Design and evaluation of an audit and feedback implementation intervention for healthy food policy in school canteens

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In partnership with our community
Background

• Childhood obesity presents immediate and long term health risks
• Key driver of unhealthy weight gain in children is poor diet
• Creating environments supportive of healthy eating and the development of health eating behaviours
Background
Background

• Between 2 -11% ↓ total fat intake
• 0.3 and 0.4 serves ↑ fruit and vegetables/per day
• Regulatory policy to restrict unhealthy foods ↓ sale of foods 2 years after implementation
Background – NSW policy context

New South Wales, Fresh Tastes @ School Healthy Canteen Strategy

- Introduced 2005
- Restrict sale of unhealthy (red)
- Healthy foods (green) should dominate menu
Background

- NSW (n=185) - 90% not compliant with FT@S
- Victoria (n =100) - 40% not compliant
- New Zealand (n=200) - 16% of schools have policy; 96% unhealthy, 20% did not sell healthy options
- US (n=397) - 92% provided foods that did not meet policy standard
- Brazil (n=345) - 93% not compliant with legislated policy
Rabin et al 2010

- No study of implementation for healthy canteen policy

- Other models in schools??

- HNEPH: Intensive canteen support (face-to-face)
Background

- Services approx. 850,000 people across 130,000 square kilometres
- 25 local council areas, 27 hospitals; 70+ community health facilities, 500+ schools, 300+ childcare services
Background

Barriers to implementation in canteens

- Difficulties understanding recommendations
- Classifying foods in accordance to nutrient guidelines
- Provisioning healthy foods
- Constantly changing nutritional content of commercial foods
- Transient staff/volunteers
- Complex social environment
- Local context = many small/remote schools
  - Canteen opening hours, limited volunteers/support, access to fresh foods, distance from routine services
Aim

Aim: Improve implementation of FT@S in primary schools particularly in rural/remote regions

I. reduced % of schools listing ‘red’ or ‘banned’ foods and beverages on menu

II. increased % of schools with more than 50% of items on their menu classified as ‘green’ items
Intervention considerations

• Accessible support =? non-mediated delivery
• Address canteen specific barriers
  - Accurately classify foods
  - Ongoing support (dynamic environment
  - Assist provisioning
  - Tailored support
• Flexible and allow for local consideration/issue
• Relatively low cost
Evaluation considerations

Audit and feedback (performance feedback)

- Used in various settings but no RCTs in schools
- Desired practice behaviour improved by up to 17% on baseline behaviour (Ivers, 2012)
- Effect ↑ when
  - baseline compliance low
  - verbal and written feedback
  - includes explicit targets and action plans
  - delivered more than once
  - delivered by reputable source
Intervention design

Multi-component, multi-time point menu audit and feedback

• Initial school contact to engage principal and canteen manager (face-to-face visit if feasible)
• Menu audited by trained dieticians
  – using recommended traffic light coding (red, amber, green)
• Dieticians compile written feedback report
• School Support Officer known to school sends/emails written report and provides verbal feedback + action plan/explicit targets
• Follow up support call, provision of resources
• 2 to 4 rounds (~1 per term)
Evaluation - framework

Method: RCT n = 36 v 36

Eligibility:
Red or not 50% green
Open ≥1 day per week

Allocation:
Random number
(inception cohort, concealed)
Evaluation - outcomes

• **Primary outcomes:**
  – % of schools with ‘red’ or ‘banned’ items
  – % of schools with >50% of products = green

• **Secondary outcomes:**
  – Menu composition (% ‘red’, ‘amber’ and ‘green’ foods)
  – Canteen profitability
  – Cost-effectiveness

• **Process measures:**
  – Intervention dose - number, timing and content of successful and unsuccessful process attempts
## Interim results

### Characteristics of included schools

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Control (n=37)</th>
<th>Intervention (n=37)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of students</td>
<td>104 (IQR53, 193)</td>
<td>175 (IQR59, 336)</td>
</tr>
<tr>
<td>Government schools</td>
<td>81% (30)</td>
<td>78% (29)</td>
</tr>
<tr>
<td>Paid manager</td>
<td>38% (14)</td>
<td>49% (18)</td>
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<tr>
<td>No. volunteers</td>
<td>2 (SD1.5)</td>
<td>2 (SD0.7)</td>
</tr>
<tr>
<td>Profit in preceding year</td>
<td>54% (20)</td>
<td>64% (24)</td>
</tr>
<tr>
<td>Aware of policy</td>
<td>67% (25)</td>
<td>70% (26)</td>
</tr>
<tr>
<td>Confident can change menu</td>
<td>70% (26)</td>
<td>64% (24)</td>
</tr>
<tr>
<td>Principal values FT@S</td>
<td>51% (19)</td>
<td>57% (21)</td>
</tr>
<tr>
<td>% red</td>
<td>5</td>
<td>9.5</td>
</tr>
<tr>
<td>% green</td>
<td>34.5</td>
<td>35.5</td>
</tr>
</tbody>
</table>
## Interim results

### Intervention delivery (~ 9 months)

<table>
<thead>
<tr>
<th>Stage/term</th>
<th>Written feedback</th>
<th>Verbal feedback</th>
<th>Support call</th>
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<tbody>
<tr>
<td>Round 1</td>
<td>36/37</td>
<td>26/37</td>
<td>13/27</td>
</tr>
<tr>
<td>Round 2</td>
<td>11/15</td>
<td>8/15</td>
<td>7/15</td>
</tr>
<tr>
<td>Round 3</td>
<td>15/37*</td>
<td>15/37*</td>
<td>10/37*</td>
</tr>
<tr>
<td>Round 4</td>
<td>*</td>
<td>*</td>
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</table>

* Ongoing
## Interim results

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Red compliant</th>
<th>Median % red</th>
<th>Green compliant</th>
<th>Median % green</th>
<th>Fully compliant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>1/37 (3%)</td>
<td>9.5</td>
<td>6/37 (16%)</td>
<td>35.5</td>
<td>0/37 (0%)</td>
</tr>
<tr>
<td>~ 9 months</td>
<td>8/37 (21%)</td>
<td>0</td>
<td>13/37 (35%)</td>
<td>55</td>
<td>8/37 (21%)</td>
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</table>
Discussion

While the results look promising - the control school canteen managers could be superstars - our ability to deliver an intensive intervention remotely is challenging.

Key barriers:

• Access
• Time to change
Acknowledgements

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