinician and trusted bodies) 
- Up to date 
- Train and educate users, make people understand the importance
- Incentives for reviews 
- Intelligent searches/suggestions 
- Useful categories e.g. app type, illness, user age group 
- Personalization: allow people to use overall score or pick their priority topic(s) - people have different priorities

Questionnaire
Try it out yourself at https://goo.gl/O35ft9

5 out of 6 responders (aged between 18-40 years) had used apps before for health or wellness and all felt confident using mobile apps and the internet.

Recommendations from people who have used the app were rated just as highly as recommendations from friends, and higher than any other sources including the NHS, clinicians or other experts, echoing the existing culture of checking online reviews by peers before committing to buy a product.

All responders said they would read reviews on health apps, 4 would endorse reviews (e.g. by clicking a ‘like’ button) and 2 would write them.

Which topics are important, how should we name and explain them?

Correct content 
Clinical safety 
Health benefits 
Cost effective 
Privacy 
Security 
Transparency 
User engagement 
User friendly 
Technical performance 
Compatibility 
Recommendations by experts 
Recommendations by users 
Future proof

Guestimate per year:
100,000 new health apps 
0.07% registered for clinical trial 
0.007% published results

"most health apps are mostly harmless and likely useless"