How a model for evaluating communication strategies could help to unpack and address vaccine hesitancy

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Communication interventions for childhood vaccination

- Communication strategies are widely used to address vaccine awareness and acceptance
  - Examples:
    - Provider discussions with parents
    - Motivational interviewing
    - Tailored print or multimedia resources
    - Social media messaging
    - Peer and community-based discussions
Determining the effects of communication is challenging

- “How do we know what works? Identifying and prioritising stakeholder-relevant outcomes to measure the effects of communication for childhood vaccination” (doctoral research)
Commonly measured endpoint outcomes

- Though communication is often multi-faceted, most evaluations only measure endpoint outcomes related to vaccination status or behaviour.

<table>
<thead>
<tr>
<th>Vaccination status</th>
<th>Time to vaccination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receipt of vaccine/s</td>
<td>On-time vaccination</td>
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Primary outcomes drawn from review of trials evaluating vaccination communication interventions (Kaufman J Clin Epi 2016)
How can we unpack the effects of communication on hesitancy?
What else is impacted by communication?
What else is impacted by communication?

- ‘Intermediate’ outcomes can tell us:
  - whether communication is impacting hesitancy
  - when there may be potential external barriers
  - if the communication is being delivered in inconsistent or problematic ways
Outcomes associated with hesitancy

- **Theories**
  - e.g. Health Belief Model, Integrated Behavioral Model\(^1\)

- **Tools**
  - e.g. Parent Attitudes about Childhood Vaccines survey\(^2\), Vaccination Confidence Scale\(^3\)

1. Glanz 2008
2. Opel 2011
3. Gilkey 2014
Outcomes associated with health communication

- Decision-making and decision aids
- Consumer health communication
- Community engagement communication
Outcomes associated with communication design and delivery

- Communication effectiveness depends on how it is delivered and perceived

- Satisfaction with content, deliverer, format, timing
- Clarity of the communication
- Perceived provider knowledge/competence
- Intervention reach or uptake
- Resource use (cost and time)
- Intervention acceptability
- Perceived accuracy/quality of the intervention

Communication effectiveness depends on how it is delivered and perceived.
<table>
<thead>
<tr>
<th>CORE AREAS</th>
<th>DOMAINS</th>
<th>OUTCOMES</th>
</tr>
</thead>
</table>
|             | Knowledge or understanding | - Knowledge or understanding  
|             |         | - related to vaccines, schedule, diseases, risks, accessing services, finding and judging information, child health, vaccination guidelines, or communication |
|             | Attitudes or beliefs | - Attitudes or beliefs  
|             |         | - related to vaccines, reactions, delivery or pain, safety, diseases, or health system |
|             |         | - Intention to vaccinate |
|             |         | - Degree of vaccine acceptance |
|             |         | - Level of perceived support to access vaccination |
|             | Decision-making | CONSIDERING THE OPTIONS  
|             |         | - Predicted feelings of regret (anticipated regret) |
|             |         | - Degree of certainty (decisional conflict) and clarity of values |
|             |         | - Factors influencing the decision  
|             |         | - perceived risks of vaccine or disease, perceived ability to vaccinate, views of others (social norms) |
|             |         | MAKING THE CHOICE  
|             |         | - Feelings and features of the decision-making process  
|             |         | - satisfaction with process, perceived control, perception of shared decision-making, informed consent |
|             |         | - Decision-making support  
|             |         | - perceived support, satisfaction with support |
|             |         | - Feelings about the choice  
|             |         | - value congruence, decision satisfaction, confidence in decision, decision anxiety, regret |
|             | Vaccination status and behaviours | - Vaccination uptake/coverage |
|             |         | - Timeliness of vaccination |
|             | Health status and well-being | - Level of well-being, anxiety or stress  
|             |         | - related to receiving or delivering communication intervention, vaccination, diseases |
|             |         | - Health outcomes (morbidity or mortality)  
|             |         | - related to vaccination or disease |
|             | Intervention design and implementation | - Satisfaction with the communication intervention |
|             |         | - Views about communication intervention  
|             |         | - perceived accuracy, quality, effectiveness or influence of intervention on decision |
|             |         | - Use or uptake of communication intervention |
|             |         | - Patient-centredness of the communication encounter |
|             | Community participation | - Level of community participation of individuals  
|             |         | - in vaccination events, intervention design, programme delivery, research, policymaking, coalitions or programmes |
|             |         | - Features and perceptions of vaccination coalition or committee members  
|             |         | - membership numbers or diversity, perceptions of coalition influence, satisfaction or confidence in coalition functioning, perceptions of leadership or of being a member |
|             |         | - Vaccination coalition or committee functionality  
|             |         | - communication between staff/members/community, meeting frequency, adherence to goals, community perceptions of functionality |
|             | Resource use | - Cost (money, time, other resources) related to intervention or vaccination |
|             |         | - Cost-effectiveness of intervention development, delivery, or design |
Developing an evaluation model

- Evaluation is necessary to:
  - build on previous developments
  - reduce wasted resources
  - identify how to adapt strategies for different settings

- Not always possible to evaluate comprehensively, but any assessment of impact is better than none
1. What is the purpose of the communication?

- Identify the problem and population to be targeted
- Design the communication to address this problem

Acceptance? Awareness?
- Safety scare
- Community with low coverage
- Outbreak
- New vaccine introduction

Communication intervention
2. Select intermediate outcomes that reflect the communication purpose

- Not every outcome can be measured
- Which are feasible and can indicate whether the intervention is making a difference?

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Acceptance

Communication intervention:
- Knowledge about vaccines, schedule, services
- Trust in provider and communication
- Decisional conflict
- Intention to vaccinate
- Attitudes about vaccine safety or efficacy
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3. Include outcomes that assess the design and delivery

- Knowledge about vaccines, schedule, services
- Trust in provider and communication
- Decisional conflict
- Intention to vaccinate
- Attitudes about vaccine safety or efficacy

- Clarity of the communication
- Resource use (cost and time)
- Intervention acceptability
- Intervention reach or uptake
- Perceived provider knowledge/competence
- Satisfaction with content, deliverer, format, timing
- Perceived accuracy/quality of the intervention

Acceptance
4. Select pragmatic range of outcomes and report all selected

Acceptance

Communication intervention

- Knowledge about vaccines, schedule, services
- Trust in provider and communication
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References


- Kaufman J, et al. Outcomes mapping study for childhood vaccination communication: too few concepts were measured in too many ways. *J Clin Epi* 2016, 72:33. (Review of outcomes measured in trials)


