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Motivational interviewing session at birth increases vaccination acceptance and uptake

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Background- Meeting pamphlet

Significant gaps in coverage in both infant and adult immunization programs across the world mean that hundreds of millions of people are not being protected against serious infectious diseases. There are myriad reasons for low vaccine uptake including challenges to access, affordability, awareness, acceptance and simple activation of people to act.

This meeting will focus primarily on vaccine hesitancy, understanding the drivers and barriers to awareness, acceptance and activation, with a view to informing the development of effective strategies to close immunization gaps.

Information and education alone do not change behavior. So what might work?

Plan

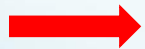
- Promovac concept
- Motivational Interviewing of Miller and Rollnick and trans-theoretical model of Prochaska
- PROMOVAC studies
- Discussion
- Future prospects

The PROMOVAC concept



Need for an early strategy of promoting vaccination to avoid delays in first vaccines

- First vaccines at 2 months of age
- Delays in first vaccines were associated with delayed or incomplete vaccination schedule in childhood
- Nurseries should be a place for a early strategy of promoting vaccination



Failure of traditional educational or information's strategies

Motivational Interviewing of Miller and Rollnick and trans-theoretical model of Prochaska should be adapted to vaccination promotion

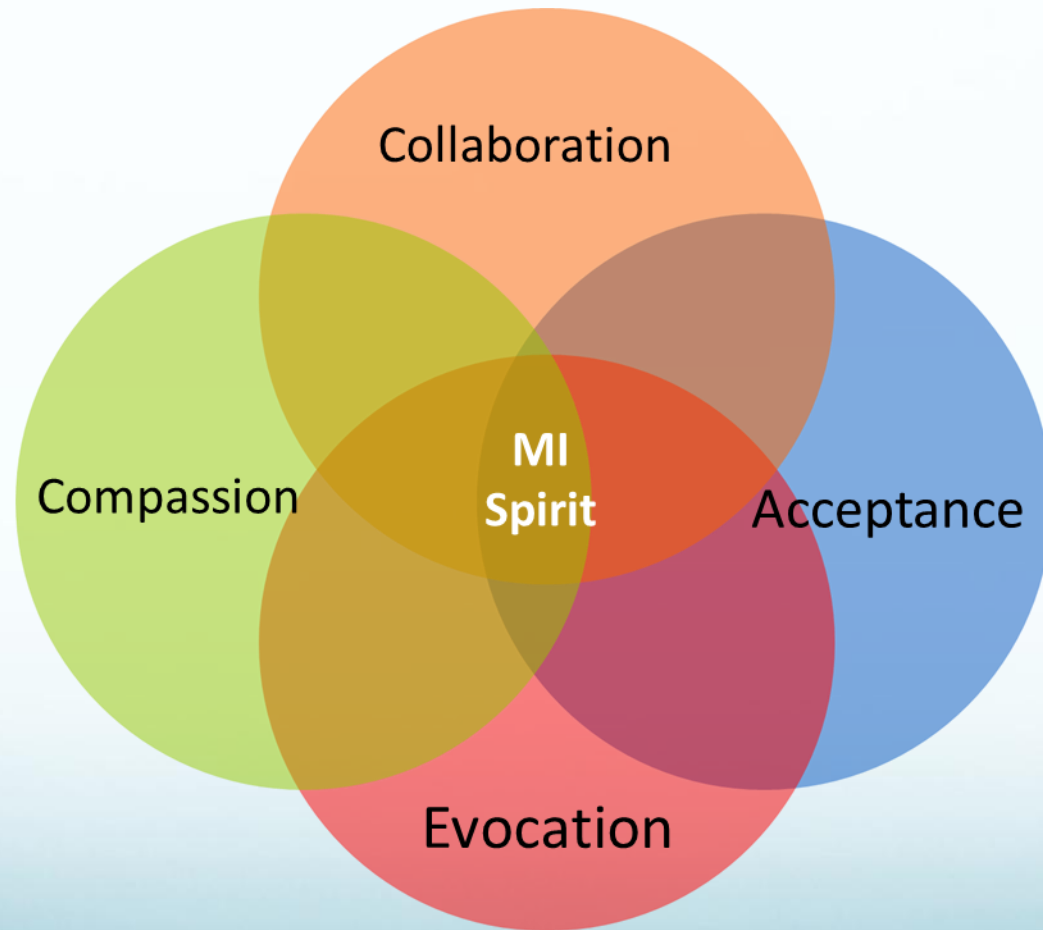
Motivational interviewing is ...

- a **collaborative, goal-oriented** style of **communication**
- with particular attention to the **language of change**.
- It is designed to **strengthen personal motivation** for and commitment to a specific goal
- by eliciting and exploring the **person's own reasons for change** (solving their own ambivalence)
- within an atmosphere of **acceptance and compassion**.
- has been described as a promising tool for the health promotion strategy

*Motivational Interviewing- Helping People Change. William R Miller, Stephen Rollnick, 3rd edition
Appiah-Brempong E. Am J Health Promot 2014;29:e32-4*

The spirit of motivational Interviewing

The MI spirit emerges at the intersection of these four components



The method of Motivational Interviewing

- Four key processes
 - **Engaging** is the process of establishing a helpful connection and working relationship.
 - **Focusing** is the process by which you develop and maintain a specific direction in the conversation about change.
 - The process of **evoking** involves eliciting the client's own motivations for change and lies at the heart of MI.
 - The **planning** process encompasses both developing commitment to change and formulating a concrete plan of action.
- Core skills of MI (key communication skills)
 - asking open questions,
 - affirming,
 - reflecting,
 - summarizing,
 - providing information and advice with permission.

Prochaska's transtheoretical model

PROCHASKA STAGES	PRE-COMTEMPLATION	CONTEMPLATION	PREPARATION	ACTION
VACCINATION INTENTION	NOT READY	GETTING READY	READY	
	Patient should not get vaccines	Ambivalence Patient don't know if he wants to get vaccines. Lots of fears	Still ambivalence Patient wants to get vaccines but still some fears	Patient wants to get vaccines Patient know how to proceed
Possibilities of intervention	What disadvantages ? What fears ? Could he see some advantages to vaccination ?	What fears ? What advantages does he see to vaccination ?	Does he have any fears ? Could there be barriers to vaccination ? What are its accurate goals ?	Does he have any fears ? What vaccination schedule ?



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PROMOVAC studies

“PROMOVAC”

Aims of the study

Assess the effectiveness of an information session targeting immunization based on motivational interviewing techniques in nurseries on vaccination intention and vaccination coverage on infants

Specific goals:

1. Evaluation of the feasibility and acceptability of the program
2. Parents' knowledge, attitudes, beliefs and vaccination intention analysis
3. Determinants of parents' vaccination intention analysis
4. Impact of the information session on parents' vaccination intention
5. Impact of the information session on infants' vaccination coverage
6. To assess parents' satisfaction to receive the intervention

Methods

- Study design and population
 - Cohort study
 - Sherbrooke University hospital nursery.
- Standardized information session
 - Five-point standardized information plan
 - Based on the Quebec Immunization protocol
 - Motivational Interviewing of Miller and Rollnick and trans-theoretical model of Prochaska
- Parents' knowledge, attitudes, beliefs and vaccination intention
 - Questionnaire based on the Health Belief Model was administered to all participants before and after the session
- Vaccination coverage
 - Immunization data from by the Eastern Townships Public Health register

Five-point standardized information plan on vaccination

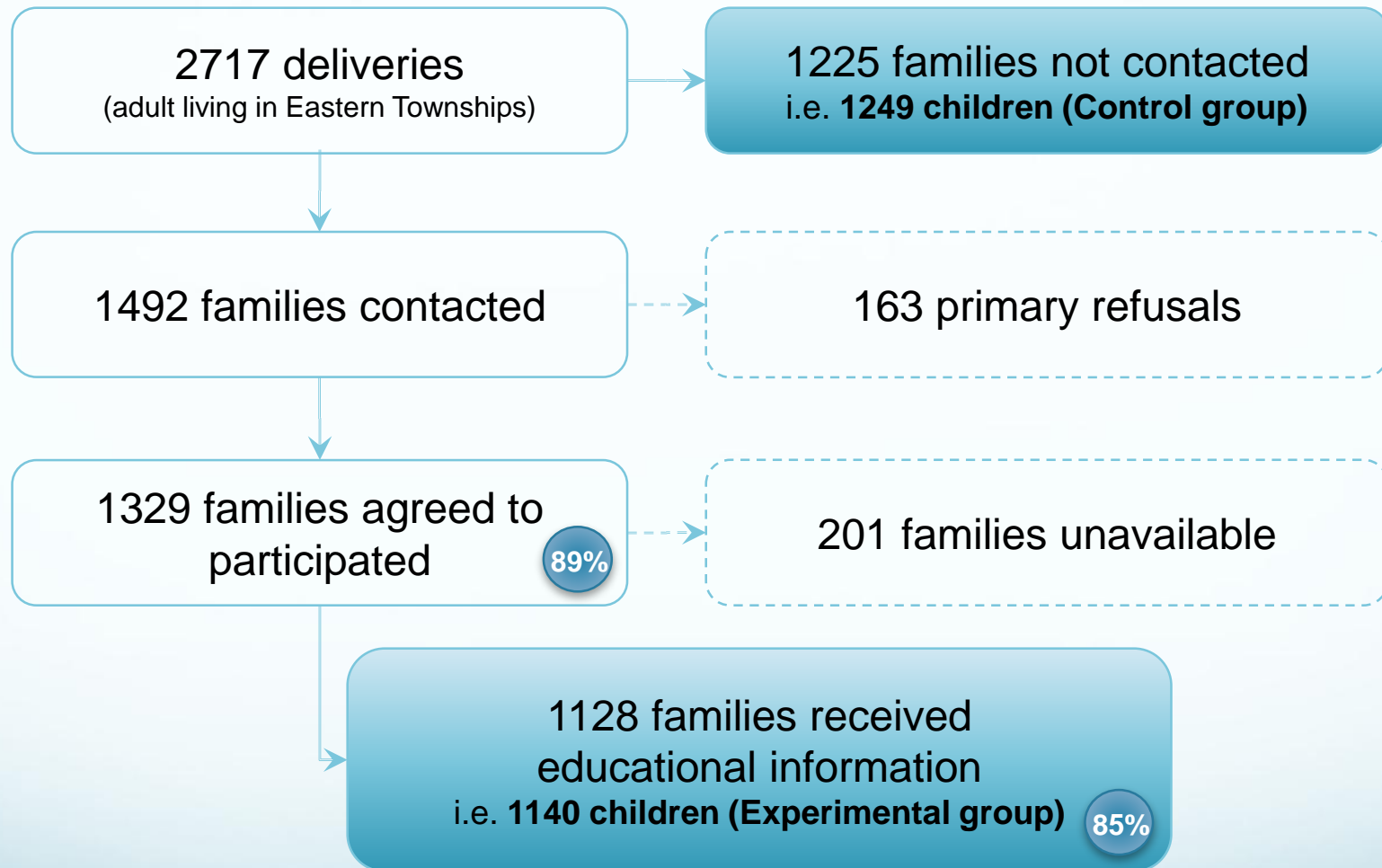
 Elaboration of a Five-point standardized information plan on vaccination easily understandable for parents

- STEP 1 Presentation of the vaccine preventable Diseases
- STEP 2 Vaccines and vaccines efficacy
- STEP 3 Importance of the immunization schedule
- STEP 4 Fears and reluctance about vaccination
- STEP 5 Logistic organization of the vaccination in the Eastern townships

Educational information session

PROCHASKA STAGES			
PRE-COMTEMPLATION	CONTEMPLATION	PREPARATION	ACTION
NOT READY	GETTING READY	READY	
		CONGRATULATE	CONGRATULATE
Fears ?	Fears ?	Could there be barriers to vaccination ?	Could there be barriers to vaccination ?
Step 4 +++	Step 4 +++	Step 4 if needed	Step 4 if needed
Could you see some advantages to vaccination ?	Could you see some advantages to vaccination ?		
INFORMATION	INFORMATION	ORGANISATION	ORGANISATION
Step 1 et 2 ++	Step 1 et 2 ++	Step 5 +++	Step 5 +++
Step 3 +	Step 3 +	INFORMATION	INFORMATION
If you take decisions towards vaccination	If you take decisions towards vaccination	Step 1 ++ and 3 +++	Step 1 ++ and 3 +++
Step 5 ±	Step 5 ±	Step 2 +	Step 2 +

Flow chart - Feasibility and acceptability

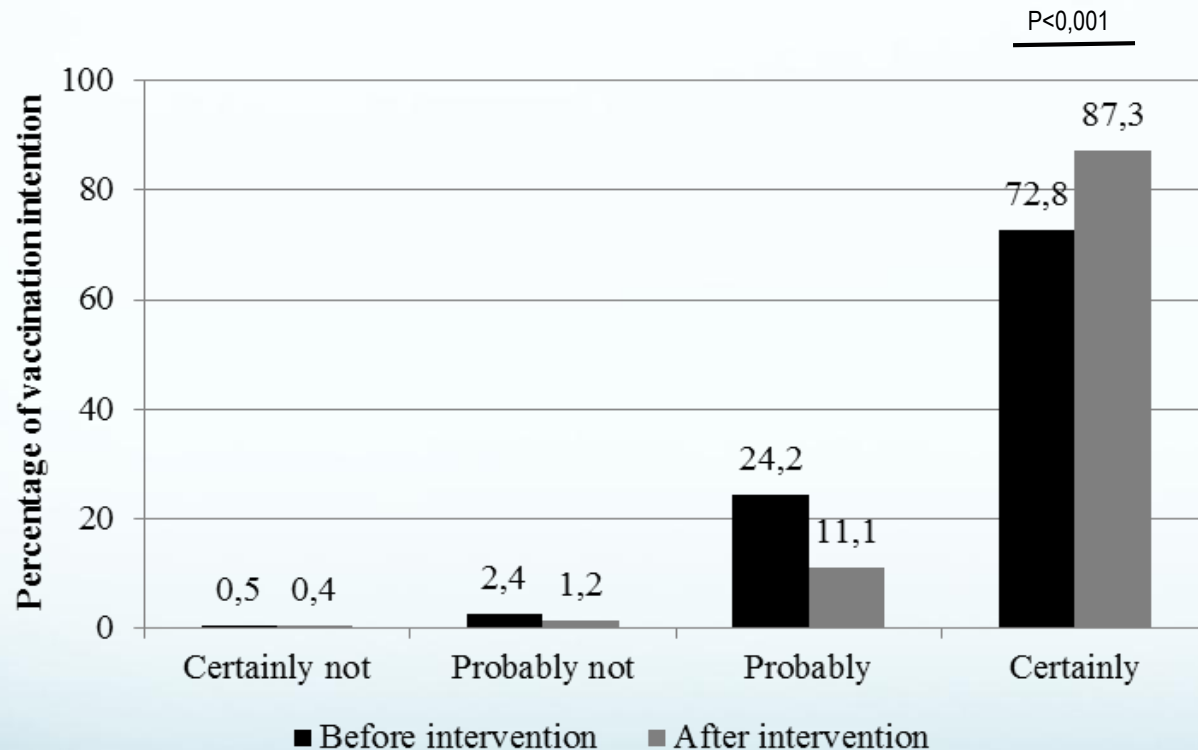


Feasibility 90%
Acceptability 85%

97% parents recommended to offer the intervention to others parents

Impact on parents' vaccination intention

Pre and post intervention parents' vaccination intention

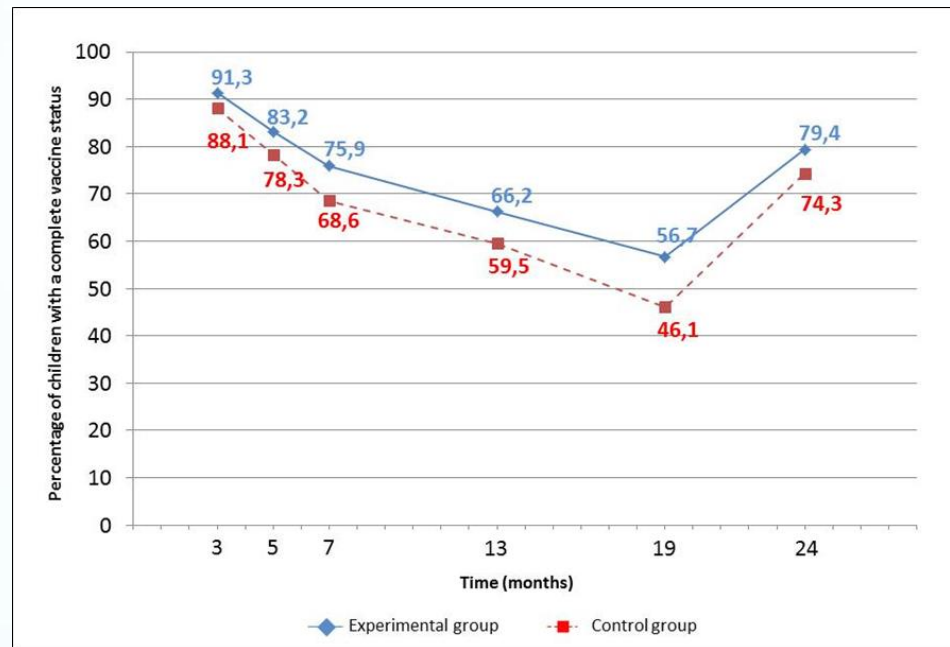


Governmental report. **A Gagneur et al.** Should an innovative promotion of immunization in maternity improve the immunization coverage of infants. The Promovac study. Bibliothèque et archives nationales du Canada 2013. ISBN :978-2-9813830-0-6, 112p

Impact on infants' vaccination coverage

Vaccination coverage (VC)	Expérimental Group	Control Group	Increase of VC (%)	p	RR (95% CI)
	n = 1140 n (%)	n = 1249 n (%)			
3 m	1041 (91,3)	1101 (88,1)	+3,2	0,01	1,04 (1,01-1,06)
5 m	948 (83,2)	978 (78,3)	+4,9	< 0,01	1.06 (1,02-1,10)
7 m	865 (75,9)	857 (68,6)	+7,3	< 0,001	1,11 (1,05-1,16)

Impact on 0-2 years infants' vaccination coverage



RR (95% CI)	<i>p</i>
1.09 (1.05-1.13)	<0.001

Univariate logistic regressions with repeated measures according to the Generalized estimating equations (GEE) procedure with Poisson distribution :
To estimate the chance for a child to have a complete vaccine status during early childhood

Impact on 0-2 years infants' vaccination coverage

	Unadjusted RR (95% CI)	<i>p</i>	Adjusted RR (95% CI)	<i>p</i>
Intervention	1.09 (1.05-1.13)	<0.001	1.05 (1.02-1.07)	<0.001
Complete vaccine status at 3 months of age	2.72 (2.20-3.37)	<0.001	6.81 (5.58-8.30)	<0.001
Time	0.99 (0.99-0.99)	<0.001	0.99 (0.99-0.99)	<0.001
Mother's age	1.00 (1.00-1.00)		1.00 (1.00-1.01)	
More than one child	0.90 (0.88-0.93)	<0.001	0.91 (0.88-0.93)	<0.001
Caesarean delivery	0.97 (0.93-1.01)	<0.001	0.99 (0.96-1.02)	
Neonatology hospitalization	0.90 (0.83-0.95)	<0.001	0.96 (0.92-1.01)	

Multivariate GEE models with repeated measures with Poisson distribution :

To estimate the chance for a child to have a complete immunization status to 24 months depending on whether or not parents have received the intervention adjusting for immunization status at three months, time, age of the mother, the number of children of the mother, caesarean delivery and hospitalization in neonatology



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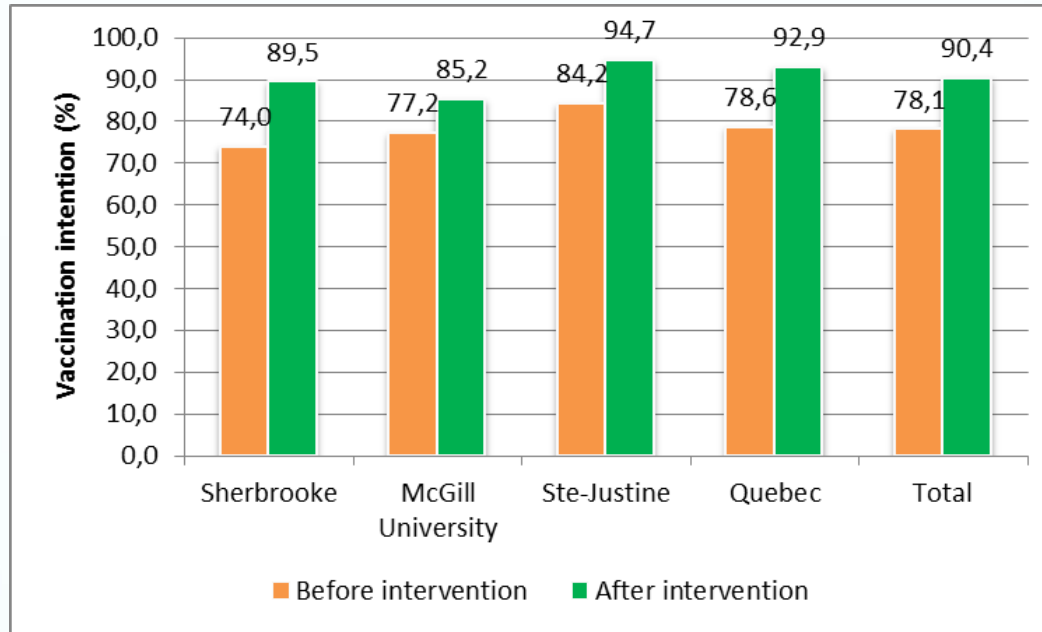
PROMOVAC studies

“PROMOVAQ”

PROMOVAC to PROMOVAQ

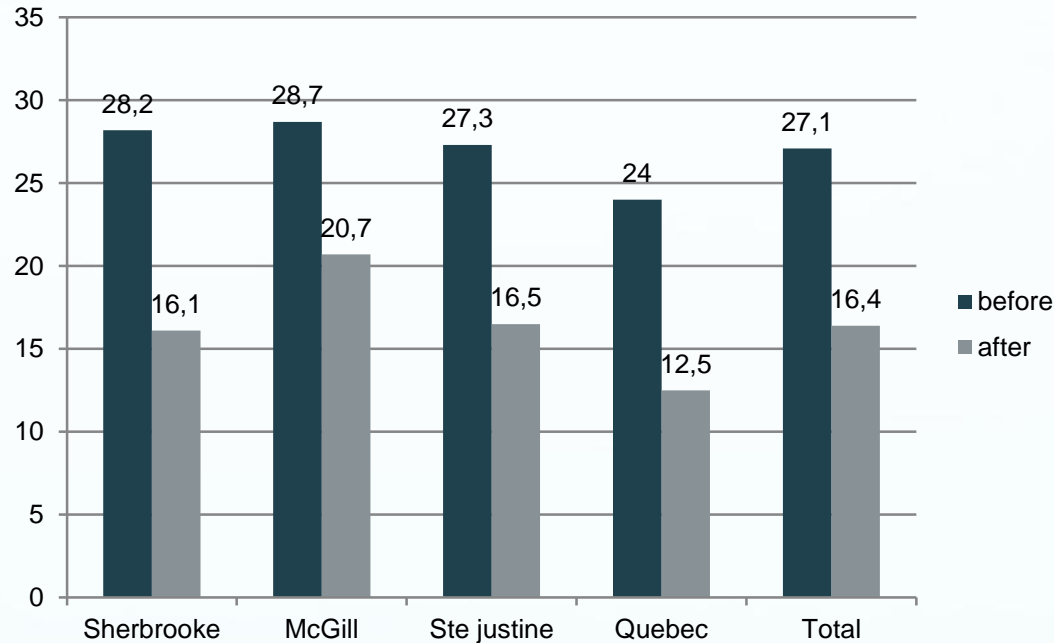
- Provincial RCT
- Regional disparities
- 4 maternity wards (20% of annual births)
 - Montréal (Ste Justine, Royal Victoria),
 - Québec,
 - Sherbrooke
- FRQS and MSSS fundings, INSPQ partnership
- Opel's questionnaire on Vaccine hesitancy
- 2700 families enrolled

Impact on parents' vaccination intention



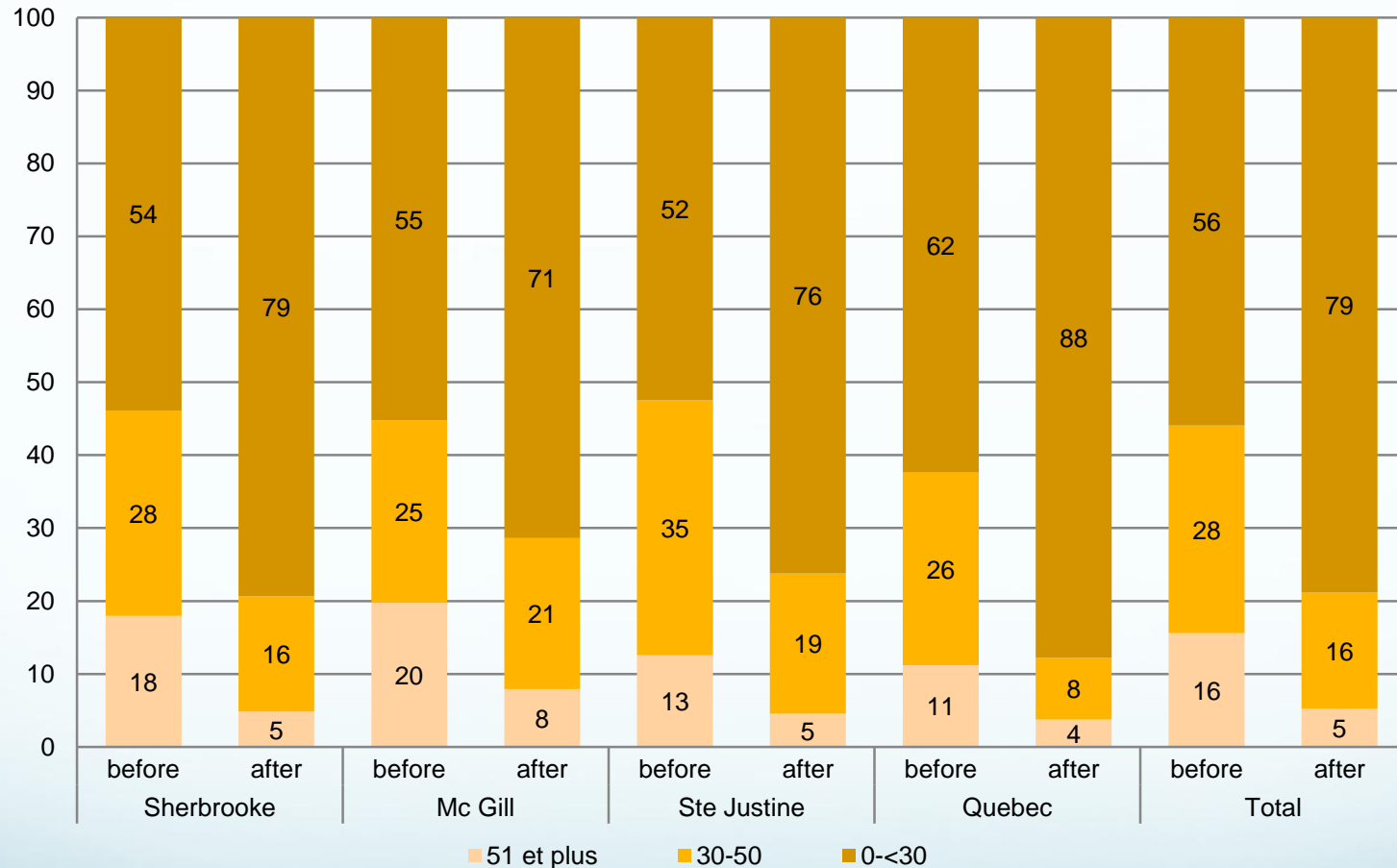
A significant increase in vaccination intention was observed in each center after the intervention, with a global increase of 12% ($p < 0.0001$).

Impact on parental vaccination hesitancy score



A significant decrease in Opel's vaccine hesitancy score was also observed in each maternity ward after the intervention, with a global decrease of 40% ($p < 0.0001$).

Impact on parental vaccination hesitancy score



< 30 Low level of VH
 30-50 Intermediate level
 > 50 High level

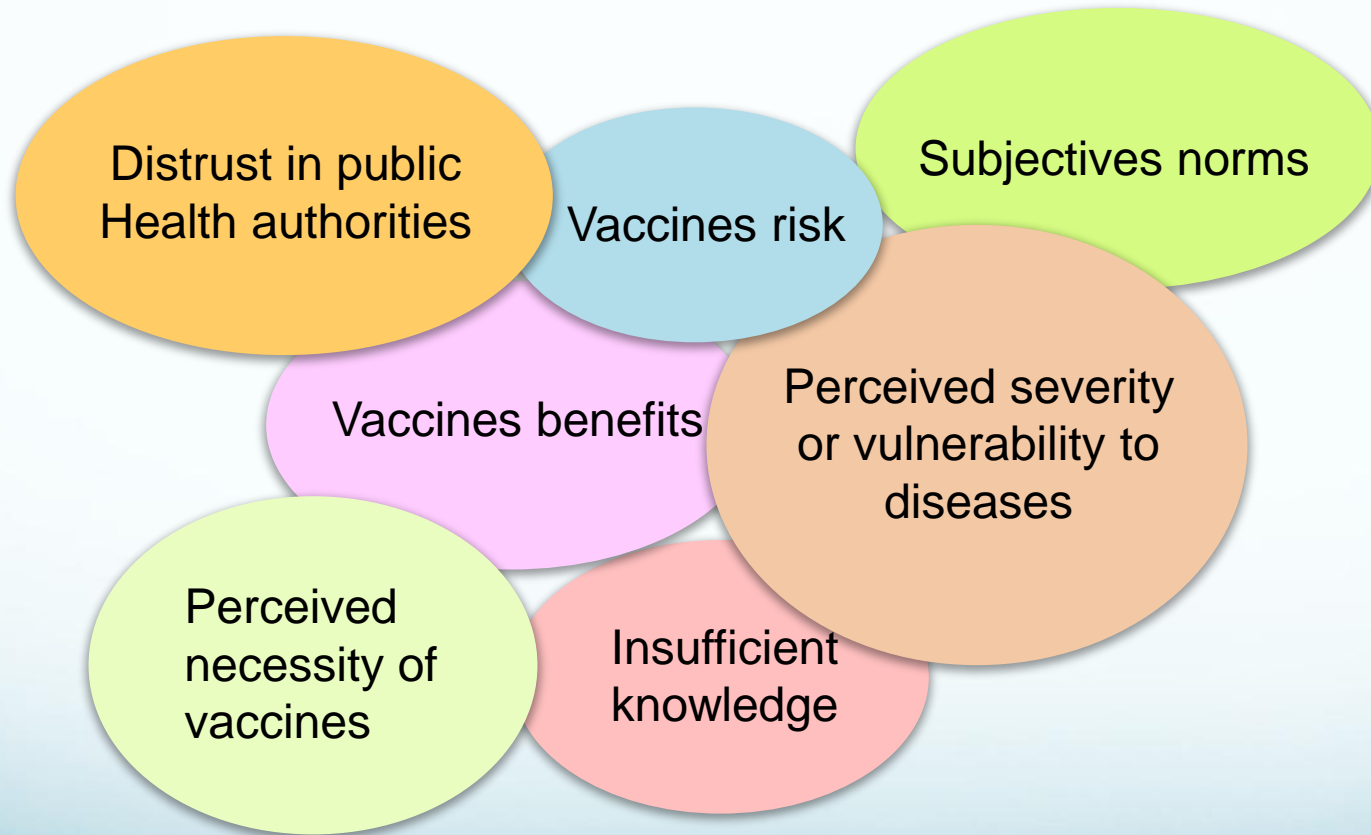
Impact on vaccination coverage (2/4 nurseries)

Vaccination coverage (VC)	intervention	Control	Increase of VC (%)	p
	Group	Group		
	n = 629	n = 627		
	n (%)	n (%)		
3 m	558 (88.7)	525 (83.7)	+ 5.0	0,01
5 m	526 (83.6)	510 (81.3)	+ 2.3	0.29
7 m	503 (80.0)	463 (73.8)	+ 6.2	0,01

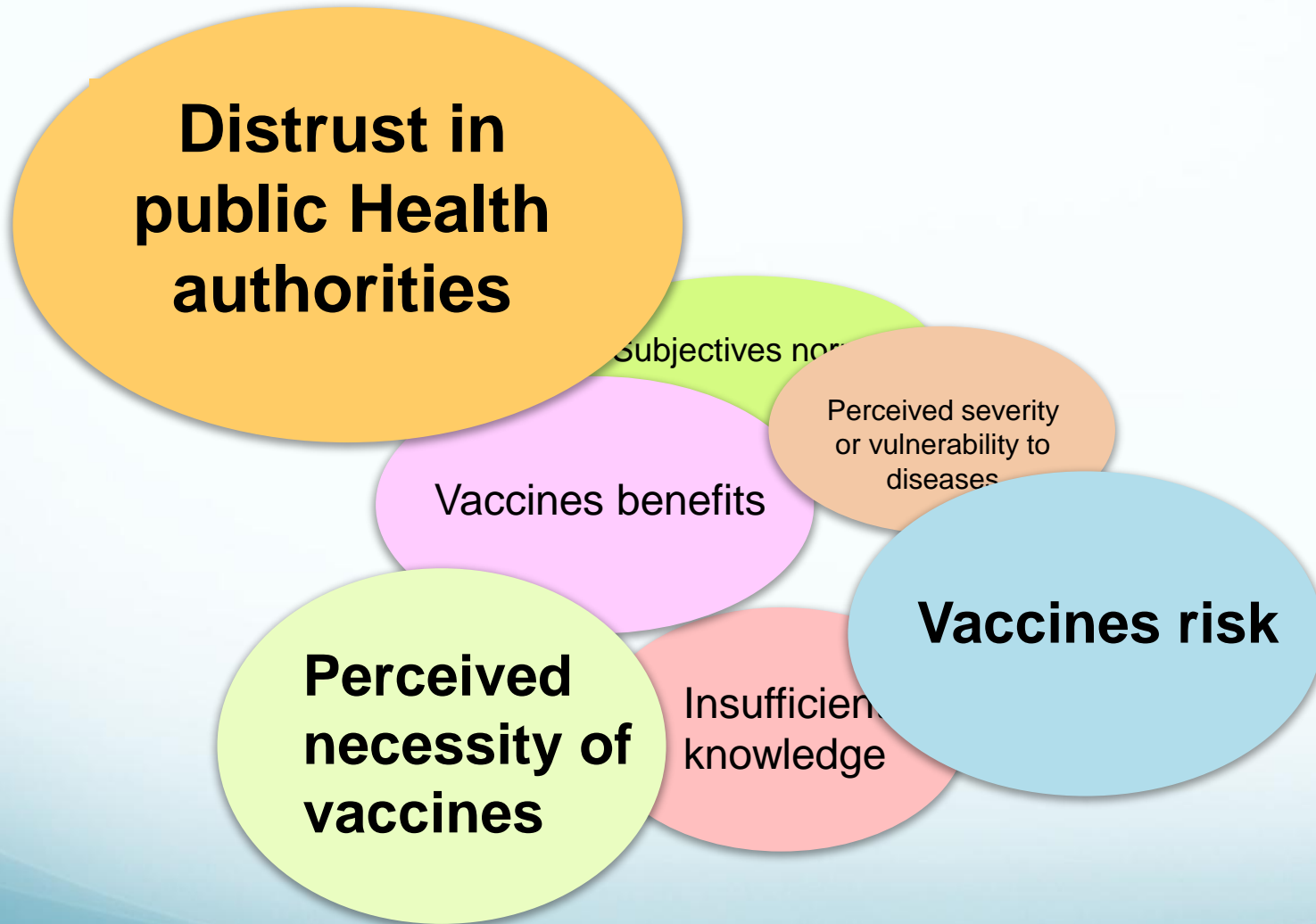
Discussion-reflexions : What works ?

- No conflict of interest with the counsellor
 - 2 months before the first vaccine (time to take decision)
 - Infant's vaccination induce stress to parents ?
 - Novelty
 - Unpredictability
 - Threat to the ego
 - Sense of control
- Tailored informations
- Motivational interviewing
- Intervention tailored to the needs
 - Informations
 - Educational methods

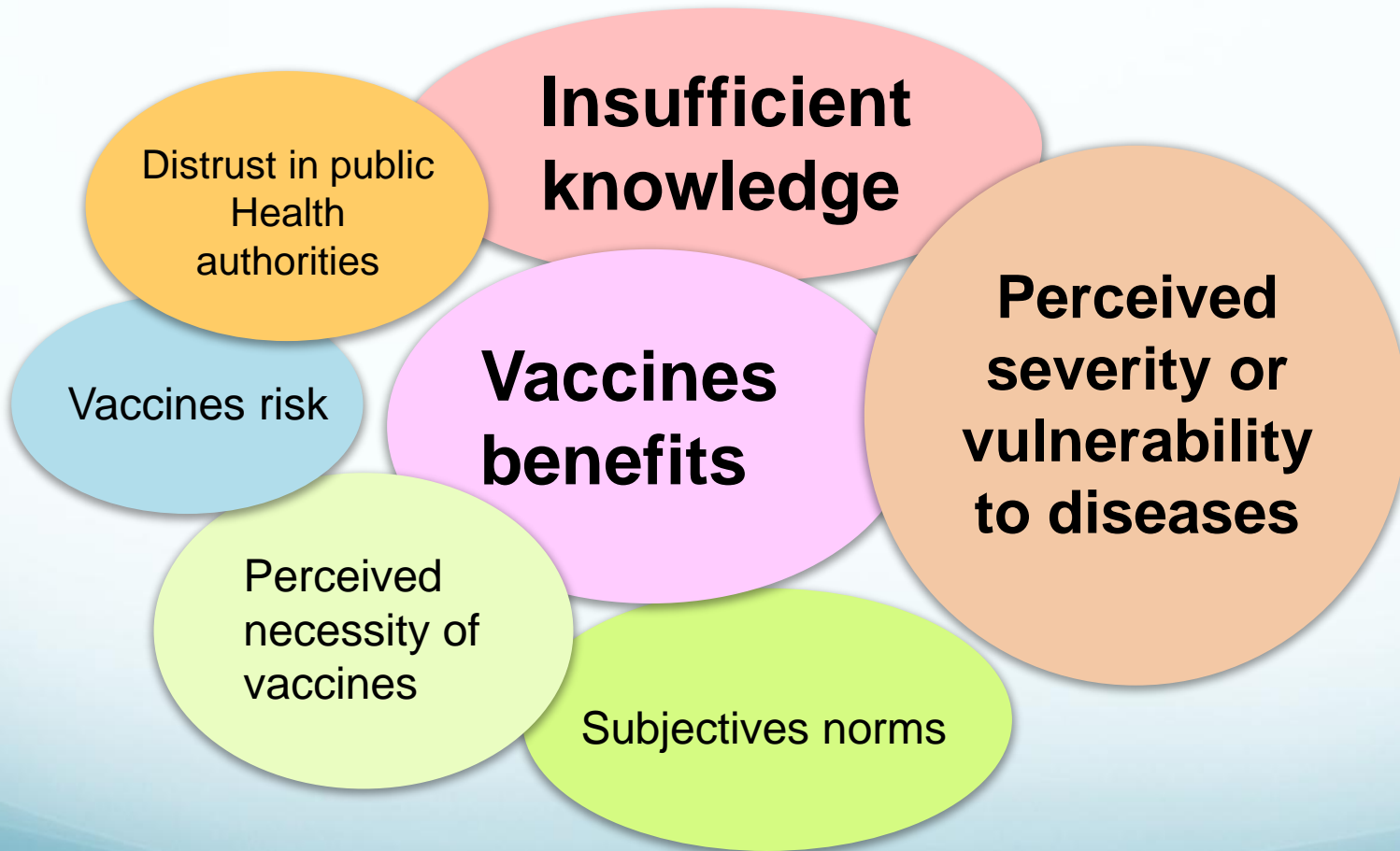
Determinants of vaccination behavior



Determinants of vaccination behavior for me



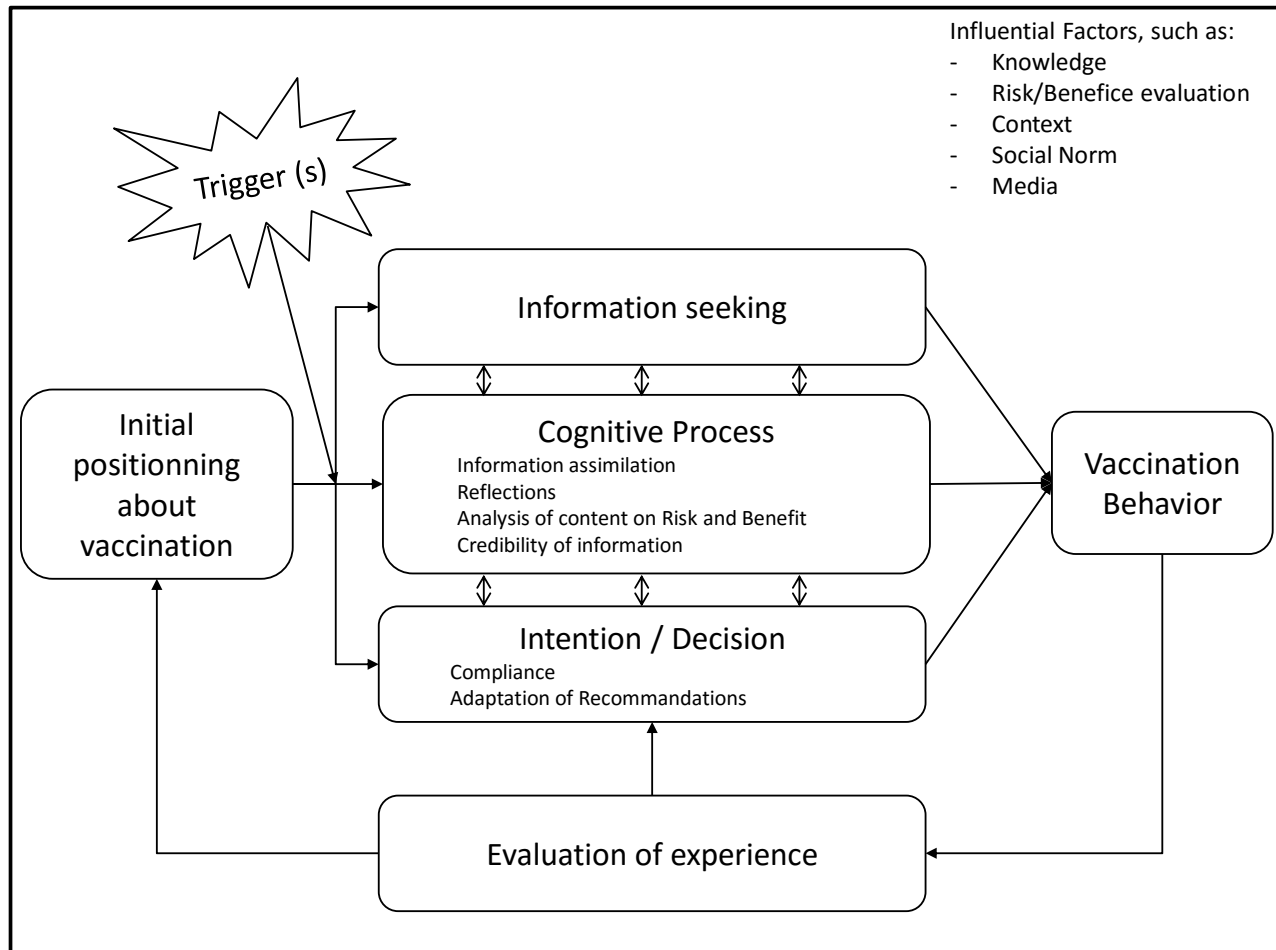
Determinants of vaccination behavior for him ...



Decisional process

- Most parents reported not actively processing information about the benefits and drawbacks before deciding whether to have their child vaccinated
- Only 19% of parents reported having thought about the issue thoroughly before making the decision
- This might indicate that the overall positive attitudes and high vaccination intentions are not very stable and therefore susceptible to counter-arguments

Decisional process



Decisional process

Vaccination ?



CONTROVERSIES

Vaccines risk

Subjectives norms

Perceived severity or vulnerability to

AMBIVALENCE

Distrust in public Health authorities

Perceived necessity of vaccines

Vaccines benefits

YES

NO

?

PROMOVAC**C**... to PROMOVA**Q**... to PROMOVAC**C**

- PROMOVAC**C** Promotion Vaccination in Canada
 - RCT in 4 provinces (BC, NS, ON, QC)
 - CIRN and CRCHUS fundings, INSPQ partnership
 - Validation in different cultural and logistical contexts

- PROMOVAC**CI**
 - International RCT (Canada, France, Austria, Italy and ...?)
 - European CDC collaboration
 - Canadian Institute Health research grant submission
 - Universal validation of the concept

Future prospect in Quebec

- First phase of implementation
 - Health ministry decision
 - Maternity wards > 2500 annual births (55% of births)
 - 13 hospitals in 7 regions
 - Recruitment of 20 vaccination counsellors
 - Funded by Health ministry (1 million \$) and Canadian Public Health agency (750 000\$)
 - Evaluation study of implementation and results in VC
- According to first phase implementation results, extension to a provincial public health policies.
- Training in MI adapted to vaccination to health care providers
 - 2 days session
 - Implemented in Eastern Townships in 2015



Acknowledgements

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PROMOVAQ investigators : : E Dubé, A Farrands, T Lemaitre, N Boulianne, C Sauvageau, FD Boucher, B Tapiero, C Quach, M Ouakki, V Gosselin, D Gagnon, P De Wals, G Petit, M-C Jacques

Parents involved in the study

The art of persuasion is as much about agreeing as it is about convincing....

Blaise Pascal (1623-1662)