

A Systematic Review of Intervention Strategies to Promote Childhood Vaccination: Focus On Education

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Institute for **Effective Education**
Empowering educators with evidence

Background

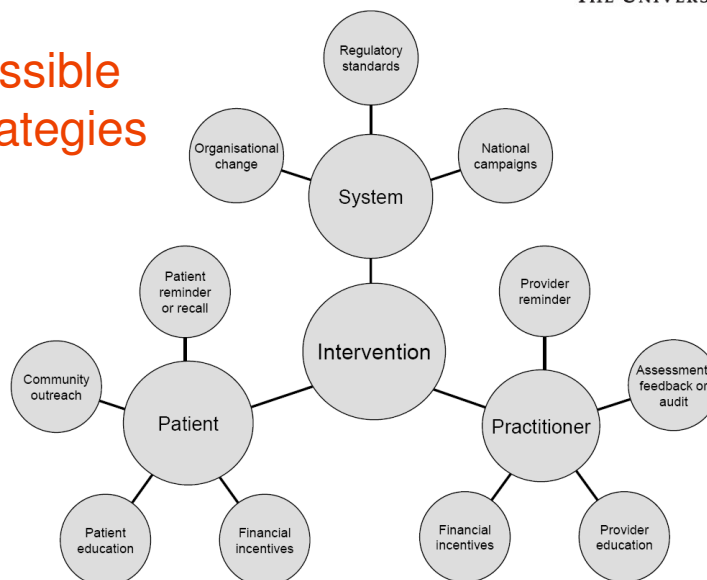
- Public health programmes use information and educational interventions to challenge perceptions of risk and to promote better health in the general population
- **Is increasing information an effective response to socially sub-optimal behaviours?**
- Studies focusing on educational strategies were identified within a systematic review of experimental and quasi-experimental studies to promote vaccination in children

Aims of the review

- Primary aim:
 - To assess the effectiveness of strategies aimed at influencing uptake of childhood immunizations
- Secondary aim:
 - To assess the evidence as to which strategy or group of strategies are the most effective of the feasible options



Possible strategies

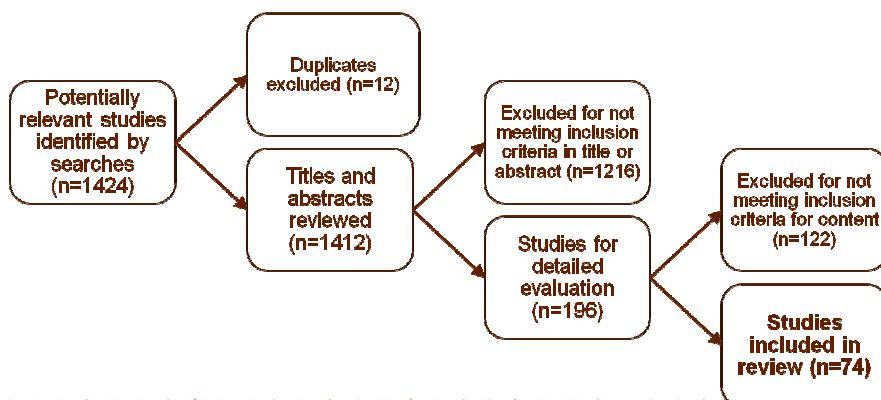


Methods

- Systematic review using Cochrane, CRD and Cochrane Effective Practice and Organisation of Care (EPOC) guidelines
- **Population:** Children, their parents or health professionals
- **Intervention:** any intervention designed to affect uptake
- **Outcome:** childhood immunization rates
- **Design:** RCT, CCT, CBA, ITS, or RDD



Flowchart of studies through the review



Included studies

Patient Interventions	Reminder/Recall	33
	Community Outreach	3
	Education	6
Practitioner Interventions	Financial	5
	Multiple patient-targeted comparisons	1
	Reminder/Feedback	3
System Changes	Education	3
	Financial	4
	Case Management	1
Complex Interventions (cross category)	Delivery	2
	National policy change	2
	Care Plan Changes	1
Total papers		74

Included studies: education

Patient Interventions	Reminder/Recall	33
	Community Outreach	3
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Results

- Patient education (6 studies)
- Practitioner education (3 studies)
- Complex interventions, which can include an educational component (10 studies)

- Diverse range of possible educational interventions, with different targets, and commonly combined with other interventions



Patient education

- Up to ½ hour on infant vaccinations during pregnancy or immediately after birth
 - All 5 studies: no impact, not statistically significant (Lakhani 1984; Oeffinger 1992; Stille 2001; Taylor 1997; Zúñiga de Nuncio 2003)
- School-age children handout on Hepatitis B
 - no impact, not statistically significant (Skinner 2000)



Practitioner education

- One-off practice-based educational visits
 - 1 hour presentation and group discussion (no impact, not statistically significant) (Taylor 2008)
 - Improved quality of care but not uptake
 - 1 hour presentation and monthly education materials for 6 months (positive impact, not statistically significant) (Franzini 2007)
 - Not effective or cost-effective alone, but may be useful as part of more complex intervention
 - 1-2 hour consultation with education and feedback (positive impact, statistically significant) (Hughart 1998)
 - Large unexplained increase in missed opportunities in single control centre helped distort results



Complex including education

- 10 studies, 7 included education component (positive impact, not statistically significant or significance not reported) (Daley 2004; Hambidge 2004; McPhee 2003; Paunio 1991; Slora 2007; Waterman 1996; Watson 1998)
- 3 ways:
 - As part of explicit Quality Improvement strategies
 - Including practitioner education into wider set of practice-level activities, sometimes with patient education
 - e.g. patient reminders, financial incentives, community outreach
 - Community-level media campaigns, with other activities



Summary

- Scarce evidence that patient education is effective for increasing childhood immunization rates
- Mixed evidence that practitioner education is effective
 - May improve quality of care and record keeping
- Education may help influence immunization rates when combined with more complex interventions
 - Single interventions insufficiently effective but cumulative effect from multiple strategies?



Discussion

Is increasing information an effective response to socially sub-optimal behaviours?

No! and Yes!

- In this review, educational interventions evaluated by these studies were not found to be effective
- Does **not** imply educational interventions ineffective, instead types of educational intervention, and evaluation quality, insufficient to demonstrate impact
 - Scope for further research into establishing characteristics of effective educational interventions for influencing immunization behaviours



Limitations

- Studies found too often ‘basics’ were missing: processes, support and culture for high quality of care, particularly for disadvantaged populations
- Provider education implies having information on best practice
 - e.g. Taylor (2008) found half practices pre-intervention stored vaccines inappropriately or used wrong size needle
- Despite weakness of direct evidence, education and information are necessarily valuable for defining high quality care, and ensuring vaccination programmes’ success



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Summary of studies in review

Patient Interventions	Reminder/Recall	<i>Effective</i>
	Community Outreach	<i>Insufficient evidence</i>
	Education	<i>Insufficient evidence</i>
Practitioner Interventions	Financial	<i>Weak evidence</i>
	Multiple comparisons	<i>Cumulative impact?</i>
	Reminder/Feedback	<i>Weak evidence</i>
System Changes	Education	<i>Insufficient evidence</i>
	Financial	<i>Weak evidence</i>
	Case Management	<i>Insufficient evidence</i>
Complex Interventions (cross category)	Delivery	<i>Insufficient evidence</i>
	National policy change	<i>Insufficient evidence</i>
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Designs of educational studies

RCT: 7 studies (2 patient, 2 practitioner, 3 complex)

CCT: 4 studies (patient)

CBA: 4 studies (1 practitioner, 3 complex)

ITS: 1 study (complex)

RDD: no studies

Quality appraisal

- Based on CRD recommendations
- Checklist of 'adequate', 'inadequate' or 'unclear':
 - **RCTs/CCTs**: allocation concealment?; randomization?; follow-up of patients?; of professionals?; blinding?; baseline measures?; protection from contamination?
 - **CBAs**: appropriate control?; follow-up of patients?; of professionals?; blinding?; baseline measures?; protection from contamination?
 - **ITS/RDDs**: independent intervention/secular changes?; appropriate analysis? cut-off justification?; specified intervention effect?; intervention influence data collection?; blinding?; data completeness?

