

EVIDENCE-BASED INTERVENTIONS TO ENHANCE VACCINATION RATES

Community-based interventions

Multicomponent interventions with at least one education/information component

LEVEL OF EVIDENCE	
	Strong evidence of effectiveness in increasing vaccination rates
	Moderate evidence of effectiveness in increasing vaccination rates
	Insufficient evidence of effectiveness in increasing vaccination rates
	Strong evidence of ineffectiveness in increasing vaccination rates

It is impossible to globally assess the effectiveness of community-based interventions to increase awareness and knowledge among the public to increase vaccine coverage. This is due to the heterogeneity of interventions included in that category, as well as the contradictory results that were obtained (Stone et al. 2002; Harvey et al. 2015). A separate fact sheet has therefore been created for each of the following four types of interventions: distribution of information alone, face-to-face interactions on vaccination, mass media campaigns, and multicomponent interventions with at least one education/information component.

This fact sheet is solely devoted to multicomponent interventions with at least one education/information component. This type of intervention is comprised of at least two strategies aiming to increase vaccination rates, of which at least one is an education or information strategy (distribution of documentation, interactions with a professional or with peers, mass media campaigns). The other intervention(s) may aim to increase community demand for vaccination, enhance access to vaccination services, or target health professionals. Combined interventions that have been most frequently evaluated are composed of one information/education strategy and either reminder and recall systems for clients or providers or home visits (Briss et al. 2000).

Expected impact

Increase in vaccination coverage.

Other possible impacts

There is not enough information on this question in the literature.

Review of evidence

Overview

There is strong scientific evidence for the effectiveness of multicomponent interventions with at least one education/information component to increase vaccination rates. This evidence comes from several systematic literature reviews (Briss et al. 2000; Harvey et al. 2015; Community Preventive Services Task Force 2014).

A systematic review comprised of 20 studies highlighted an increase in vaccination rates in 15 studies out of 20 (Briss et al. 2000). Among these studies, 3 out of 4 were composed of one information/education strategy and either reminder and recall systems for clients (n=9) or providers (n=6). An average increase of 12 percentage points in vaccination rates was observed (ranging from 4% to 29% percentage point change according to studies) and was observed both in a clinical setting (+10% percentage point change on average) and in the community (+12% percentage point change on average). A more recent publication came up with the same result from 5 studies that evaluated the effectiveness of an information/education intervention combined with reminder/recall system for clients (+16% increase in vaccination rates on average). It is nonetheless difficult to know to what degree the education and information component of the intervention contribute to the overall effectiveness of the combined interventions, due to the fact that interventions are evaluated as a whole (Dubé et al. 2015; Briss et al. 2000).

Effectiveness according to population subsets and vaccines

There is not enough information on this question in the literature.

Effectiveness according to means of intervention

There is not enough information on this question in the literature.

Cost-effectiveness questions

Two studies have been identified which allow a comparison of the costs and benefits of multicomponent interventions with at least one education/information component (Briss et al. 2000). The first estimated the cost of a combined intervention, which included a mass media campaign and a vaccination program for students, at \$23 per additional vaccination (Hand et al. 1980). The second estimated the cost of a combined intervention including several awareness and health-promotion interventions, an intervention to enhance access to vaccination services (clinics with extended hours), and an audit/feedback intervention, at \$8 per additional vaccination (Westman et al. 1997).

Promising interventions

There is not enough information on this question in the literature.

Impact on inequalities

According to a recent literature review, multicomponent interventions tailored to the local context are the most efficient means to reduce vaccination inequalities between children and adolescents of different ethnic groups (Crocker-Buque et al. 2017). Caution is necessary regarding the generalization of this information because the majority of the studies were done in the United States (31/41).

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References

- Briss, P.A., L. E. Rodewald, A. R. Hinman, A. M. Shefer, R. A. Strikas, R.R. Bernier, V. G. Carande-Kulis, H. R. Yusuf, S. M. Ndiaye, and S. M. Williams. 2000. "Reviews of Evidence Regarding Interventions to Improve Vaccination Coverage in Children, Adolescents, and Adults. The Task Force on Community Preventive Services". *American Journal of Preventive Medicine* 18 (1 Suppl): 97-140.
- Community Preventive Services Task Force. 2014. "Vaccination Programs: Community-Based Interventions Implemented in Combination". <https://www.thecommunityguide.org/findings/vaccination-programs-community-based-interventions-implemented-combination>.
- Crocker-Buque, Tim, Michael Edelstein, and Sandra Mounier-Jack. 2017. "Interventions to Reduce Inequalities in Vaccine Uptake in Children and Adolescents Aged <19 Years: A Systematic Review". *Journal of Epidemiology and Community Health* 71 (1): 87-97. doi:10.1136/jech-2016-207572.
- Dubé, Eve, Dominique Gagnon, Noni E. MacDonald, and SAGE Working Group on Vaccine Hesitancy. 2015. "Strategies Intended to Address Vaccine Hesitancy: Review of Published Reviews". *Vaccine* 33 (34): 4191-4203. doi:10.1016/j.vaccine.2015.04.041.
- Hand, J. S., D. Anderson, D. Feffer, and C. Day. 1980. "A Successful School Immunization Program -- or Not?" *The Journal of School Health* 50 (1): 50.
- Harvey, Hannah, Nadja Reissland, and James Mason. 2015. "Parental Reminder, Recall and Educational Interventions to Improve Early Childhood Immunisation Uptake: A Systematic Review and Meta-Analysis". *Vaccine* 33 (25): 2862-80. doi:10.1016/j.vaccine.2015.04.085.
- Stone, Erin G., Sally C. Morton, Marlies E. Hulscher, Margaret A. Maglione, Elizabeth A. Roth, Jeremy M. Grimshaw, Brian S. Mittman, Lisa V. Rubenstein, Laurence Z. Rubenstein, and Paul G. Shekelle. 2002. "Interventions That Increase Use of Adult Immunization and Cancer Screening Services: A Meta-Analysis". *Annals of Internal Medicine* 136 (9): 641-51.
- Westman, S., R. J. Halbert, L. G. Walton, and C. E. Henneman. 1997. "A 'clinic without Walls': The Los Angeles Immunization Demonstration Project". *American Journal of Public Health* 87 (2): 293-94.

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This study's objectives were to help actors and decision-makers identify their territory's strengths and weaknesses with the help of synthetic indicators on the state of health and its determinants (available in SIRSéPACA) and to go from observation to action, through guiding them in the choice of actions to put in place. This study built on the American experience, *County Health Rankings and Roadmaps* (www.countyhealthrankings.org).

On the choice of actions to implement, bibliographic research was undertaken using different databases (Cochrane Library, Health Evidence, The Community Guide, Medline...). This permitted the identification of three main types of interventions (interventions to increase community demand for vaccination, to enhance access to vaccine services or provider-based interventions). The effectiveness of these interventions was evaluated in accordance with the number, type and methodological quality of studies available, as well as the breadth and coherence of the results (Briss P et al. *Developing an evidence-based Guide to Community Preventive Services-methods*. Am J Prev Med 2000;18(1S):35-43).

Ten themed fact sheets oriented to the principal types of interventions in the field of vaccination were written. All documents are available on the website of the System of Regional Health Information PACA (www.sirsepac.org).

TYPE OF INTERVENTIONS	FACT SHEETS
Interventions to increase community demand for vaccination	Client-based written education interventions when used alone Person-to-person interactions Mass media campaigns Multicomponent interventions with at least one education / information component Client incentives and rewards Reminder and recall systems for clients
Interventions to enhance access to vaccine services	Home visits
Provider-based interventions	Reminder and recall systems for providers Audit and feedback Standing orders

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Editorial Committee/Supervision
Aurélie Bocquier, Hélène Dumesnil, & Pierre Verger (ORS Paca)

English translation
John-Samuel MacKay & Dominique Gagnon

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