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RECHERCHE



“PromoVac” update

From PromoVac to EMMIE program

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Plan

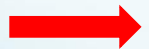
- PromoVac concept
- Motivational Interviewing of Miller and Rollnick
- PromoVac studies
- Future prospects
- EMMIE program

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

Spirit

To achieve the goal of MI which is to evoke Change Talk

Partnership:

Achieving equality, strengthening collaboration, investing together

Acceptance:

A positive, valiant, empathic attitude that reinforces autonomy

Evocation:

Have the person verbalize, among other things, the change

Compassion/Altruism:

Acting in a caring way, having the best interests of the other at heart

Skills : OARS + ESE



Open Questions

At least 70% of the questions



Affirmation

Giving value
Reinforcing self-efficacy



Reflective Listening

2 times more reflections than questions
As many complex and simple reflections



Summaries

Approximately every 5 minutes



Elicit - Share - Elicit

-What she knows
-Ask permission and inform
-What she will do with this information

MI-Adherent Behaviors : Affirm, Seek Collaboration, Emphasize Autonomy

MI Non-Adherent Behaviors : Persuade and Confront

Processes

Planning:
Engagement Talk
How to change

Evoking:
Change Talk
Reason and abilities to change

Confidence

Importance

Focusing
Define and focus the discussion on the target of change

Engaging in the relationship:
Strengthen the link, show empathy and interest

4

How will she get there?

3

What abilities, strengths does she have to get there?

3

How relevant would it be to go toward change?

2

What should we address as a target for change?

1

What is the actual reality of the person?

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 |

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 +



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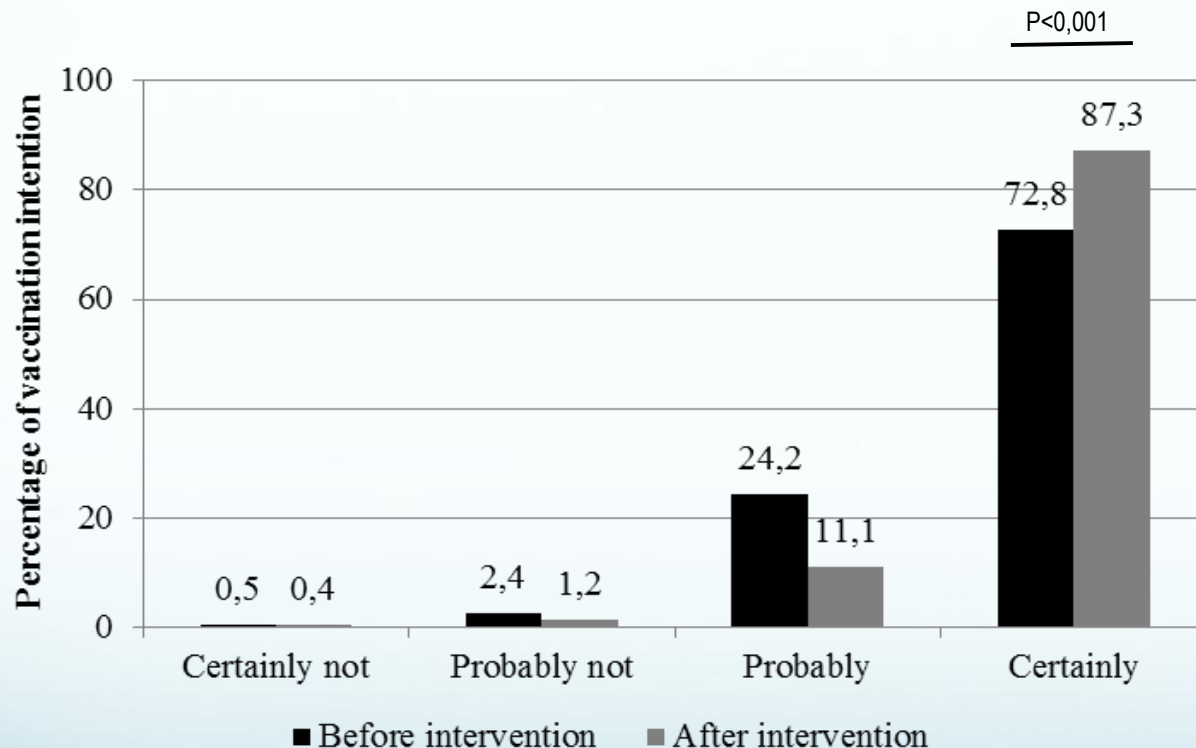
PromoVac studies

“PromoVac”

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

Impact on parents' vaccination intention

Pre and post intervention parents' vaccination intention

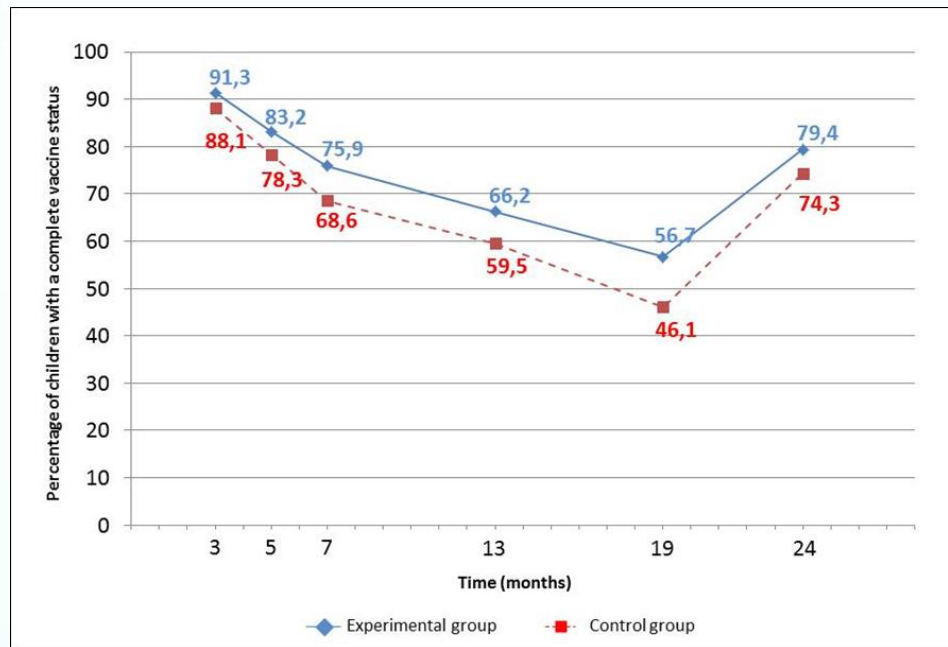


Governmental report. **A Gagneur et al.** Should an innovative promotion of immunization in maternity improve the immunization coverage of infants. The Promovac study. Bibliothèque et archives nationales du Canada 2013. ISBN :978-2-9813830-0-6, 112p

Impact on infants' vaccination coverage

Vaccination coverage (VC)	Expérimental Group	Control Group	Increase of VC (%)	p	RR (95% CI)
	n = 1140	n = 1249			
	n (%)	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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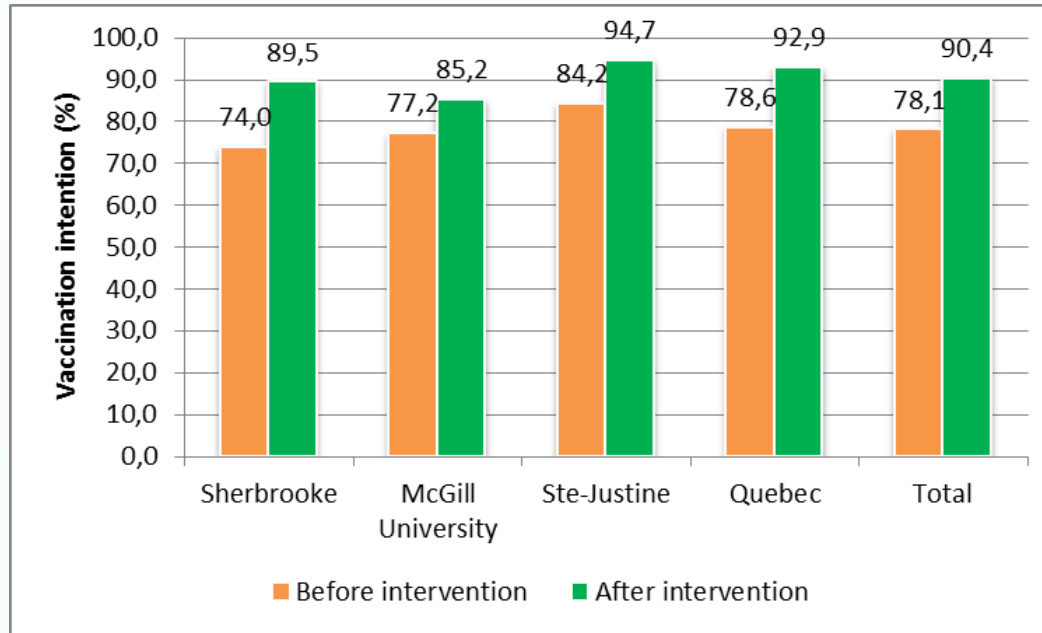
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PromoVac studies

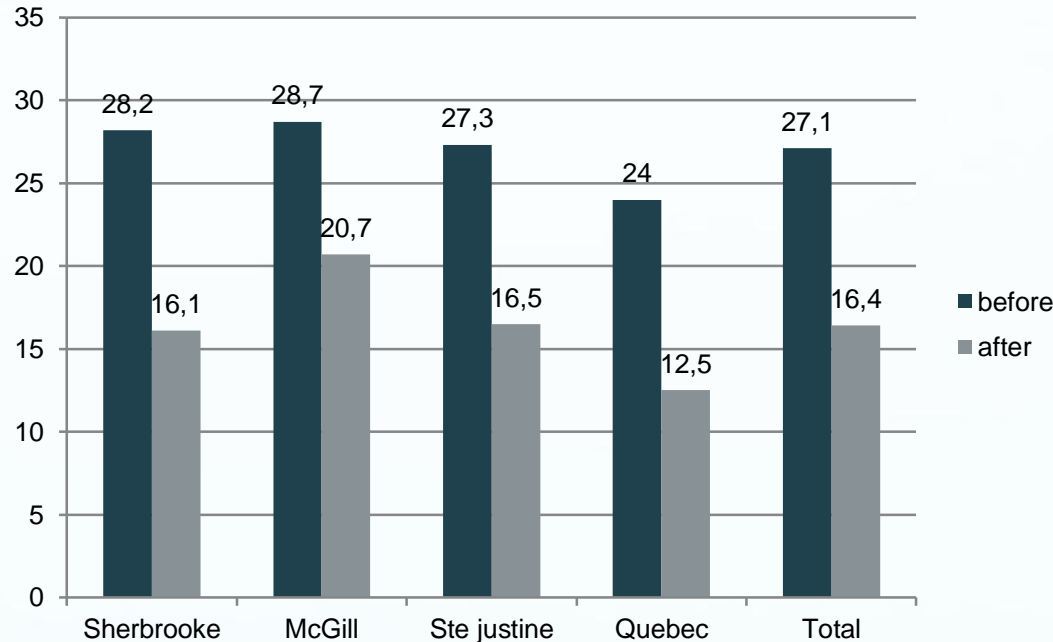
“PromoVaQ”

Impact on parents' vaccination intention



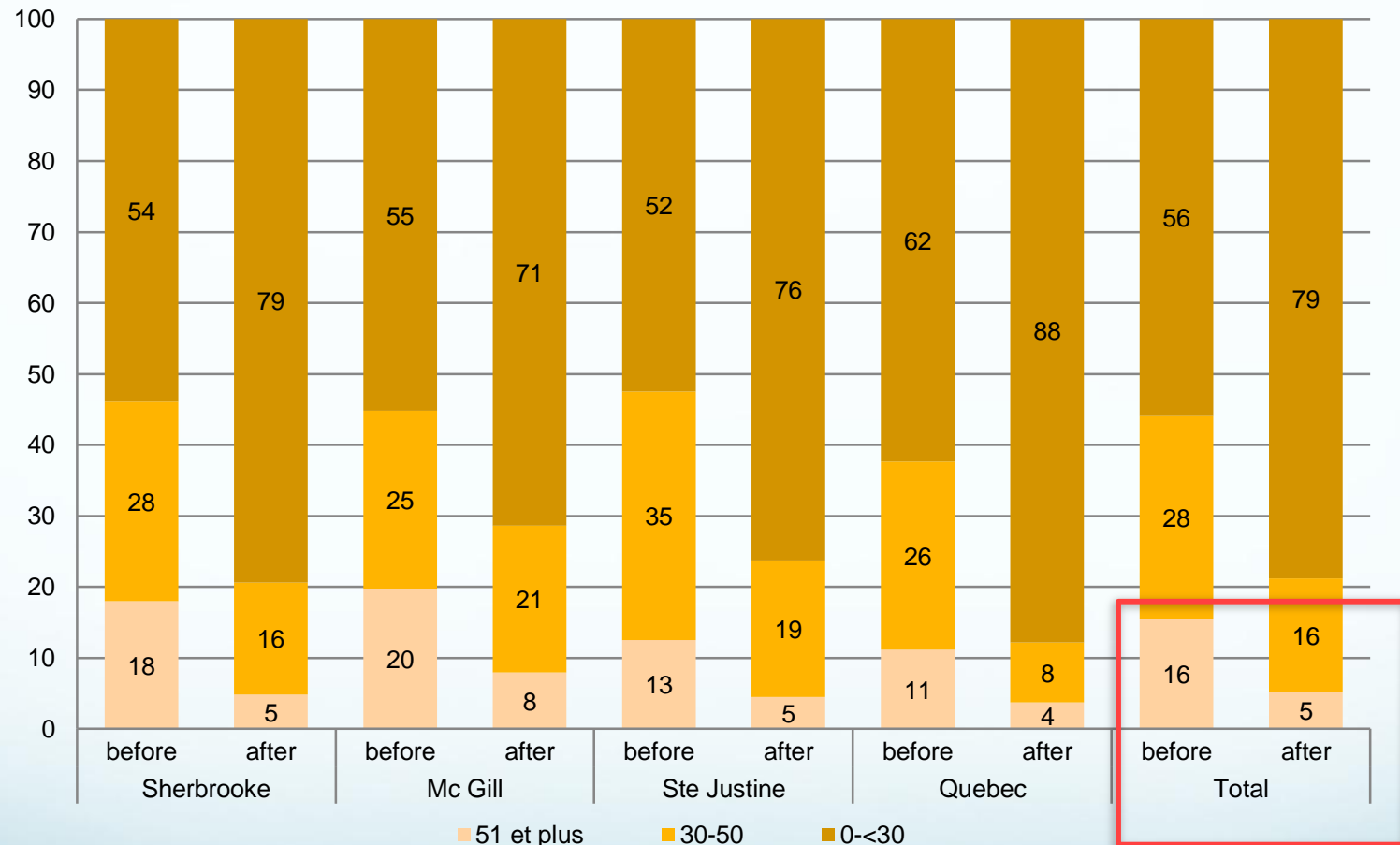
A significant increase in vaccination intention was observed in each center after the intervention, with a global increase of 12% ($p < 0.0001$).

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

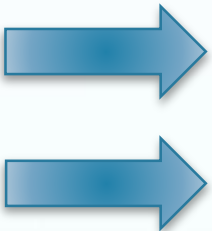


< 30 Low level of VH
 30-50 Intermediate level
 > 50 High level

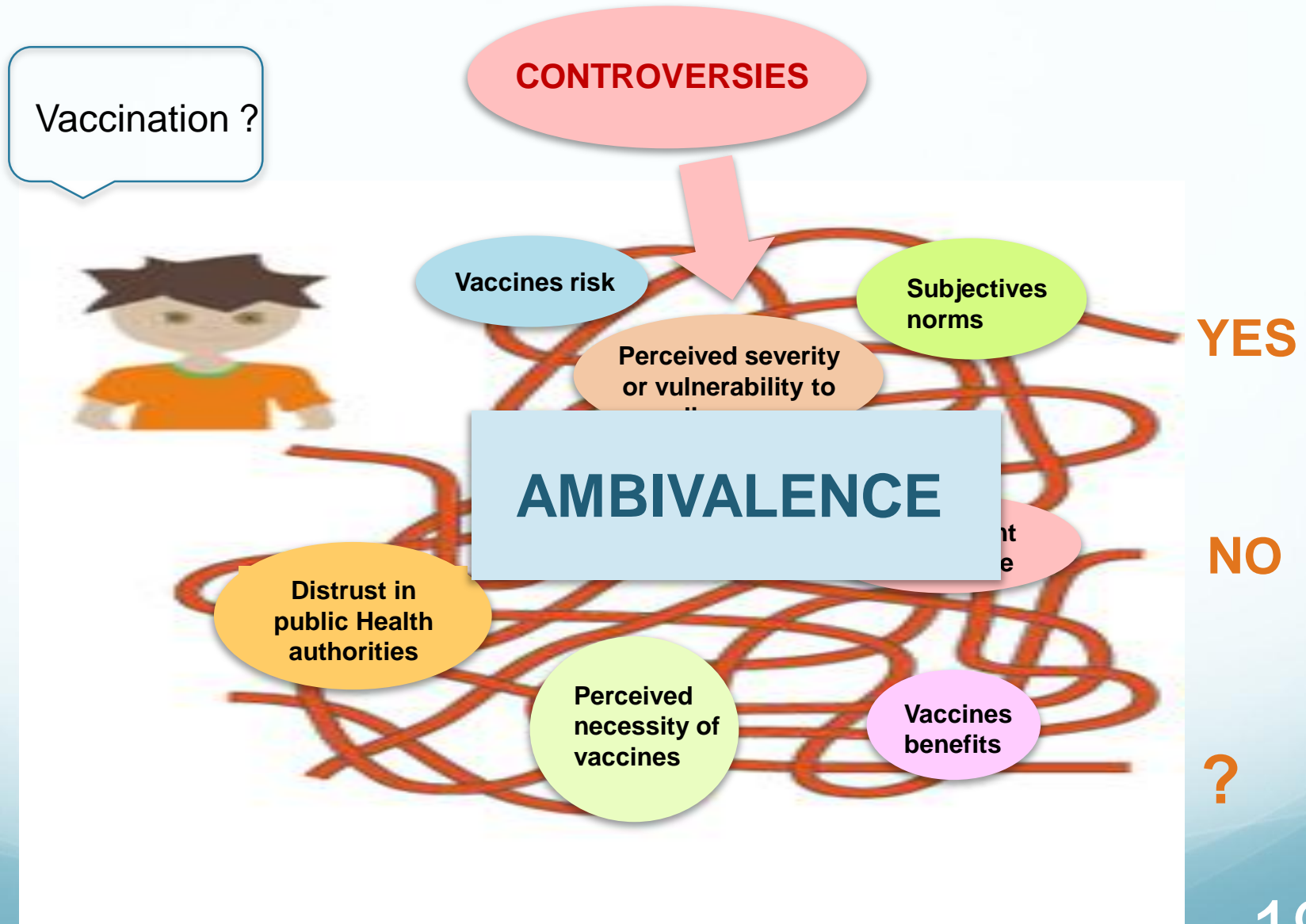
Impact on vaccination coverage (2/4 nurseries)

Vaccination coverage (VC)	intervention Group	Control Group	Increase of VC (%)	p
	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 counselor
- 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

Decisional process



PromoVa**c**... to PromoVa**Q**... to PromoVa**C**

- PROMOTion Vaccination in Canada (2017-2020)
 - RCT in 5 provinces (BC, NS, PEI, ON, QC)
 - CIRN and CRCHUS fundings, INSPQ partnership
 - Validation in different cultural and logistical contexts
 - 1600 families will be enrolled
- International RCT ?
 - France, Austria, Italy, USA, Australia
 - Universal validation of the concept
- And now in Québec ?



PROGRAMME **emmie**

ENTRETIEN MOTIVATIONNEL EN MATERNITÉ
POUR L'IMMUNISATION DES ENFANTS

From PromoVac to EMMIE program

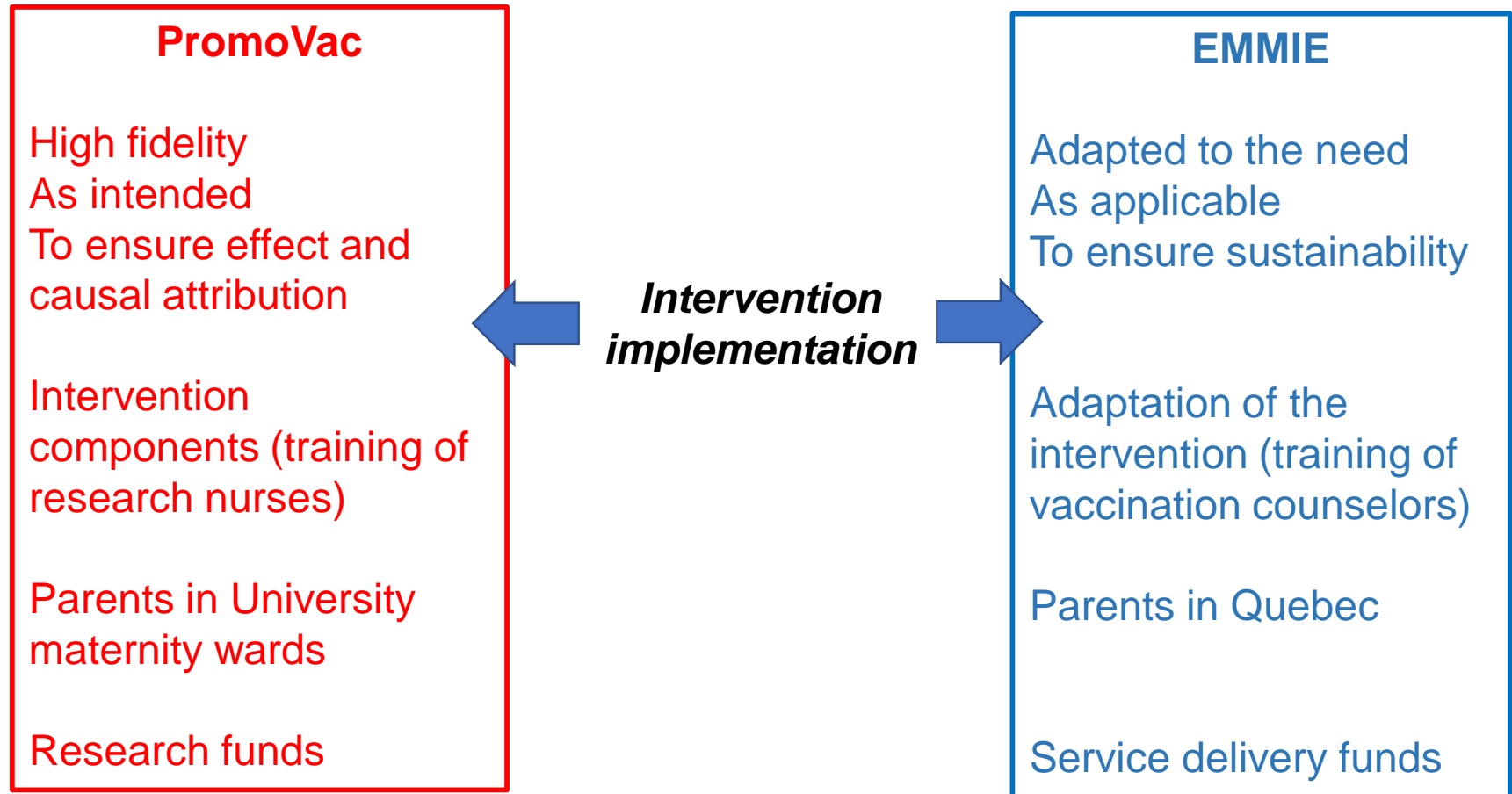
Deadly gap between research and real life



BELIE MELLOR 2012

ADAPTED FROM AN ORIGINAL BY B. MELLOR

From PromoVac to EMMIE : Challenges





Implementation outcomes

Implementation outcome	Definition
Acceptability	Perception among stakeholders new intervention is agreeable
Adoption	Intention of application of a new intervention
Feasibility	Extent to which an intervention can be applied
Fidelity	Extent to which an intervention gets applied as originally designed
Implementation costs	Costs of the delivery strategy
Coverage	Extent to which eligible population actually receive the intervention
Sustainability	Extent to which a new intervention is maintained post-introduction



EMMIE program

- Immunization Partnership Fund (IPF) : Subvention grants of 2-3M\$/year for projects aimed at improving vaccination coverage in Canada.
- Application of the Quebec Ministry of health to implement the PromoVac strategy in maternity wards in Quebec.
- EMMIE program phase 1:
 - Funds (IPF 0.5 M\$ and MSSS 2 M\$)
 - Period 2017-2019
 - Maternity wards \geq 2500 annual births
 - 55% of Quebec annual births (45 000 neonates)
 - 13 maternity wards in 6 administrative regions.



EMMIE program : Aims

- To assess implementation and impact of the program in real life
- Specific aims
 - Description of the implementation of the program (Implementation guide)
 - Identification of barriers and facilitators of implementation
 - Assess the impact of the program on
 - Vaccine intention and vaccine hesitancy score in parents
 - Vaccine coverage in children in Quebec
- EMMIE program phase 2 (2019-2021)
 - Implementation in all maternity wards in Quebec
 - Adoption as a new public health policy



EMMIE : ORGANIZATIONAL FRAMEWORK

Committee	Leader (s)	Members	Fonctions
Directory	A.Gagneur D. Auger (co-leader)	J.Sanson C.Albert V.Gosselin (coordinator)	Decisional level Responsability : Timeline, budget, gestion tools, project redaction Long term vision (phase 2) of the program Program's supervision Evaluation's program supervision
Coordination	D.Auger A. Gagneur (co-leader)	V.Gosselin, C. Albert, J. Sanson, M. Landry, N. Sicard, A. Farrands, J. Bergeron	Link between differents phases and functions of the program Program management Implementation support (program presentation to the hospitals) Evaluation support
Planification/ organisation	D. Auger J. Sanson	C.Albert M.Landry N.Sicard	Links between MSSS's directions Communication plan Links between hospitals' directors, public Health's directors First steps of implementation support
Opérationnel	C. Albert V.Gosselin	A.Gagneur, A.Farrands, J.Bergeron D.Pinsenault	Program's presentation to the hospitals Selection of resources comitee (vaccination counsellors) Training and supervision of vaccination counsellors
Évaluation	A.Gagneur V.Gosselin	M.Guay, E.Dubé. J.Sanson, N.Sicard, J.Bergeron, N.Boulianne, E.Toth	Evaluation plan development Evaluation management (implementation and impact) Evaluation plan redaction Link between ethics committee



Vaccination counselors

- Nurses or not ?
- Immunization training
 - Based on the website PIQ program
 - Specific immunization training (EMMIE immunization guide)
 - Trainers in each region
 - Specifically adapted to the intervention for parents
- MI training in 5 steps +++
 - 1) 2 days session by 2 certified trainers
 - 2) Training period (3 weeks in maternity wards, audio recording with trainers feedback)
 - 3) Feed-back one day session
 - 4) Validation period (2 weeks in maternity wards, audio recording, trainers visit on site)
 - 5) Implementation (annual audio recording, annual visit, community of practice)

EMMIE outcomes (Implementation)

Population	Outcomes	Data source- instruments
Vaccination counselors	MI knowledge and competences MI training satisfaction % of parents meet during post-partum stay (characteristics of non-met parents) % refusal (characteristics of parents) Duration of interventions % parents acceptance of registry access Acceptation in maternity wards team Satisfaction about the program Suggestions to improve the program	Self administered questionnaire before and after training MITI 4.2 Administrative data of maternity wards Field diary of counsellors Individual meeting Focus group
Maternity wards HCP	Program's impact on activity Satisfaction about the program Barriers and facilitators Suggestions to improve the program	Self administered questionnaire Individual meeting Focus group
Managers, administrators	Satisfaction about the program Barriers and facilitators Suggestions to improve the program	Individual meeting Focus group



EMMIE outcomes (Implementation)

Population	Outcomes	Data source- instruments
Parents	Program acceptability Satisfaction about the program	Self administered questionnaire before and after intervention
Research team	Number and % of HCP and administrators met during the program presentation Fidelity and difference between anticipated and real timeline for recruitment and training of counselors Numbers of recruited and trained counselors Annual counselors renewal rate Duration of training period Directs costs of the program Costs/additional vaccinated child	Dashboard of counselors recruitment and training process. Hospital administrative data



EMMIE outcomes (Impact)

Population	Outcomes	Data source- instruments
Parents	Socio-demographics data Vaccination intention score Vaccination hesitancy score Knowledge about vaccination Fidelity and differences between PromoVac studies results	Self administered questionnaire before and after intervention
Children recruited in the program	VC at 3,5,7,13,19 and 24 months Long-term VC (3,6,12 years) Age at vaccination Number of days underimmunized Vaccination place Address Socio-demographics data Fidelity and differences between PromoVac studies results	Quebec provincial registry of vaccination

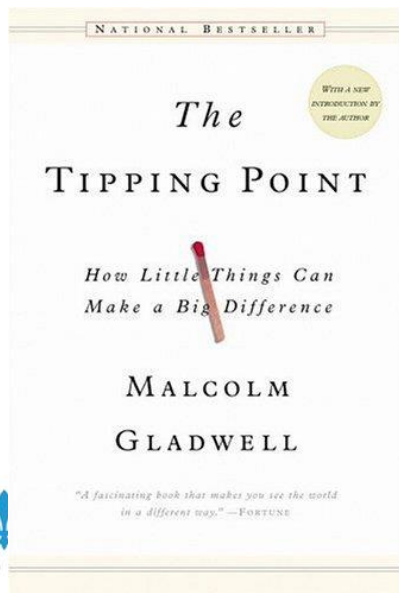


EMMIE Timeline

Protocol redaction	May-July 2017
Informations about the program to : <ul style="list-style-type: none"> - Public health regional directions - Hospitals directions - Ministry of health - Maternity wards administration 	April-August 2017
Recrutment of counsellors	September-October 2017
Training of counsellors	November 2017 to January 2018
Data collection	November 2017 to February 2019
Data analysis implementation	March 2018- March 2019
Data analysis impact	
Questionnaire	January-April 2019
VC (3,5,7 months)	August 2019-October 2019
VC (13,19,24 months)	January-march 2021
VC (3 years)	2022
VC (6 years)	2025
VC (12 years)	2031
Preliminary results diffusion	November 2018 - March 2019

Future directions

- EMMIE phase 2
 - New practice of care in maternity wards in Quebec
 - Perennial funds by the MSSS
 - Improve VC of 5-10% in children
- Change of vaccination perception in the population ?
 - 90 000 annual births ➡ 180 000 parents = 2% of Quebec population
 - The program could be reached 20% of the Quebec population in 10 years



➡ Sufficient critical mass population to change the vaccination perception in Quebec ?

➡ Herd immunity about vaccination perception ?



Acknowledgements

Research team: Thomas Lemaitre, Anne Farrands, Marie-Laure Specq, Virginie Gosselin

Parents involved in the studies

EMMIE collaboration team :

Danielle Auger, Infectious disease coordinator MSSS

Carole Albert, Johanne Sanson, EMMIE managers

Virginie Gosselin, EMMIE coordinator

Julie Bergeron, post-doc student

Anne Farrands, Danielle Pinsenault, MI trainers

Members of EMMIE comitees : Eve Dubé, Monique Landry,
Maryse Guay, Nadine Sicard, Evelyne Toth, Nicole
Boulianne,

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

Blaise Pascal (1623-1662)