Quand les professionnels de santé doutent : comprendre et prévenir l'hésitation vaccinale

Monika Heller, PhD

EHESP

Sommaire

A) Définition de l'hésitation vaccinale

B) Prévalence de l'hésitation vaccinale

C) Comprendre l'hésitation vaccinale

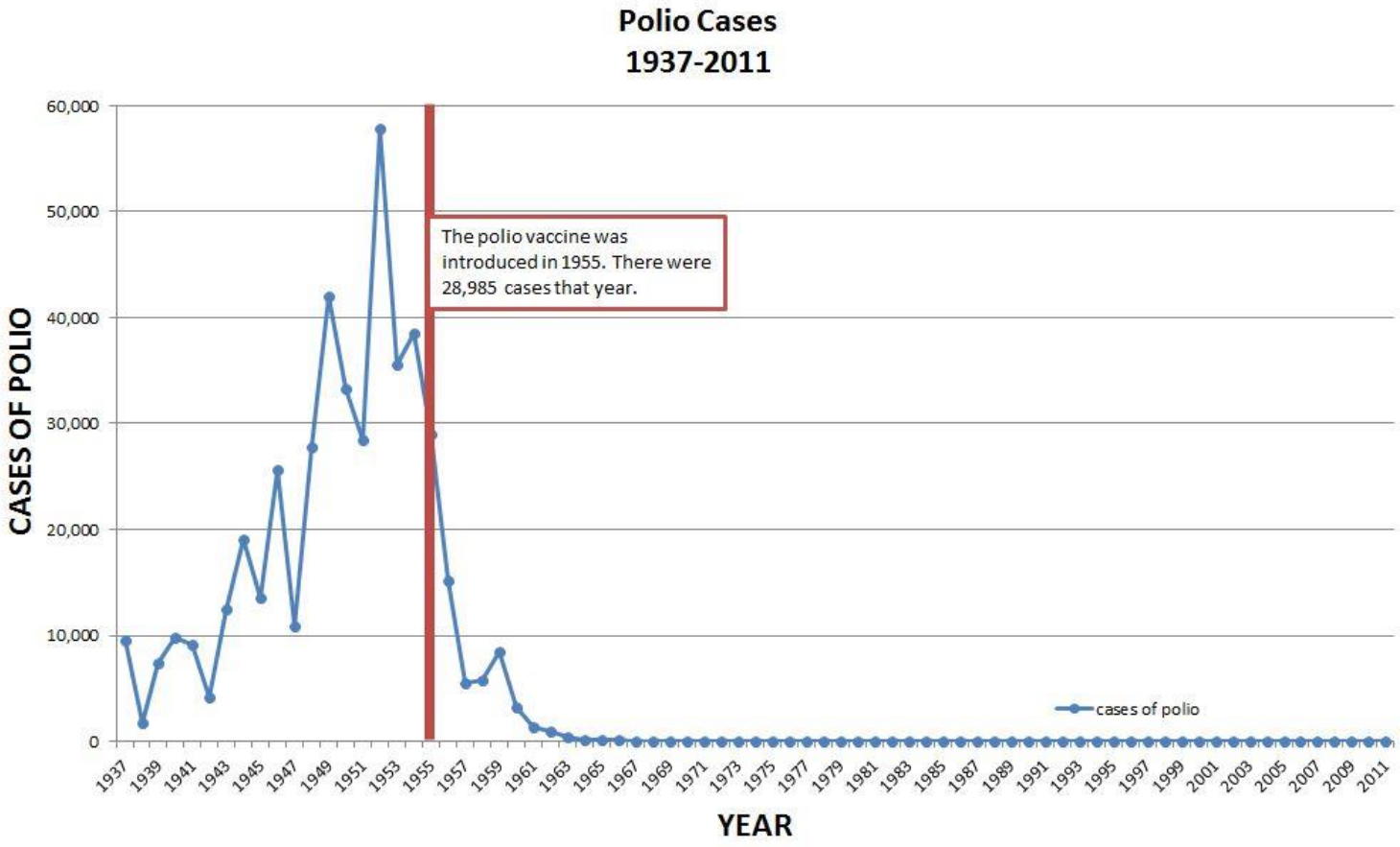
D) Faire face à l'hésitation vaccinale

E) L'étude NURSEVAX

Population générale

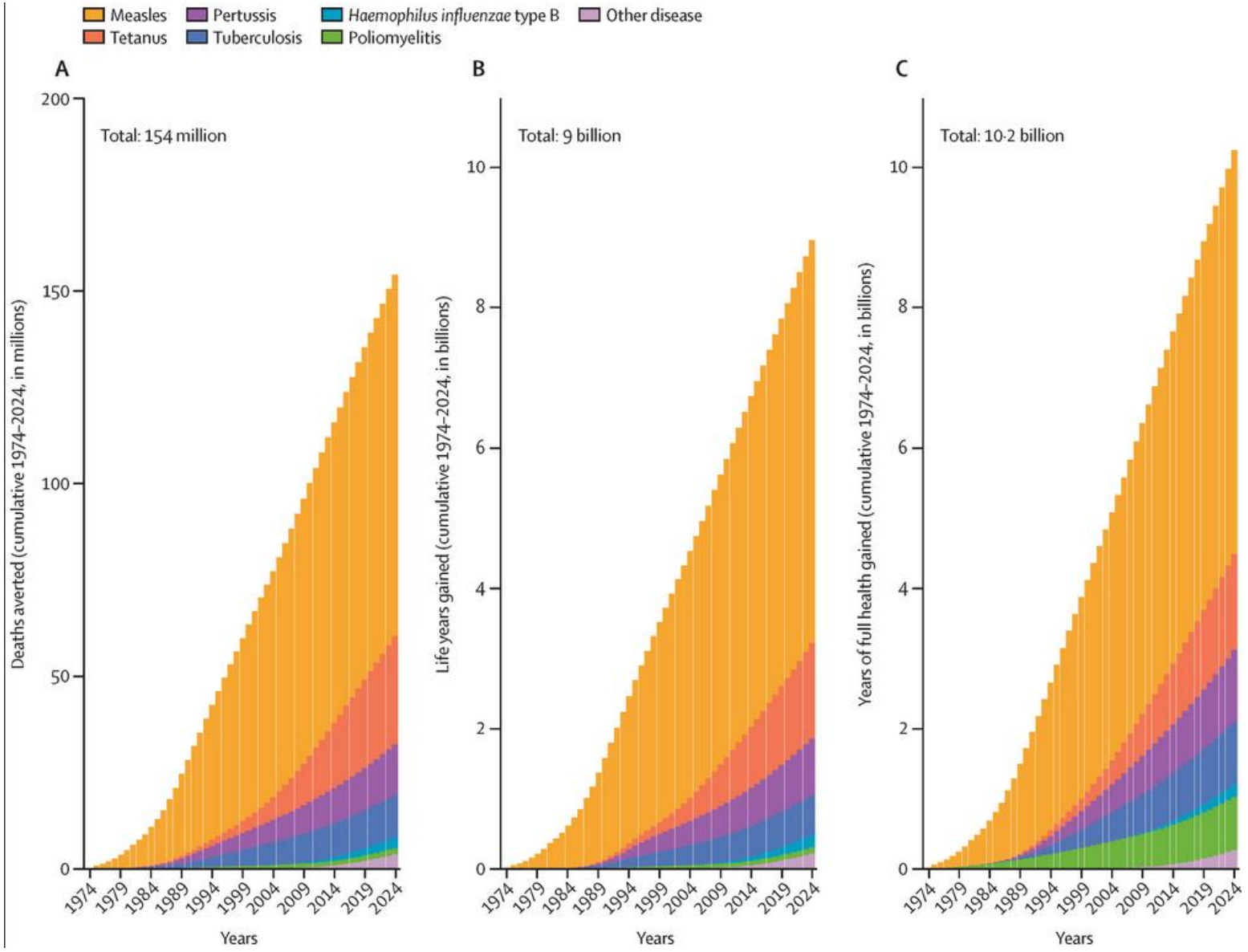
Professionnels de la Santé

Les effets de la vaccination sont manifestes



Source : Centers for Disease Control and Prevention

Les effets de la vaccination sont manifestes



Shattock A, Johnson H, Sim S et al. Contribution of vaccination to improved survival and health: modelling 50 years of the Expanded Programme on Immunization; The Lancet, 2024; 403, 2307-2316

L’histoire de l’hésitation vaccinale

L’HISTOIRE DE LA VACCINATION

18e siècle :
Edward Jenner et le vaccin contre la variole

19e siècle :
Le vaccin de Louis Pasteur contre la rage

1945 :
Le vaccin contre la grippe

Années 50 :
Le vaccin contre la polio

2006 :
Le premier vaccin contre le papillomavirus

2019 :
Avancée dans la lutte contre le virus Ebola et contre le paludisme

2021 :
La pandémie de la Covid-19

A) Définition de l’hésitation vaccinale

Définition de l'hésitation vaccinale de la OMS

Organisation mondiale de la Santé

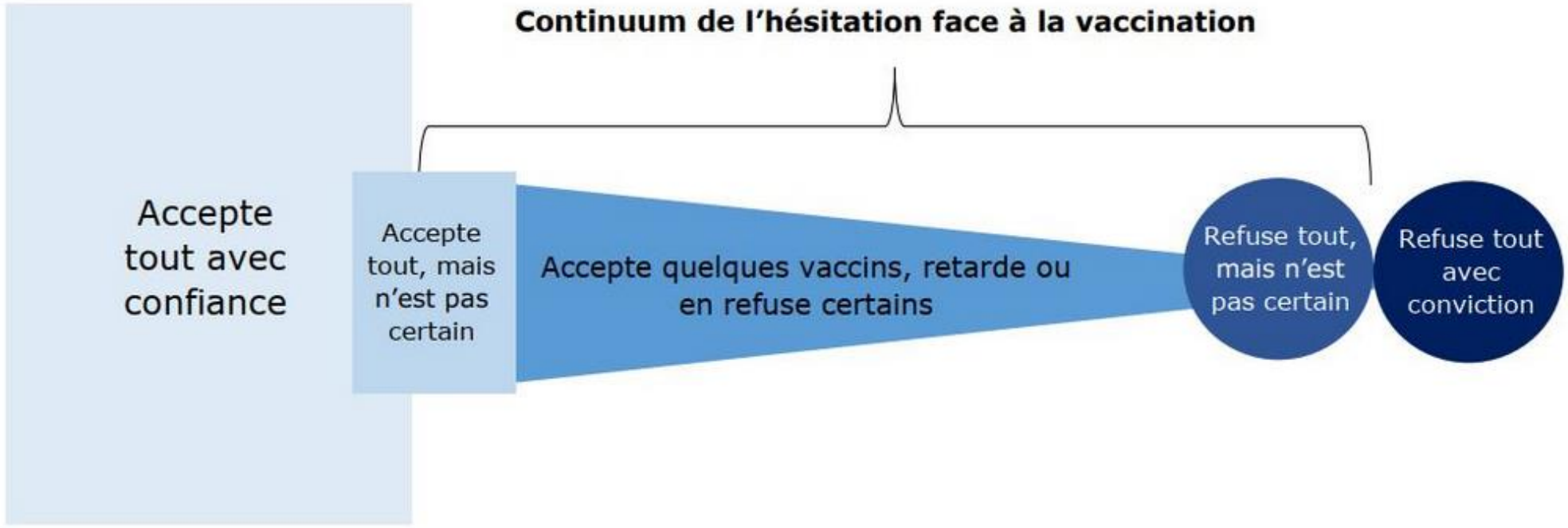
"Vaccine hesitancy refers to ***delay in acceptance or refusal of vaccines despite availability of vaccination services****. Vaccine hesitancy is complex and context specific varying across time, place and vaccines. It includes factors such as* ***complacency****,* ***convenience*** *and* ***confidence***" (WHO SAGE Vaccine Hesitancy Working Group report)

« L'hésitation vaccinale désigne ***un retard dans l'acceptation ou le refus des vaccins malgré la disponibilité des services de vaccination****. L'hésitation vaccinale est complexe et dépend du contexte, variant au fil du temps, selon les lieux et les vaccins. Elle inclut des facteurs tels que la* ***complaisance****, la* ***commodité*** *et la* ***confiance****. »*

3 Cs

Le continuum de l'hésitation vaccinale

Demande forte — Hésitation vaccinale — **Demande nulle**



MACDONALD *et al*. Vaccine hesitancy: Definition, scope and determinants. *Vaccine*, 2015, vol. 33, no 34, p. 4161-4164.

Revue systématique avec n=422 études sur la HV

Comportements

Retard, refus, calendrier alternatif, vaccination malgré des incertitudes,...

Cognitions et affect

Manque de confiance, doutes à l'égard de l'efficacité et de l'innocuité des vaccins, leur nouveauté, ambivalence, croyances, mise en cause...

Prise de décisions

Indécision, niveau d'indecision, processus de prise de décision

L'hésitation vaccinale est un état psychologique consistant à être indécis ou à ne pas encore avoir pris une décision concernant la vaccination.

Bussink-Voorend, Daphne, Jeannine LA Hautvast, Lisa Vandeberg, Olga Visser, and Marlies EJL Hulscher. 2022. 'A systematic literature review to clarify the concept of vaccine hesitancy', *Nature human behaviour*, 6: 1634-48.

Mesurer l’hésitation vaccinale

•Intentions et volonté de se faire vacciner

•Échelles (PACV, Oxford Covid-19 vaccine hesitancy scale, VCI, SAGE, VHS, 5C, 7C, Pro-VC-BE...)

•Indicateurs indirects (proxys) : comportement antérieur (l'historique vaccinal de la personne, celle de ses enfants), recommandation de la vaccination

Bussink-Voorend, Daphne, Jeannine LA Hautvast, Lisa Vandeberg, Olga Visser, and Marlies EJL Hulscher. 2022. 'A systematic literature review to clarify the concept of vaccine hesitancy', *Nature human behaviour*, 6: 1634-48.

B) Prévalence de l’hésitation vaccinale

Vaccine Confidence Index (VCI)

To what extent do you agree with the following statements?

- Vaccines are important for children to have.
- Vaccines are safe.
- Vaccines are effective.
- Vaccines are compatible with my beliefs.

Il est important que les enfants soient vaccinés.

Les vaccins sont sûrs.

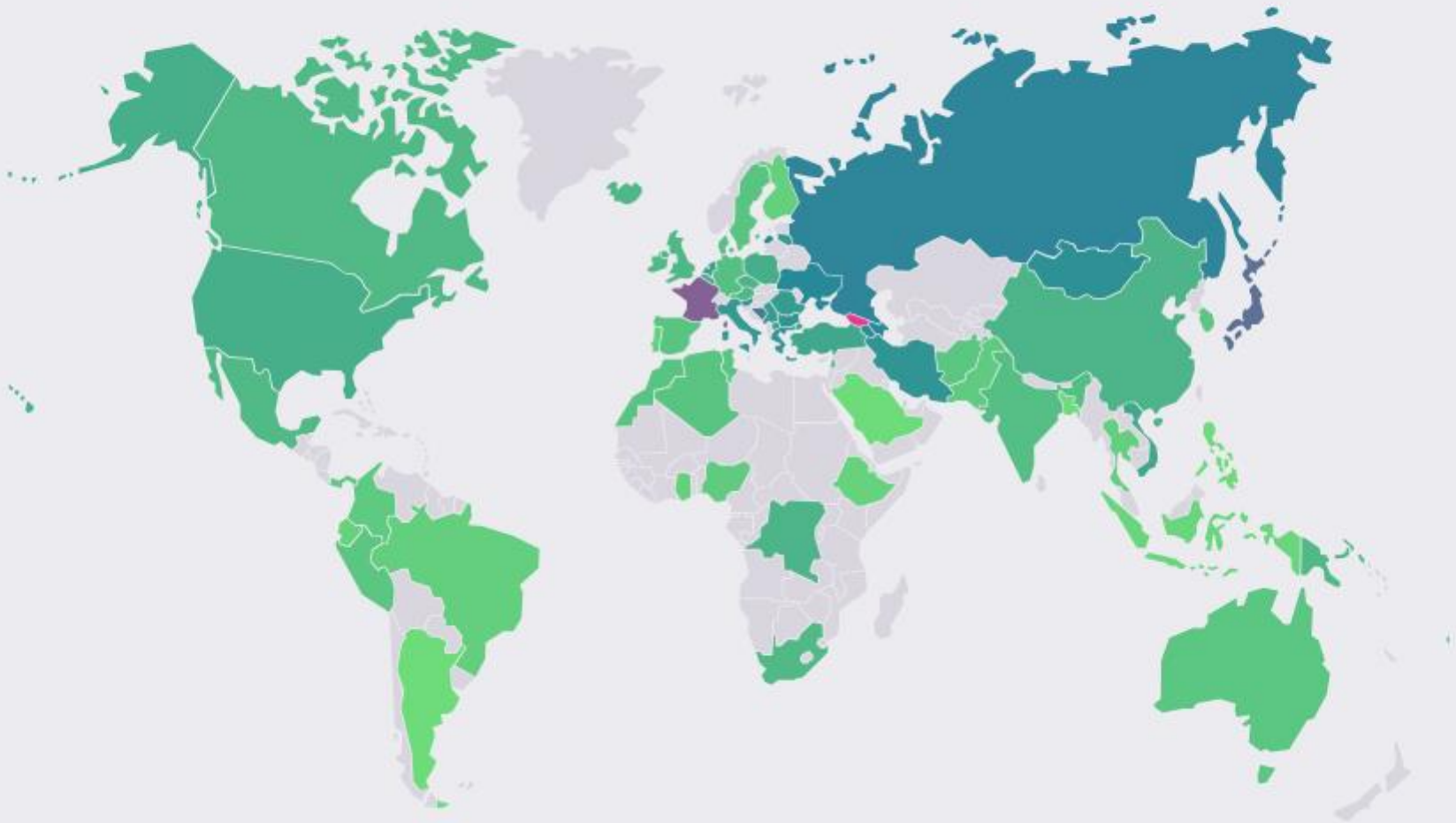
Les vaccins sont efficaces.

Les vaccins sont compatibles avec mes convictions religieuses.

https://www.vaccineconfidence.org/vci/map/

Larson, H. J., Schulz, W. S., Tucker, J. D., & Smith, D. M. (2015). Measuring vaccine confidence: introducing a global vaccine confidence index. *PLoS*

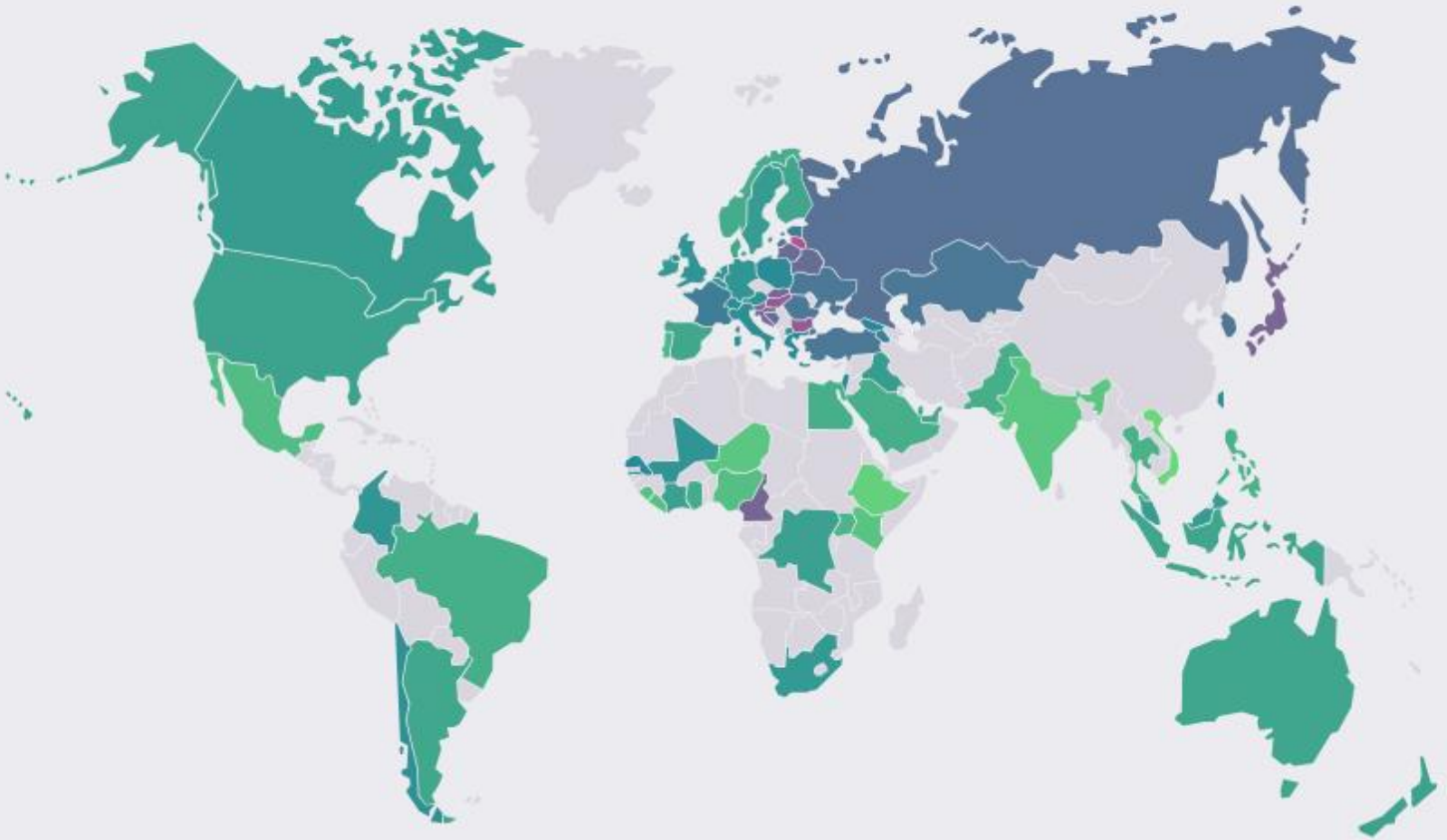
World VCI map



2015

France: 50%

World VCI map



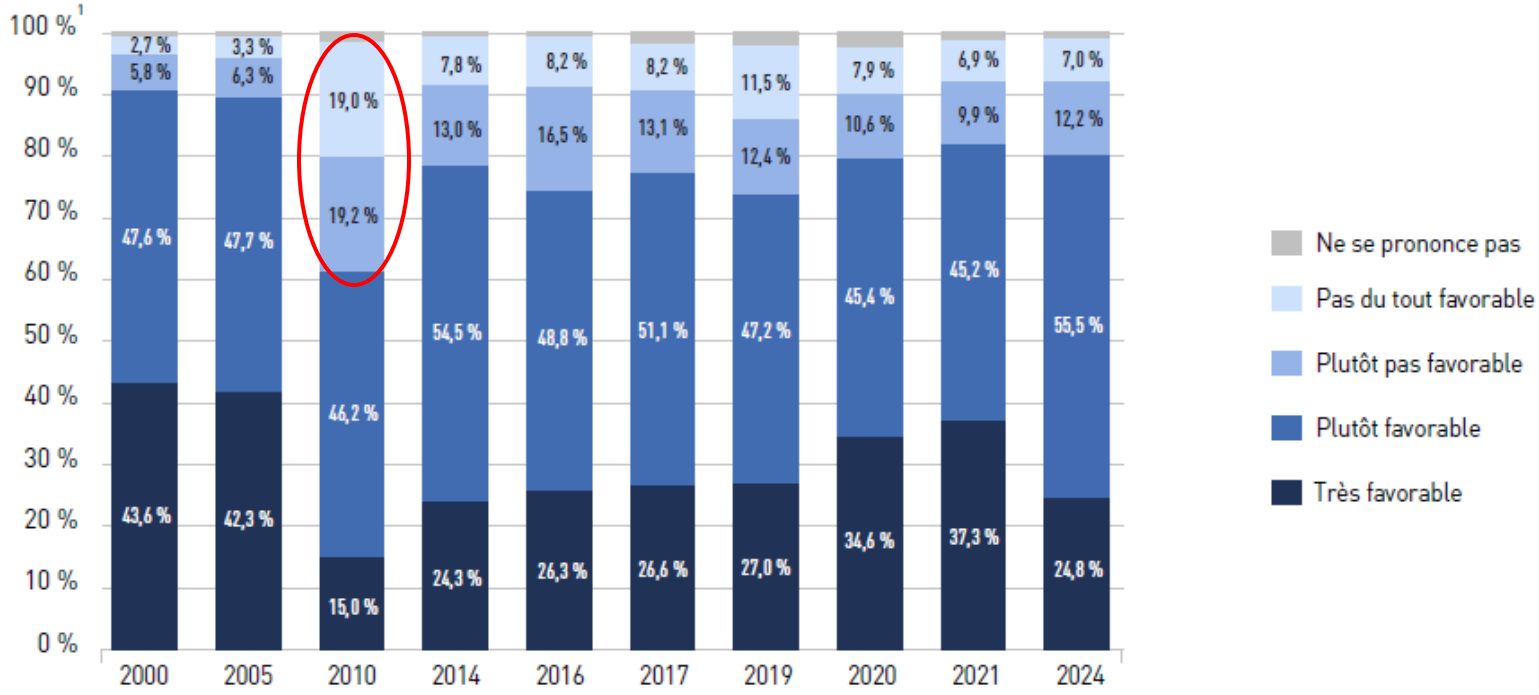
2023

France: 61%

Baromètres de Santé publique France

Êtes-vous favorable à la vaccination en général?

FIGURE 2 | Évolution de l'adhésion à la vaccination en général parmi les 18-75 ans, Baromètre de Santé publique France, éditions 2000-2024



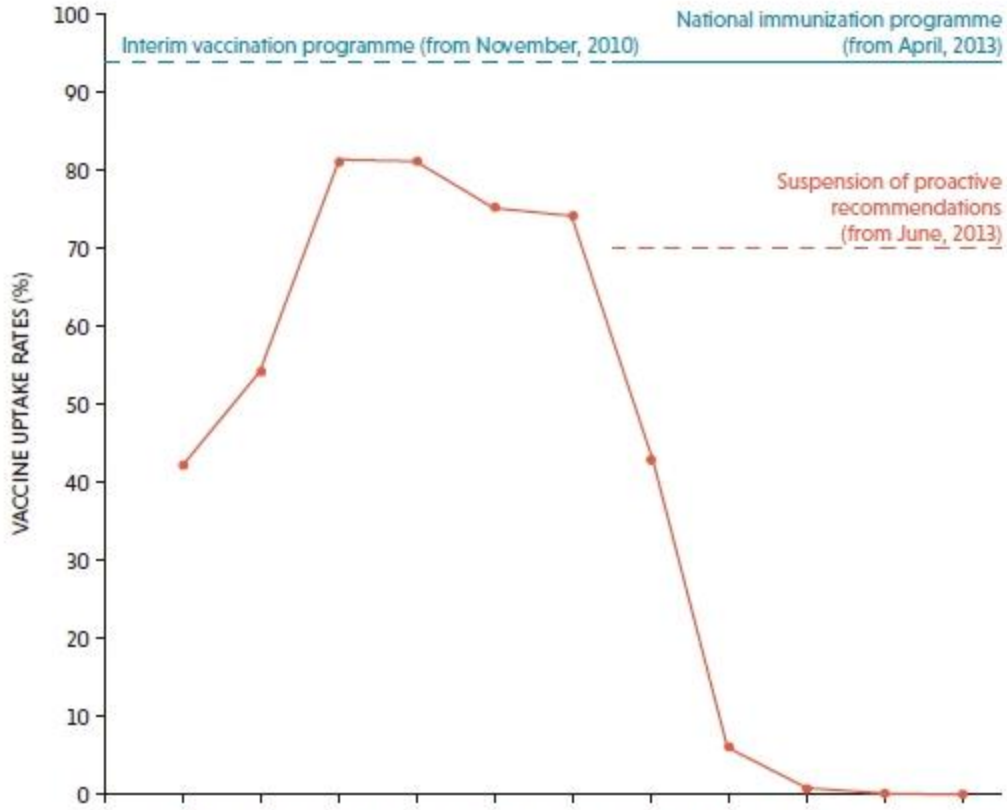
1. Pourcentages pondérés et intervalles de confiance à 95 %.
Champ commun entre les éditions 2000-2024 du Baromètre de Santé publique France : adultes âgés de 18 à 75 ans résidant en France hexagonale.

Santé publique France

Les conséquences de la controverse sur le vaccin contre la grippe A/H1N1

La vaccination PVH au Japon

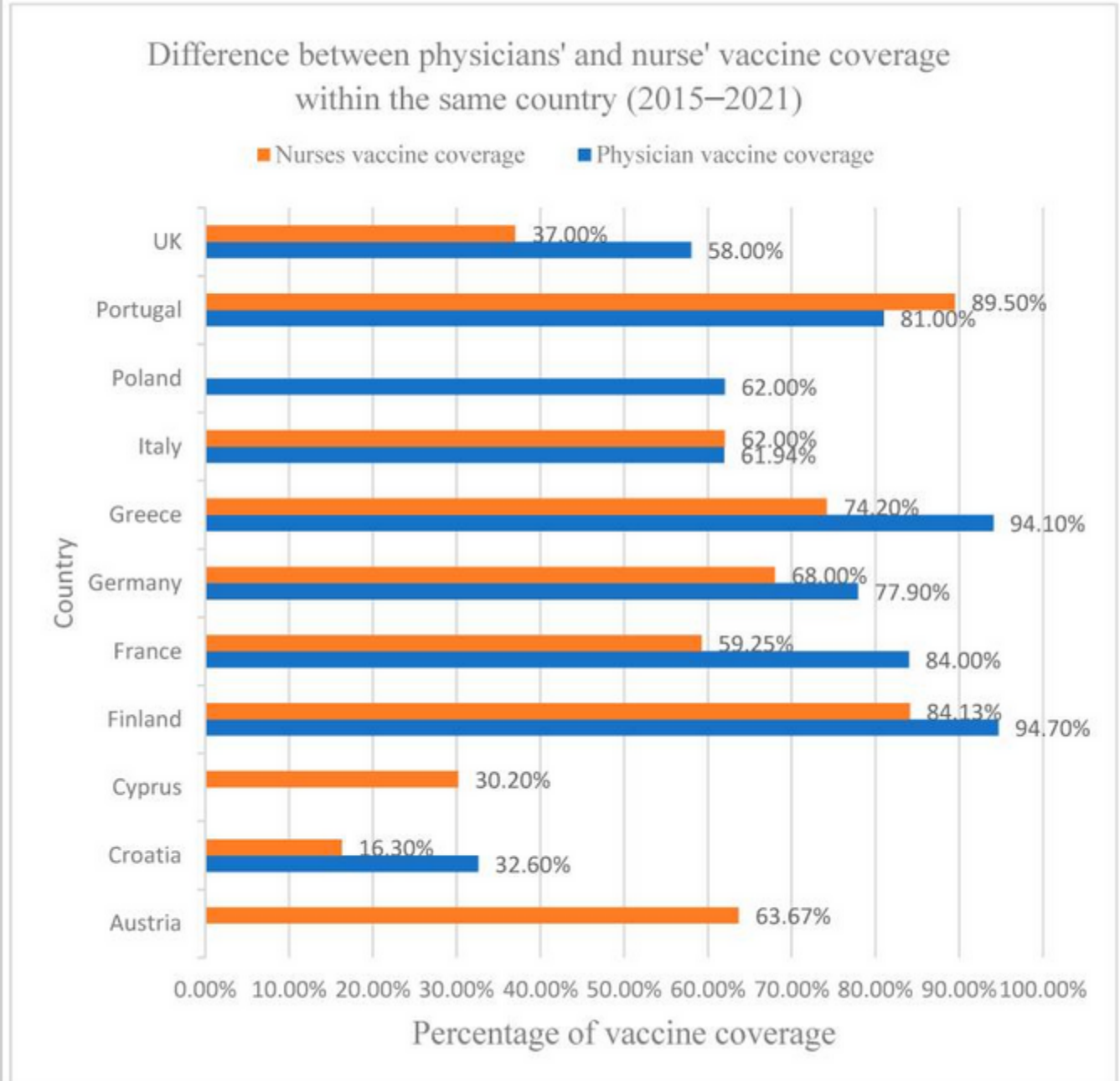
HPV Vaccine Crisis In Japan And Impact On Vaccination Rates.
Uptake rates of HPV vaccine (at least one dose) in Japan as of October 2015. Reproduced with permission from Konno R et al 2019 (data source: Ministry of Health, Labour and Welfare, Japan).



BIRTH COHORT YEAR	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
VACCINE UPTAKE RATES (%)	42.2%	54.2%	81.1%	81.2%	75.3%	74.2%	42.9%	6.1%	0.7%	0.1%	0.01%
CUMULATIVE NUMBER OF VACCINATED GIRLS	250,159	319,677	449,590	457,532	434,325	425,476	245,805	34,619	4,026	540	55
NUMBER OF GIRLS IN COHORT	592,400	589,300	554,500	563,400	576,700	573,800	572,400	563,700	551,700	539,100	509,200

Prévalence de l’hésitation vaccinale chez les professionnels de santé en France

Vaccin	Taille de l'échantillon	Prevalence N (%)	Population	Référence
Covid-19	1965	453 (23%)	Infirmières, Médecins	Paris et al. 2021
HV générale, grippe, HPV, ROR	1712	166 (11%) modérément hésitant, 56 (3%) très hésitant	Médecins généralistes	Verger et al. 2016
HV générale	1795	718 (40%) modérément hésitant, 14 (0.8%) très hésitant	Médecins hospitaliers	Verger et al. 2021
HV générale	542	108 (20%)	Étudiants	Baldolli et al. 2020
Vaccins obligatoires et recommandés	1539	670 (44%)	Infirmières	Wilson et al. 2020



Kaur, M., Coppeta, L., & Olesen, O. F. (2023). Vaccine hesitancy among healthcare workers in Europe: a systematic review. *Vaccines*, *11*(11), 1657.

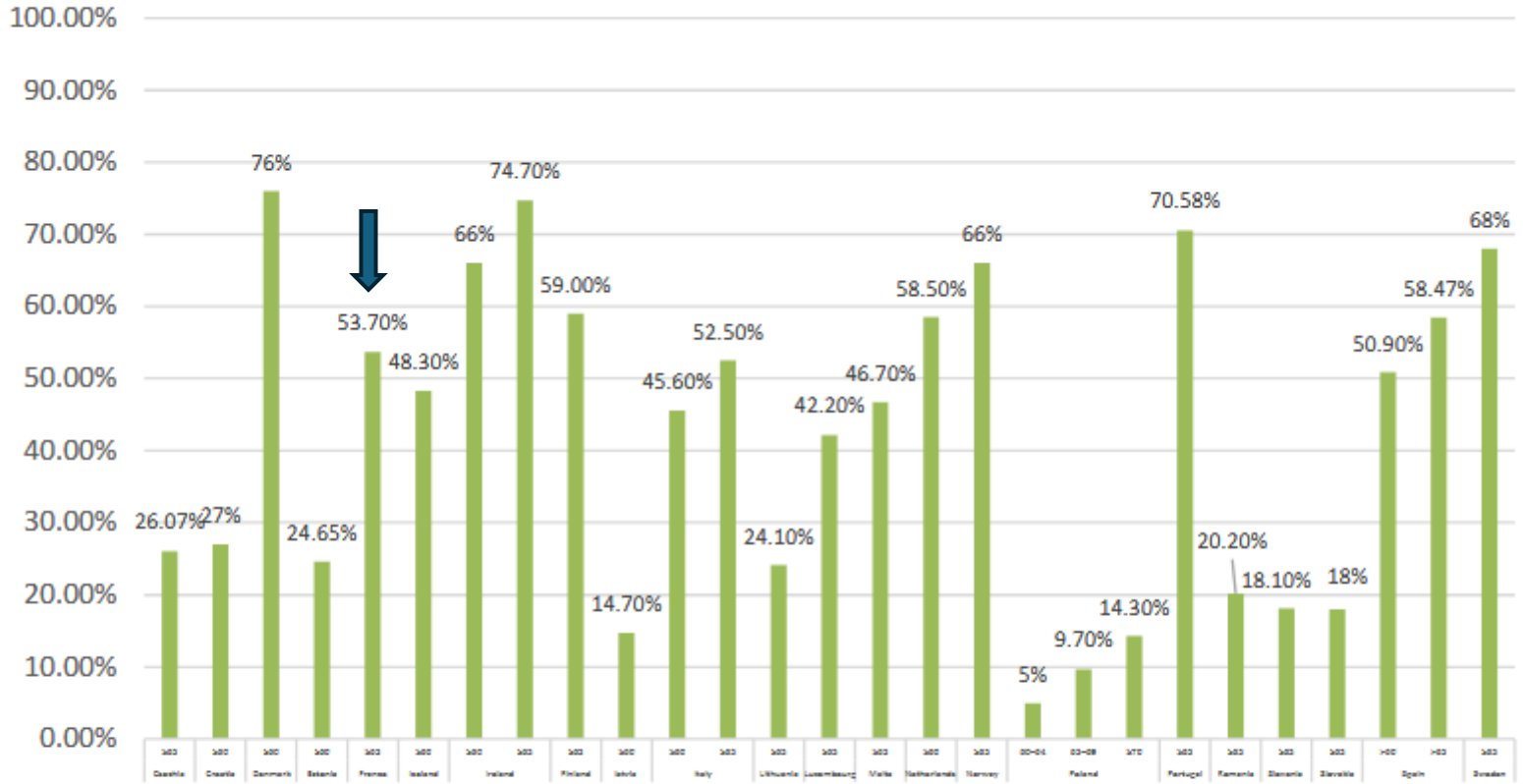
https://www.ecdc.europa.eu/sites/default/files/documents/seasonal-influenza-recommendation-coverage-2025.pdf

Vaccination antigrippale des professionnels de la santé

- 29 pays de l'UE/EEE avaient une recommandation pour les professionnels de la santé
- 23 pays recommandaient la vaccination pour l'ensemble des professionnels de la santé
- dans 6 pays, les recommandations étaient limitées au personnel en contact étroit avec les patients ou avec des matériaux potentiellement contaminés.

>65 ans population générale

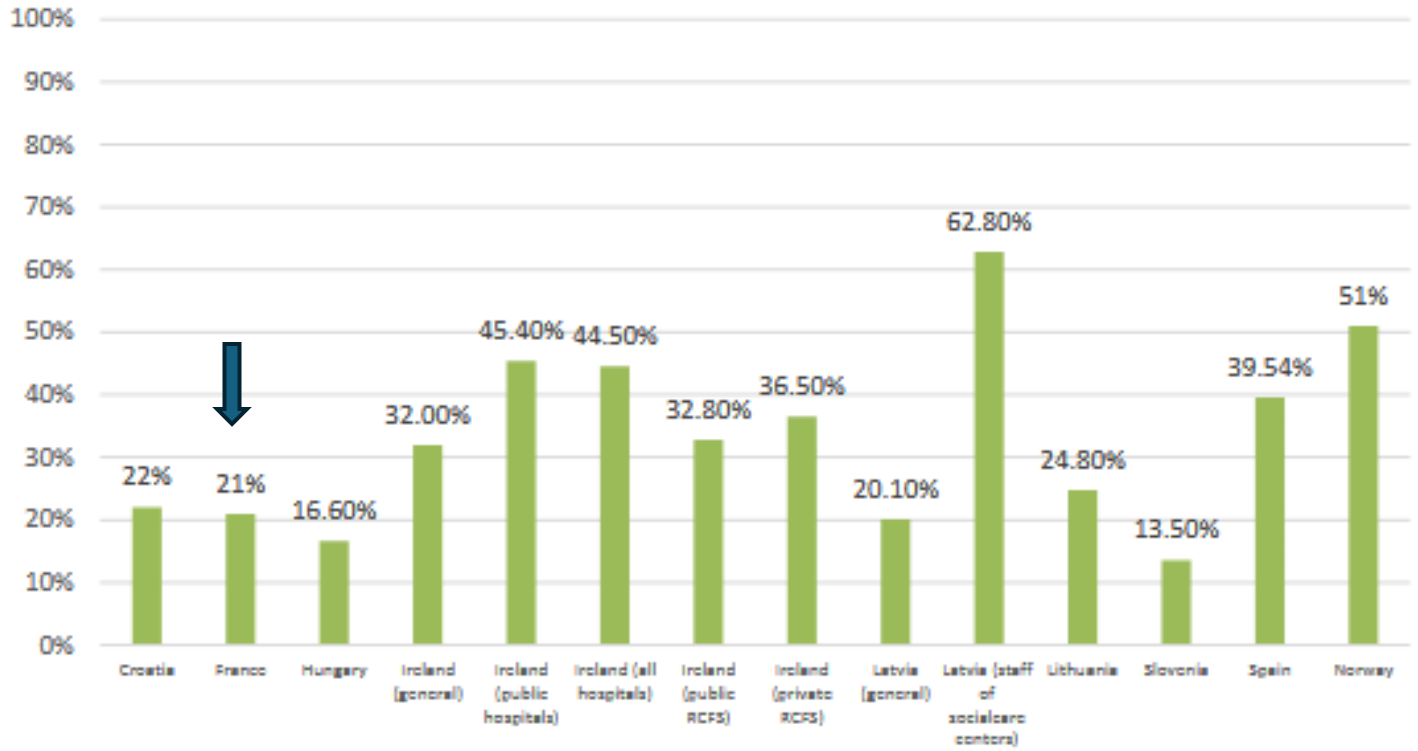
Figure 2. Seasonal influenza vaccination coverage rates in older adults, EU/EEA countries, 2024/25 influenza season



Source: *2025 ECDC Influenza Survey in EU/EEA countries.*
EEA: European Economic Area.
VCR data were collected via an ***administrative method*** *for Croatia, Hungary, Ireland, Lithuania, Luxembourg, Slovakia, Slovenia and Spain.*
Electronic immunisation registries *were used in Czechia, Denmark, Estonia, Finland, Iceland, Norway, Poland, Portugal and Romania.*
Combination of administrative and survey methods was applied in Sweden. France reported health insurance claims data.
** In Denmark - the data represent people aged 65+ years – this does not include people living in long-term care facilities (LTCF) as these are monitored separately in our routine surveillance system. LTCF residents had a coverage of 85% and include all people registered with an address at LTCF regardless of age.*
*** In Luxembourg - These data represent the full calendar year 2024, not the 2024/2025 winter season. They are also based on all insured people aged >=65 years, whereas the data from previous years are restricted to insured people who were resident in Luxembourg.*

Professionnels de la santé

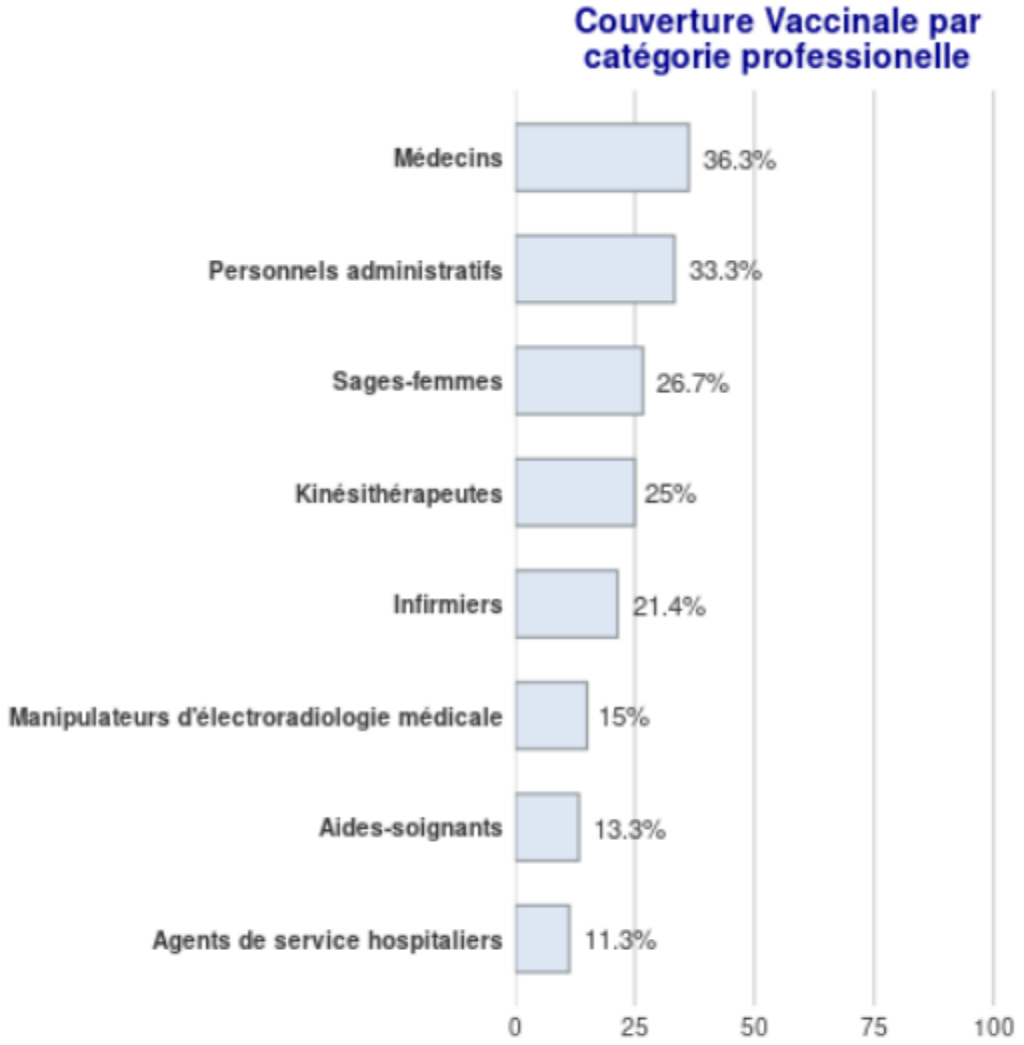
Figure 5. Seasonal influenza vaccination coverage rates among healthcare workers, EU/EEA countries, influenza season 2024/25



Source: 2025 ECDC Influenza survey in EU/EEA countries
RCFS: Residential Care Facilities
*Croatia, Hungary, Lithuania, and Spain collected data via **administrative methods**. France collected data via a **survey method**. Ireland reported data using **administrative methods** (HSE HR records matched with NIIS), **surveys** (public hospitals and residential care facilities), and a **combination of administrative and survey methods** (all hospitals, public and private). Latvia reported data via **administrative methods** for healthcare workers in general, staff and residents of social care centres, and for the 2024/25 season specifically. Slovenia data are from electronic immunization registry. Results from survey data in **Norway** show 51% coverage among HCWs with close contact with patients.*

Couverture vaccinale antigrippale du personnel hospitalier

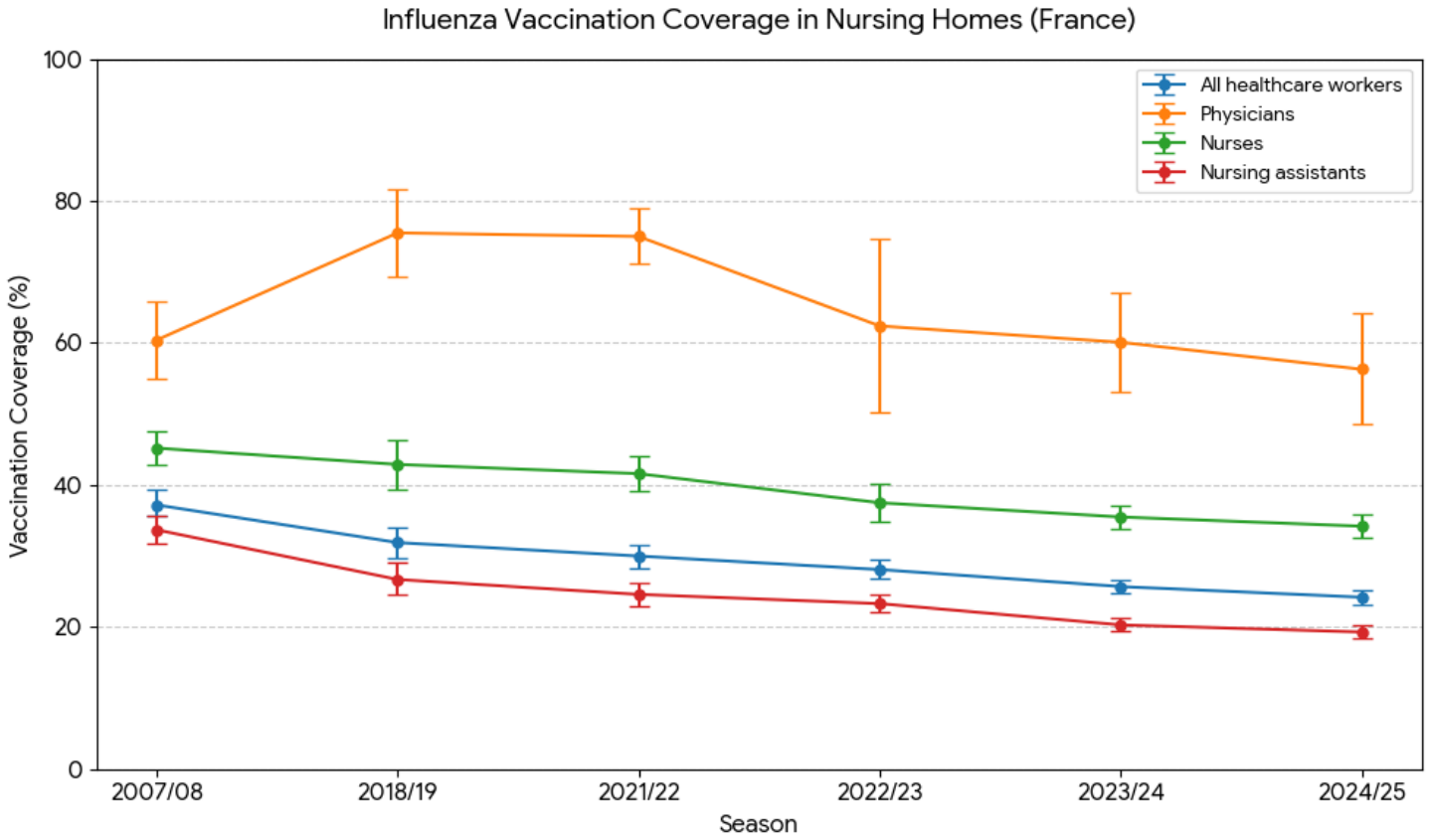
Résultats nationaux 2025 – données hiver 2024/2025



Clé de lecture: parmi les médecins, 36,3% sont vaccinés

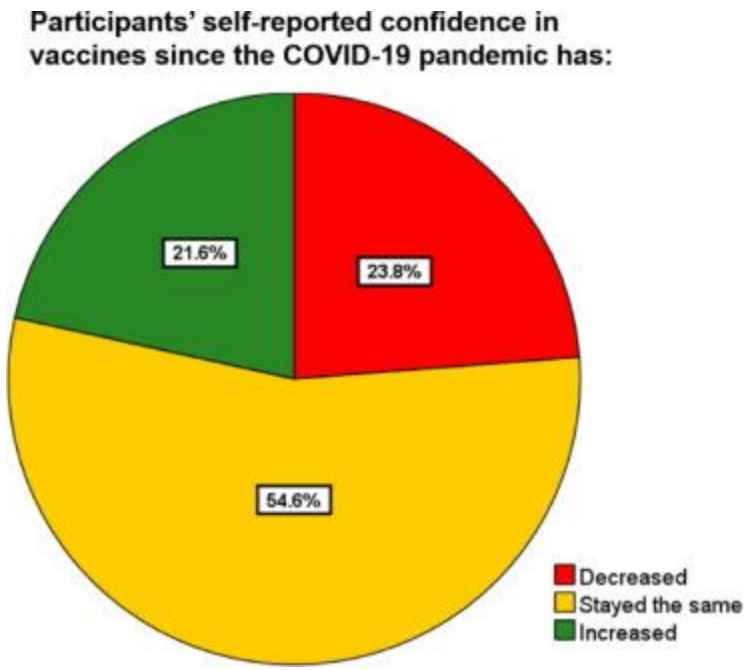
https://www.has-sante.fr/upload/docs/application/pdf/2026-01/iqss_2025_rapport_comparatif_vag_2025.pdf

Évolution de la couverture vaccinale antigrippale des professionnels de santé en EHPAD, France

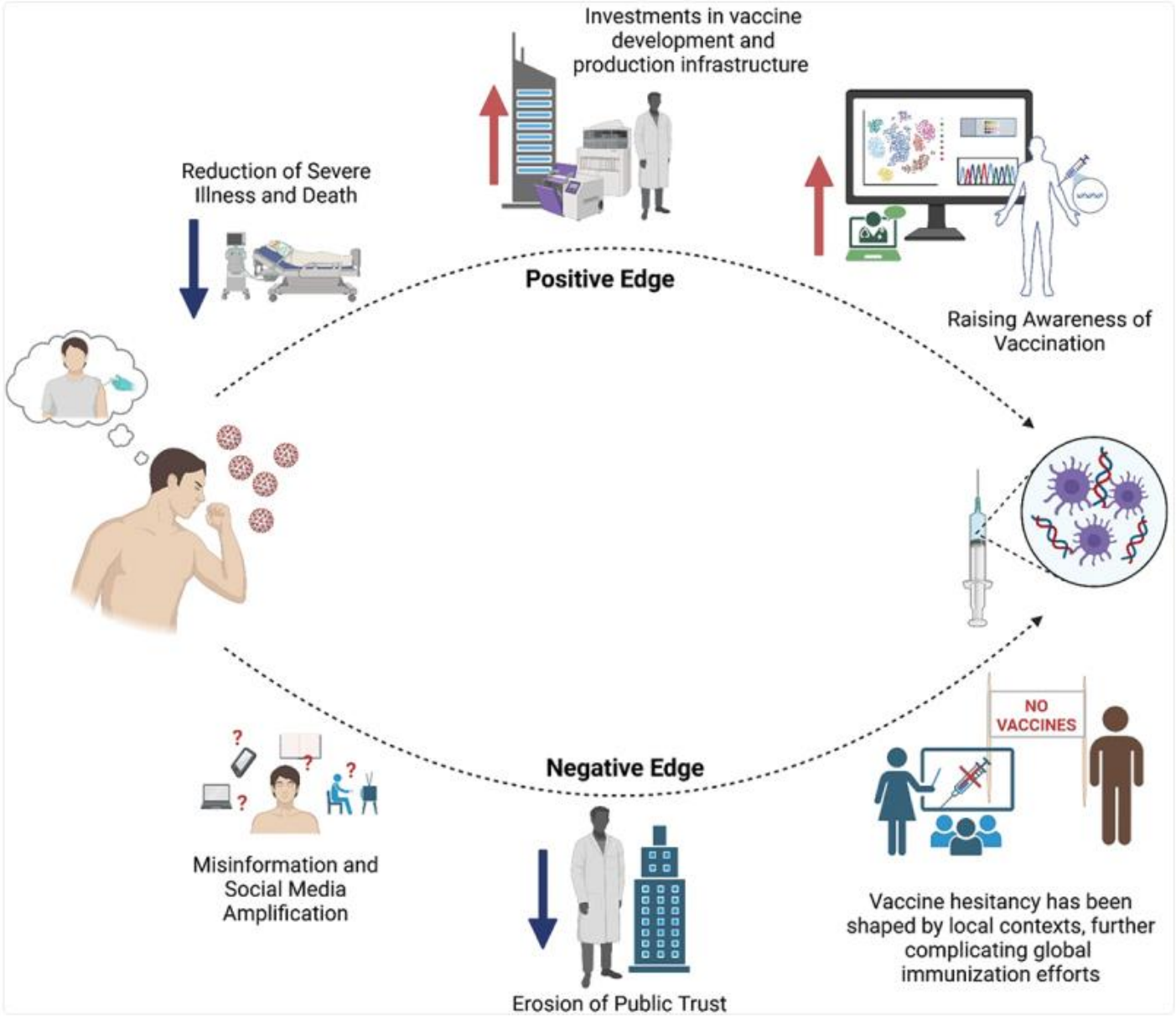


Hanguehard, R., Fonteneau, L., Bonnet, N., Levy-Bruhl, D., Parent-du-Châtelet, I., & Vaux, S. (2026). Decreases in influenza vaccination coverage among nursing home healthcare workers and in measures to promote influenza vaccination, France, 2007/08 to 2024/25. *Eurosurveillance*, *31*(12), 2500628.

L'impact de la pandémie de Covid-19



Siani, A., & Tranter, A. (2022). Is vaccine confidence an unexpected victim of the COVID-19 pandemic?, *Vaccine*, *40*(50), 7262-7269.



Positive and negative edge of COVID-19 vaccination.

Ortiz-Prado, et al. (2025). Pandemic paradox: How the COVID-19 crisis transformed vaccine hesitancy into a two-edged sword. *Human Vaccines & Immunotherapeutics*, *21*(1), 2543167.

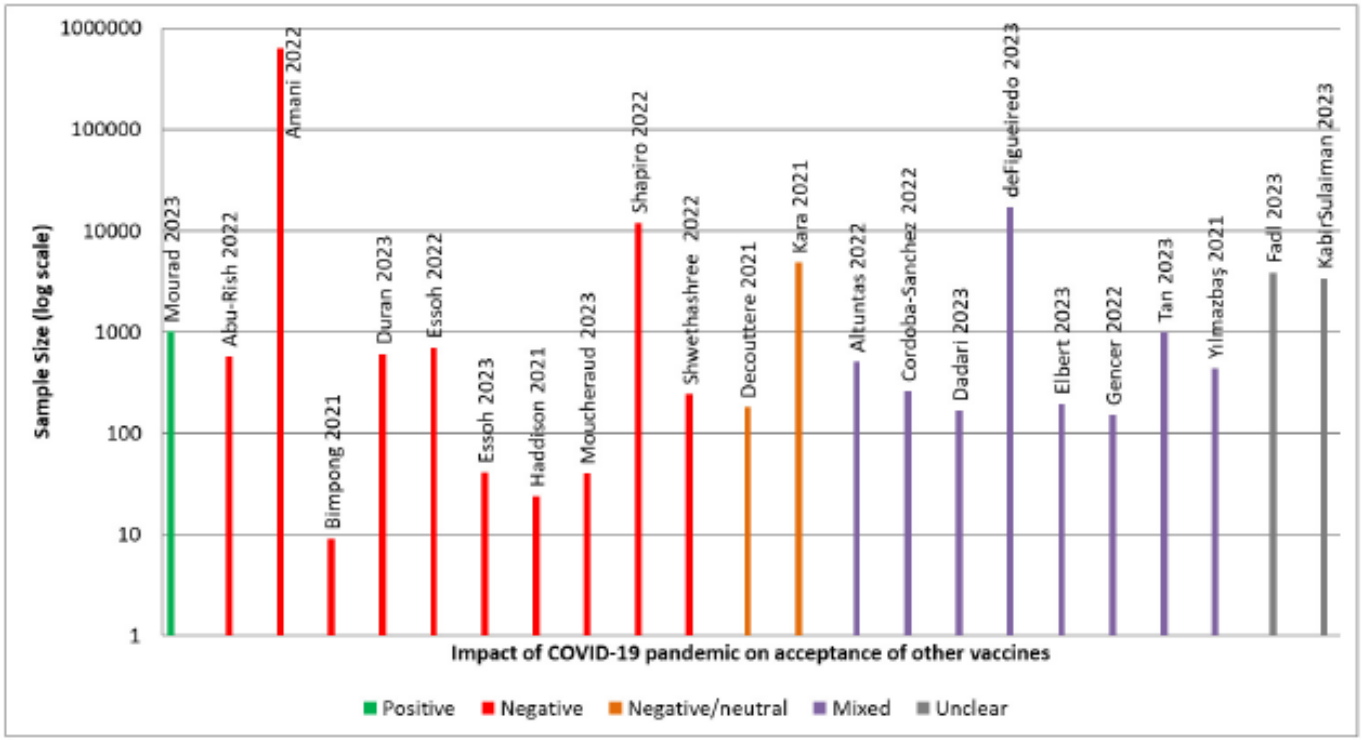
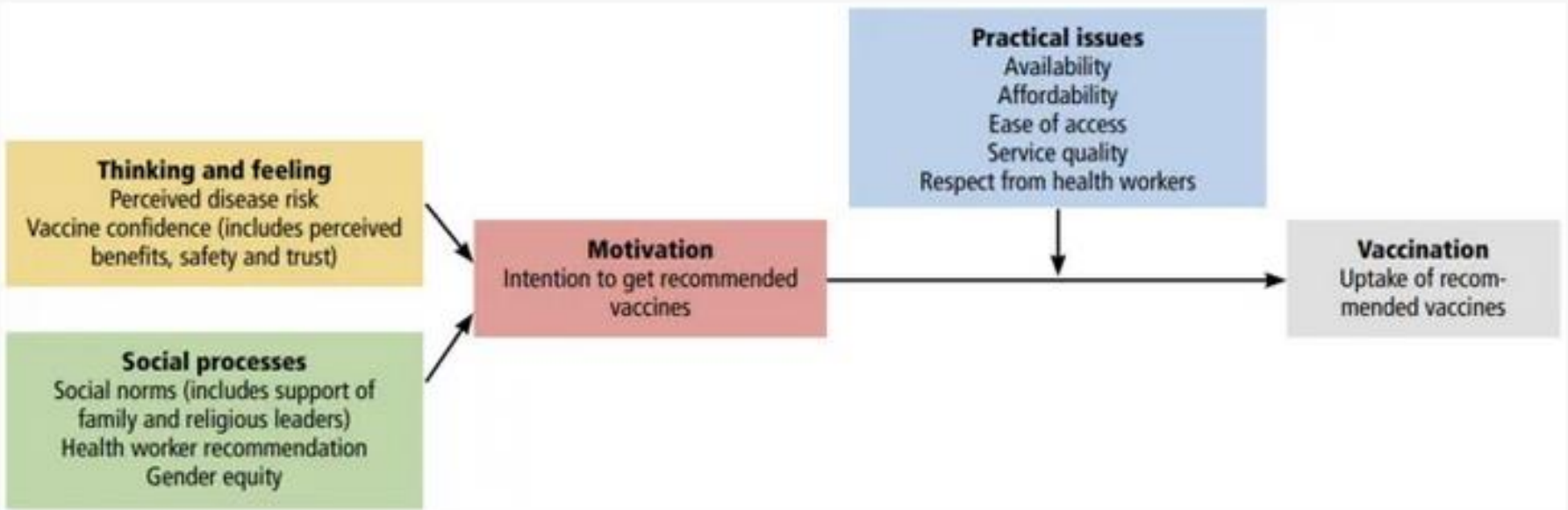


FIGURE 3
Overall direction of study findings on vaccine acceptance. Positive: increase in measures of vaccine acceptance; negative: decrease in measures of acceptance; mixed: if both positive and negative effects were reported; neutral: no overall change reported or not measured; unclear: results were ambiguous or insufficient to support classification.

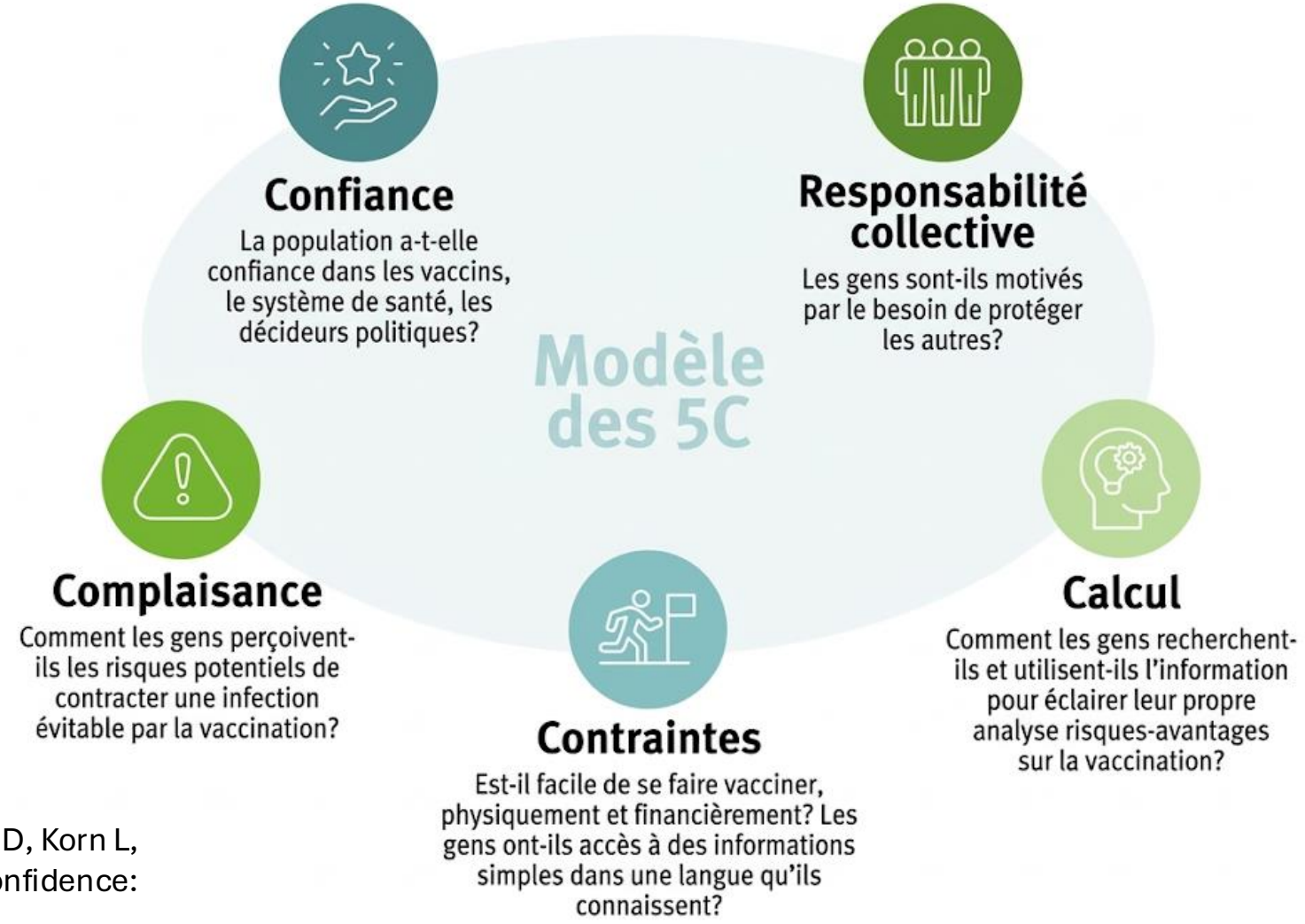
Lihemo, G., Blunt, M., Dadari, I., Underwood, T., Toasa, A. E. O., Velias, A., ... & Singh, S. (2026). The impact of COVID-19 on general vaccine acceptance in low-and middle-income countries: a systematic review. *Frontiers in Public Health*, *14*, 1764389.

C) Comprendre l’hésitation vaccinale



Behavioural and social drivers framework. Reproduced from Understanding the behavioural and social drivers of vaccine uptake WHO position paper – May 2022 (4) under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 IGO license: **https://creativecommons.org/licenses/by-nc-sa/3.0/igo/deed.en**.

Les déterminants psychosociaux des comportements de vaccination



Betsch C, Schmid P, Heinemeier D, Korn L, Holtmann C, Böhm R. Beyond confidence: Development of a measure assessing the 5C psychological antecedents of vaccination. PLoS One. 2018;13(12):e0208601.

Confiance

Confiance dans la sécurité et l'efficacité des vaccins, les autorités de santé et les professionnels qui recommandent et développent les vaccins.

Responsabilité Collective

Volonté de protéger les autres et de contribuer à l'élimination des maladies infectieuses.

Complaisance

Attitude de négligence vis-à-vis de la vaccination due à une faible perception du risque des maladies infectieuses.

7 Cs

Complotisme

Pensée complotiste et croyance en de fausses informations liées à la vaccination.

Contraintes

Obstacles structurels ou psychologiques dans la vie quotidienne rendant la vaccination difficile ou coûteuse.

Calcul

Degré selon lequel les coûts et bénéfices personnels de la vaccination sont évalués.

Conformité

Soutien à la surveillance sociale et aux sanctions pour les personnes non vaccinées.

Geiger M, Rees F, Lilleholt L, Santana AP, Zettler I, Wilhelm O, et al. Measuring the 7Cs of vaccination readiness. Eur J Psychol Assess. 2022;38(4):261-9

7 Cs*

Confiance dans le vaccin

Confiance dans la sécurité et l'efficacité des vaccins.

Responsabilité Collective

Volonté de protéger les autres et de contribuer à l'élimination des maladies infectieuses.

Complaisance

Attitude de négligence vis-à-vis de la vaccination due à une faible perception du risque des maladies infectieuses.

Confiance dans le système

Confiance dans les autorités de santé et les professionnels qui recommandent et développent les vaccins.

Contraintes

Obstacles structurels ou psychologiques dans la vie quotidienne rendant la vaccination difficile ou coûteuse.

Calcul

Degré selon lequel les coûts et bénéfices personnels de la vaccination sont évalués.

Conformité sociale

La norme sociale envers la vaccination.

Oudin Doglioni, D., Gagneux-Brunon, A., Gauchet, A., Bruel, S., Olivier, C., Pellissier, G., ... & Mueller, J. E. (2023). Psychometric validation of a 7C-model of antecedents of vaccine acceptance among healthcare workers, parents and adolescents in France. *Scientific Reports*, *13*(1), 19895.

Variable (7C)	Item
Calcul	« Je pense que la vaccination contre la COVID-19 présente plus d'avantages que de risques pour moi. »
Responsabilité collective	« Se faire vacciner est aussi une action collective pour stopper la crise associée à l'épidémie. »
Confiance dans le système	« Si le gouvernement m'encourage à me faire vacciner, c'est... »
Manque de confiance dans le vaccin	« J'ai peur de développer un effet secondaire grave après une vaccination contre la COVID-19. »
Conformisme social	« Au sein de votre famille et de vos amis, comment décririez-vous l'opinion majoritaire sur la vaccination contre la COVID-19 ? »
Contraintes	« En pratique, il est difficile pour moi d'obtenir un rendez-vous pour me faire vacciner. »
Faible complaisance	« J'ai peur de développer une forme grave de la COVID-19. »

Lièvre, G., Sicsic, J., Galmiche, S., Charmet, T., Fontanet, A., & Mueller, J. E. (2024). Are the 7C psychological antecedents associated with COVID-19 vaccine behaviours beyond intentions? A cross-sectional study on at-least-one-dose and up-to-date vaccination status, and uptake speed among adults in France. *Vaccine*, *42*(14), 3288-3299.

Variable (7C)	OR 95% CI ≥ 1 dose vaccin Covid-19 (plus favourable vs. moins favourable)
Calcul (pos. balance bénéfice/risque)	10.29 [7.53; 14.05]
Responsabilité collective	14.44 [10.72; 19.54]
Confiance dans le système	8.94 [6.51; 12.27]
Confiance dans le vaccin	3.70 [2.95; 4.64]
Conformisme social (pos. normes)	0.69 [0.52; 0.93]
Contraintes	0.06 [0.04; 0.10]
Faible complaisance (Risque Covid +severe)	1.87 [1.49; 2.34]

Lièvre, G., Sicsic, J., Galmiche, S., Charmet, T., Fontanet, A., & Mueller, J. E. (2024). Are the 7C psychological antecedents associated with COVID-19 vaccine behaviours beyond intentions? A cross-sectional study on at-least-one-dose and up-to-date vaccination status, and uptake speed among adults in France. *Vaccine*, *42*(14), 3288-3299.

Mesurer les déterminants psychosociaux des comportements de vaccination chez les professionnels de santé - Pro-VC-BE

	PRO-VC-Be (Verger et al. 2022)
La perception des risques liés aux vaccins	1. Les vaccins ne présentent pas des risques graves.
Complaisance	2. Aujourd'hui, certains vaccins recommandés par les autorités sont inutiles, car les maladies qu'ils préviennent sont bégnines.
Perception de la balance bénéfices/risques	3. Les bénéfices des vaccins sont largement supérieurs à ses risques éventuels.
Importance perçue de la responsabilité collective	4. Je recommande les vaccins du calendrier vaccinal à mes patients parce que c'est essentiel pour contribuer à la protection de la population (immunité de groupe).
La confiance dans divers acteurs et institutions	5. J'ai confiance dans le Ministère de la Santé pour s'assurer de la sécurité des vaccins.

Mesurer les déterminants psychosociaux des comportements de vaccination chez les professionnels de santé - Pro-VC-BE

Engagement à la vaccination	6. Je m'investis pour faire en sorte que mes patients soient vaccinés.
Auto-efficacité	7. Je me sens suffisamment formé(e) sur la façon d'aborder les vaccins avec les patients hésitants.
Ouverture aux patients	8. J'informe mes patients des bénéfices et des risques des vaccins mais je les laisse prendre leur décision sans chercher à les influencer.
Contraintes perçues	9. Le coût de certains vaccins est un problème pour certains patients et peut me retenir de leur prescrire.
La confiance réticente	10. Je recommande les vaccins du calendrier officiel même si j'estime que les objectifs de la politique de vaccination ne sont pas suffisamment clairs.

Garrison, A. et al. (2022). Measuring psychosocial determinants of vaccination behavior in healthcare professionals: validation of the Pro-VC-Be short-form questionnaire. Expert Review of Vaccines. doi: 10.1080/14760584.2022.2108800

Table 4. Associations between vaccination behaviors and I-Pro-VC-Be factors among HCPs: results from multiple modified Poisson regressions with robust standard errors[a] ($n = 2,748$).

	Long-form	Short-form[b]
	aRR [95% CI]	
I-Pro-VC-Be factors		
Self-reported near-systematic (>90%) vaccine recommendation or intent-to-recommend		
Safety perception > mean (ref. No)	**1.79 [1.47;2.17]**	**1.78 [1.47;2.14]**
Complacency > mean (ref. No)	**0.50 [0.42;0.60]**	**0.53 [0.45;0.62]**
Benefit/risk balance > mean (ref. No)		**2.74 [2.11;3.56]**
Collective respo		**1.82 [1.54;2.15]**
Commitment to		**2.48 [2.13;2.90]**
Self-efficacy > mean (ref. No)	**1.60 [1.44;1.77]**	**1.49 [1.36;1.63]**
Trust in authorities > mean (ref. No)	**1.71 [1.48;1.97]**	**1.80 [1.57;2.06]**
Openness to patients > mean (ref. No)	**0.90 [0.81;0.98]**	0.93 [0.85;1.02]
Reluctant trust> mean (ref. No)	**0.78 [0.71;0.86]**	**0.77 [0.70;0.85]**
Perceived constraints > mean (ref. No)	**0.89 [0.82;0.98]**	1.00 [0.90;1.11]
Self-vaccination against influenza: 3 times over the past 3 years (score = 3/3)		
Safety perception > mean (ref. No)	**1.27 [1.20;1.35]**	**1.23 [1.16;1.30]**
Complacency >		**0.80 [0.76;0.84]**
Benefit/risk bala		**1.23 [1.15;1.32]**
Collective responsibility > mean (ref. No)		**1.24 [1.18;1.31]**
Commitment to vaccination > mean (ref. No)	**1.17 [1.12;1.22]**	**1.21 [1.15;1.27]**
Self-efficacy > mean (ref. No)	**1.17 [1.12;1.21]**	**1.14 [1.09;1.18]**
Trust in authorities > mean (ref. No)	**1.16 [1.11;1.22]**	**1.17 [1.12;1.23]**
Openness to patients > mean (ref. No)	**0.92 [0.88;0.96]**	**0.94 [0.90;0.98]**
Reluctant trust> mean (ref. No)	**0.90 [0.86;0.94]**	**0.92 [0.88;0.96]**
Perceived constraints > mean (ref. No)	0.98 [0.94;1.02]	1.01 [0.96;1.05]
Self-vaccination against COVID-19: fully vaccinated + booster (score = 4/4)		
Safety perception > mean (ref. No)		**1.08 [1.05;1.12]**
Complacency >		**0.94 [0.92;0.97]**
Benefit/risk bala		**1.08 [1.05;1.12]**
Collective responsibility > mean (ref. No)	**1.04 [1.02;1.06]**	**1.07 [1.05;1.10]**
Commitment to vaccination > mean (ref. No)	**1.04 [1.02;1.06]**	**1.08 [1.05;1.10]**
Self-efficacy > mean (ref. No)	1.02 [1.00;1.04]	1.01 [0.99;1.03]
Trust in authorities > mean (ref. No)	**1.05 [1.03;1.08]**	**1.06 [1.03;1.08]**
Openness to patients > mean (ref. No)	**0.97 [0.95;0.99]**	0.98 [0.97;1.00]
Reluctant trust> mean (ref. No)	**0.96 [0.94;0.98]**	**0.95 [0.93;0.97]**
Perceived constraints > mean (ref. No)	0.99 [0.97;1.00]	0.99 [0.97;1.01]

Abbreviations. I-Pro-VC-Be: International Professionals' Vaccine Confidence and Behaviors; HCPs: healthcare professionals; aRR [95% CI]: adjusted relative risk and 95% confidence interval.

[a]All models were run separately and adjusted for country, gender, age, and profession. Explanatory variables (I-Pro-VC-Be factors) were dichotomized at the sample mean. Alpha risk = 0.05; statistically significant results in bold.

[b]Items included in the short-form in Table 5.

Recommendation de la vaccination

Vaccination antigrippale

Vaccination Covid-19

Garrison, A., Karlsson, L., Fressard, L., Fasce, A., Rodrigues, F., Schmid, P., ... & Verger, P. (2023). International adaptation and validation of the Pro-VC-Be: measuring the psychosocial determinants of vaccine confidence in healthcare professionals in European countries. *Expert Review of Vaccines*, *22*(1), 726-737.

Facteurs prédictifs de la vaccination antigrippale chez les professionnels de la santé

Une **revue systématique** (n=25 études) a identifié 2 raisons majeures au manque de couverture vaccinale chez les **professionnels de santé:**

- Idées reçues ou manque de connaissances sur la grippe.
- Manque d'accès pratique au vaccin.

Raisons de l'acceptation du vaccin : l'autoprotection est de loin le facteur le plus important dans toutes les études, sauf deux.

Facteurs prédictifs de la vaccination contre la grippe : antécédents de vaccination, confiance en l'efficacité du vaccin, âge plus avancé

Hollmeyer, H. G., Hayden, F., Poland, G., & Buchholz, U. (2009). Influenza vaccination of health care workers in hospitals—a review of studies on attitudes and predictors. *Vaccine*, *27*(30), 3935-3944.

Raisons auto-déclarées de non-acceptation

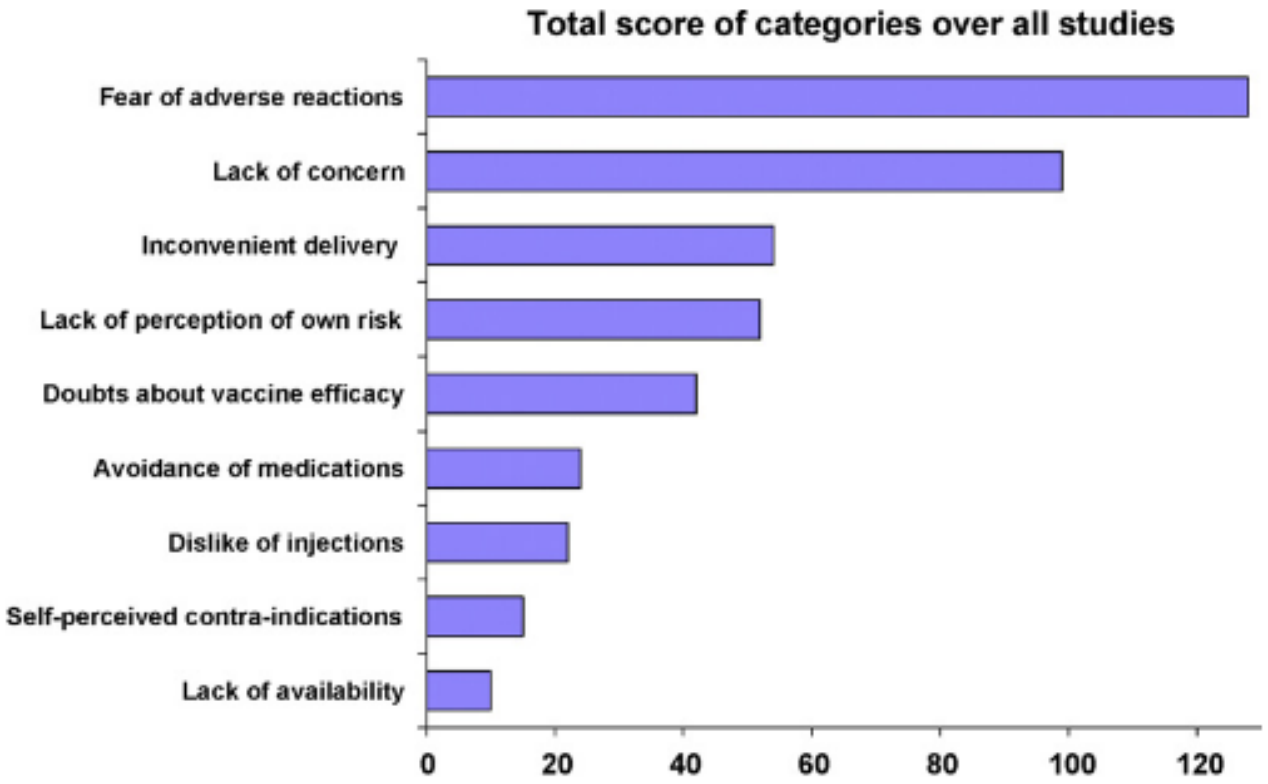


Fig. 1. Overview of categories of self-reported reasons for non-receipt of influenza vaccination among HCW, as reported in different studies [22,33,36–54]. Displayed are the added scores for each category of reasons given by respondents across all studies. For details about the calculation of scores please see Section 2.

Raisons auto-déclarées d’ acceptation

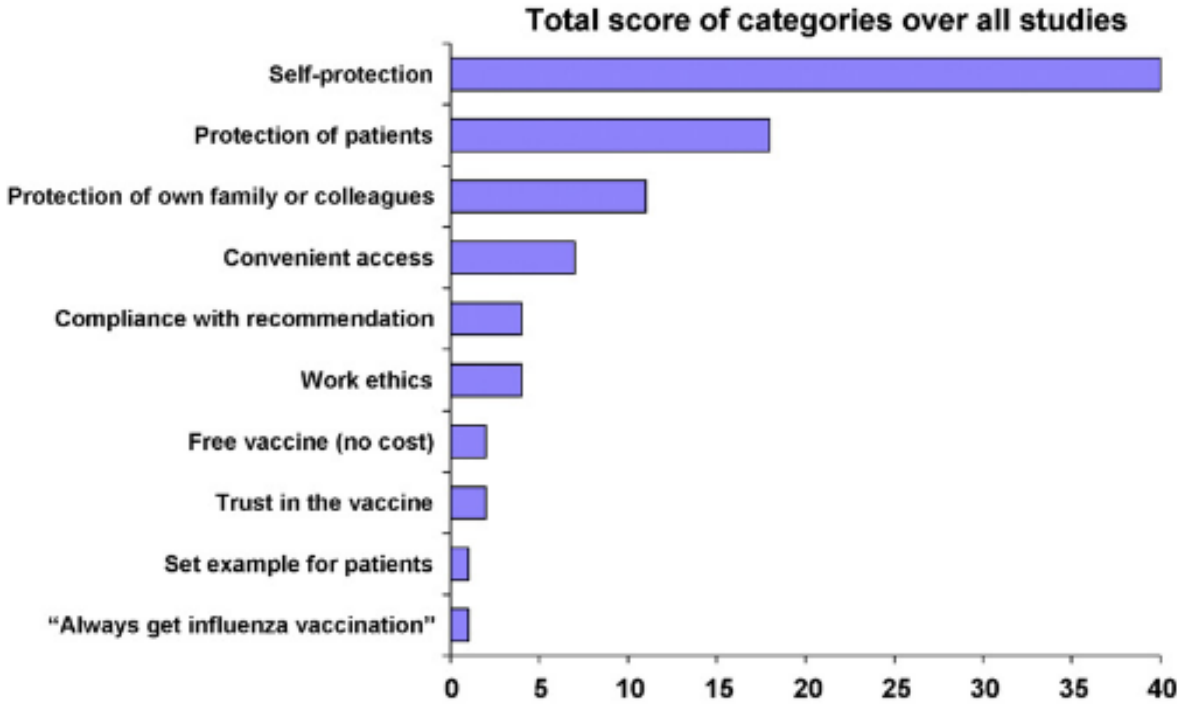


Fig. 2. Overview of categories of self-reported reasons for influenza vaccination among HCW, as reported in different studies. Displayed are the added scores for each category of reasons that were given by respondents across all studies. For details about the calculation of scores please see Section 2.

L’insatisfaction au travail et l’hésitation vaccinale

ELSEVIER

International Journal of Nursing Studies

Volume 161, January 2025, 104935

Dissatisfaction with working conditions associated with lower vaccine confidence, commitment and behaviors among nurses: A large scale cross-sectional survey in France

Anaïs Le Breton [a], Hugo Touzet [a], Lisa Fressard [b], Patrick Chamboredon [c], Patrick Peretti-Watel [b] [d], Jeremy Ward [a], Pierre Verger [b] [d]

Show more

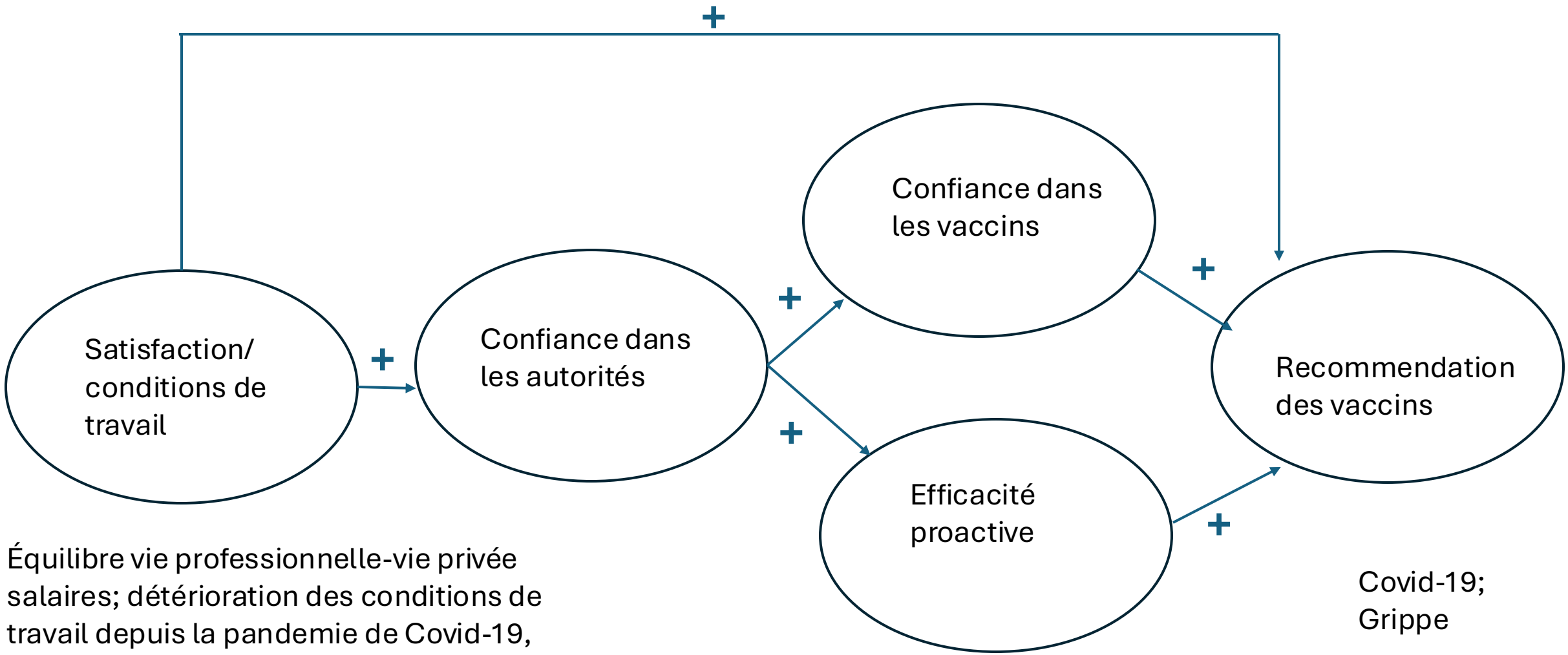
+ Add to Mendeley Share Cite

https://doi.org/10.1016/j.ijnurstu.2024.104935 ↗

Get rights and content ↗

Full text access

L’insatisfaction au travail et l’hésitation vaccinale



Équilibre vie professionnelle-vie privée salaires; détérioration des conditions de travail depuis la pandemie de Covid-19, …

Covid-19; Grippe

D) Faire face à l’hésitation vaccinale

L’intervention la plus efficace (en population Générale)

Un professionnel de santé qui recommande le vaccin

Brewer, Noel T. "What works to increase vaccination uptake." *Academic pediatrics* 21.4 (2021): S9-S16.

Le rôle des professionnels de santé

Dans l'acceptabilité du vaccin contre la grippe H1N1 aux Etats-Unis (1976)

MEDICAL CARE
June 1979, Vol. XVII, No. 6

Psychosocial Determinants of Immunization Behavior in a Swine Influenza Campaign

K. MICHAEL CUMMINGS, M.P.H.,* ALAN M. JETTE, R.P.T., M.P.H.,*
BRUCE M. BROCK, M.P.H.,* AND DON P. HAEFNER, PH.D.†

A prospective design was used to study factors which predisposed individuals to receive vaccination in response to the anticipated outbreak of swine influenza in the fall and winter of 1976. Data were obtained from a telephone survey of 286 adults in Oakland County, Michigan. Predictor variables included Health Belief Model (HBM) variables as well as measures of behavioral intention, social influence, physician's advice, socioeconomic status and past experience with flu shots. In multivariate analysis, over 40 per cent of the variance in inoculation behavior was explained by the predictors used. Path analysis revealed that most of the HBM variables' influence on behavior was mediated through behavioral intention. While behavioral intention was an important predictor of inoculation behavior, other psychosocial factors played a significant role in explaining variance in the dependent variable.

THE QUESTION of why some people use health services while others do not, is one which has continually perplexed health professionals. In approaching an answer to this question, a number of research efforts have been undertaken to understand the effects of personal, psychosocial, and environmental causes on health and illness behavior.[1-3,5,9,14,19,27] One particular formulation by Hochbaum, Rosenstock, and others, the Health Belief Model, has been the focus of considerable attention and direct study by behavioral scientists and was employed in this investigation.

The Health Belief Model (HBM) comprises a set of variables that include the individual's perceptions of: 1) vulnerability to a disease, 2) severity of the disease, 3) paths of action that can be taken to prevent the disease, and 4) benefits versus costs of the potential action. The model is a blend of other social psychological theories, particularly value-expectancy theory. As with most value-expectancy approaches, the HBM suggests two common determinants of impulse to action: 1) "valence," the value placed by an individual on a particular outcome or goal and 2) "subjective probability," the individu-

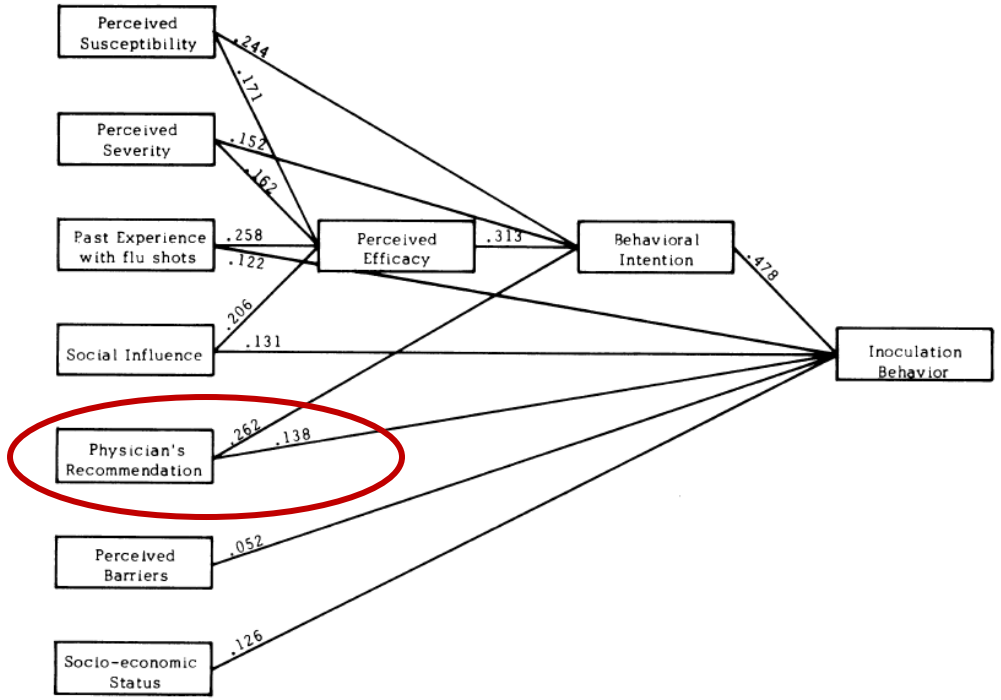


FIG. 1. Path diagram of the standardized direct and indirect effects of selected psychosocial variables on inoculation behavior.

L’impact des interventions

Table. Impact of Interventions to Increase Vaccination Uptake

	Likely impact
Intervention targets what people think and feel	
Messages that increase disease risk appraisals	○
Education campaigns that increase confidence	○
Decision aids	○
Motivational interviewing	○
Intervention targets social processes	
Messages that change altruism or free-riding beliefs	○
Descriptive norm messages	◎
Social network interventions that build on contagion	◎
Healthcare provider recommendations	●
Intervention targets direct behavior change	
Reminders and recalls	◎
Presumptive healthcare provider recommendations	●
Onsite vaccination	●
Default appointments	●
Incentives	●
School and work requirements (mandates)	●
Sanctions	●

Note. Likely impact ○= no or very small impact, ◎ = modest impact, ● = substantial impact

Brewer, Noel T. "What works to increase vaccination uptake." *Academic pediatrics* 21.4 (2021): S9-S16.

Le rôle des professionnels de santé

Dans l'acceptabilité de la vaccination anti-PVH

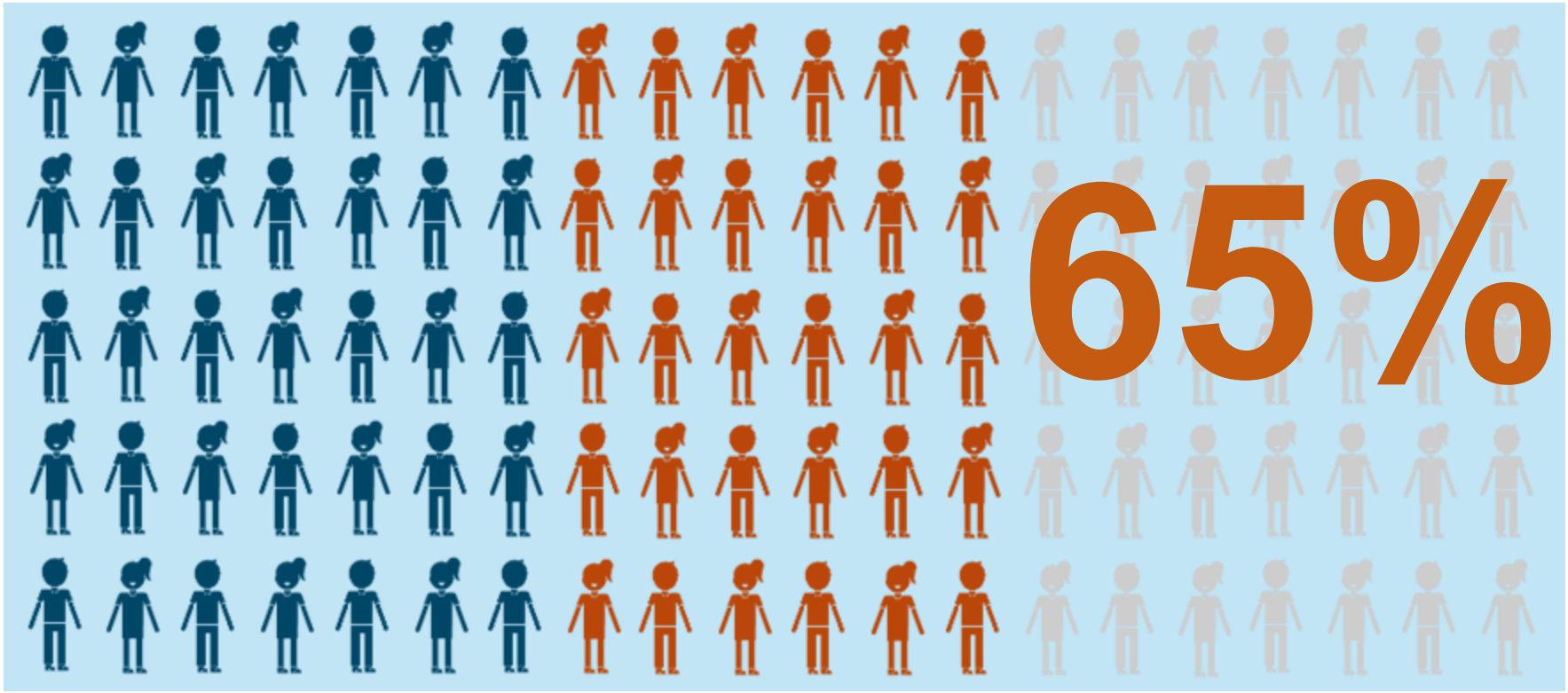
Pas de recommandation

National Immunization Survey – Teen, 2013. Lindley et al., 2016, *Hum Vacc & Therap*

Le rôle des professionnels de santé

Dans l'acceptabilité de la vaccination anti-PVH

Avec recommandation



National Immunization Survey – Teen, 2013. Lindley et al., 2016, *Hum Vacc & Therap*

Le rôle des professionnels de santé

Quelle méthode pour motiver les patients à se faire vacciner ?

L'approche réflexive (motivation intrinsèque)

Entretien motivationnel

Gagneur *et al. BMC Public Health* (2018) 18:811
https://doi.org/10.1186/s12889-018-5724-y

BMC Public Health

RESEARCH ARTICLE Open Access

A postpartum vaccination promotion intervention using motivational interviewing techniques improves short-term vaccine coverage: PromoVac study

Arnaud Gagneur[1,2*], Thomas Lemaître[2], Virginie Gosselin[2], Anne Farrands[2], Nathalie Carrier[2], Geneviève Petit[3], Louis Valiquette[2,4] and Philippe De Wals[5]

Abstract

Background: Due to the increasing number of vaccine-hesitant parents, new effective immunization promotion strategies need to be developed to improve the vaccine coverage (VC) of infants. This study aimed to assess the impact of an educational strategy of vaccination promotion based on motivational interviewing (MI) techniques targeting parents and delivered at the maternity ward, for the VC of infants at 3, 5, and 7 months of age.

Methods: An individual educational information session, administered using MI techniques, regarding immunization of infants aged 2, 4, and 6 months was (experimental group) or was not (control group) proposed to parents during the postpartum stay at the maternity ward. Immunization data were obtained through the Eastern Townships Public Health registry for infants at 3, 5, and 7 months of age. Absolute VC increases at 3, 5, and 7 months in the experimental group were calculated and the relative risks with the respective 95% confidence intervals were computed using univariate logistic regression with the generalized estimating equations (GEE) procedure. Multivariate regression using GEE was used to adjust for confounding variables.

Results: In the experimental and control groups, 1140 and 1249 newborns were included, respectively. A significant increase in VC of 3.2, 4.9, and 7.3% was observed at 3, 5, and 7 months of age ($P < 0.05$), respectively. The adjusted relative risk of the intervention's impact on vaccination status at 7 months of age was 1.08 (95% confidence interval: 1.03–1.14) ($P = 0.002$).

Conclusions: An educational strategy using MI techniques delivered at the maternity ward may be effective in increasing VC of infants at ages 3, 5, and 7 months. MI could be an effective tool to overcome vaccine hesitancy.

Keywords: Motivational interviewing, Vaccine coverage, Infants, Health promotion intervention, Maternity wards

L'approche prescriptive (motivation extrinsèque)

Intervention brève

Effect of a Text Messaging Intervention on Influenza Vaccination in an Urban, Low-Income Pediatric and Adolescent Population

A Randomized Controlled Trial

Melissa S. Stockwell, MD, MPH
Elyse Olshen Kharbanda, MD, MPH
Raquel Andres Martinez, PhD
Celibell Y. Vargas, MD
David K. Vawdrey, PhD
Stewin Camargo, BS

Context Influenza infection results in substantial costs, morbidity, and mortality. Vaccination against influenza is particularly important in children and adolescents who are a significant source of transmission to other high-risk populations, yet pediatric and adolescent vaccine coverage remains low. Traditional vaccine reminders have had a limited effect on low-income populations; however, text messaging is a novel, scalable approach to promote influenza vaccination.

Objective To evaluate targeted text message reminders for low-income, urban parents to promote receipt of influenza vaccination among children and adolescents.

Design, Setting, and Participants Randomized controlled trial of 9213 children and adolescents aged 6 months to 18 years receiving care at 4 community-based clinics in the United States during the 2010-2011 influenza season. Of the 9213 children and adolescents, 7574 had not received influenza vaccine prior to the intervention start date and were included in the primary analysis.

Intervention Parents of children assigned to the intervention received up to 5 weekly immunization registry–linked text messages providing educational information and instructions regarding Saturday clinics. Both the intervention and usual care groups received the usual care, an automated telephone reminder, and access to informational flyers posted at the study sites.

Main Outcome Measures Receipt of an influenza vaccine dose recorded in the immunization registry via an electronic health record by March 31, 2011. Receipt was secondarily assessed at an earlier fall review date prior to typical widespread influenza activity.

Results Study children and adolescents were primarily minority, 88% were publicly insured, and 58% were from Spanish-speaking families. As of March 31, 2011, a higher proportion of children and adolescents in the intervention group (43.6%; n = 1653) compared with the usual care group (39.9%; n = 1509) had received influenza vaccine (difference, 3.7% [95% CI, 1.5%-5.9%]; relative rate ratio [RRR], 1.09 [95% CI, 1.04-1.15]; $P = .001$). At the fall review date, 27.1% (n = 1026) of the intervention group compared with 22.8% (n = 864) of the usual care group had received influenza vaccine (difference, 4.3% [95% CI, 2.3%-6.3%]; RRR, 1.19 [95% CI, 1.10-1.28]; $P < .001$).

Conclusions Among children and adolescents in a low-income, urban population, a text messaging intervention compared with usual care was associated with an increased rate of influenza vaccination. However, the overall influenza vaccination rate remained low.

Trial Registration clinicaltrials.gov Identifier: NCT01146912

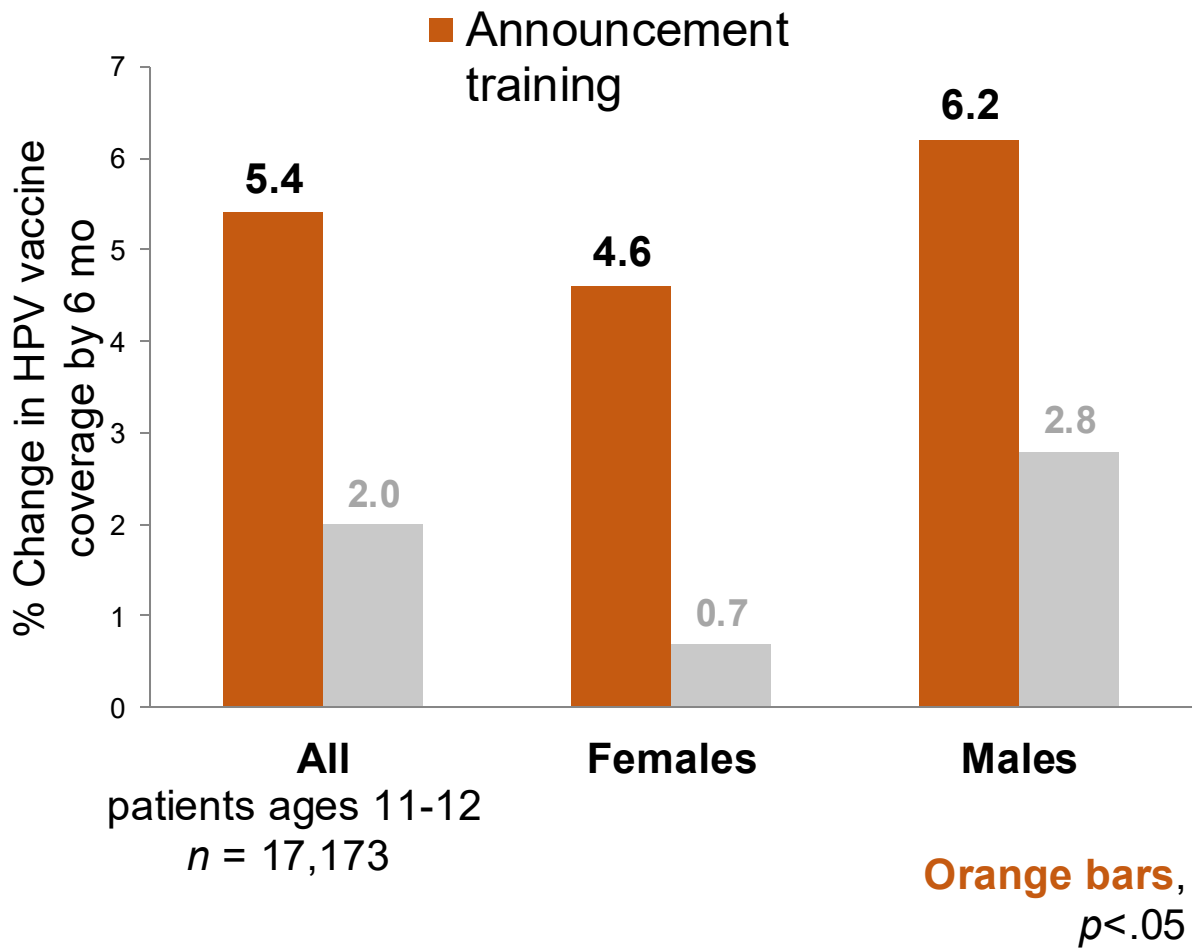
JAMA. 2012;307(16):1702-1708 www.jama.com

For editorial comment see p 1748.

Author Video Interview available at www.jama.com.

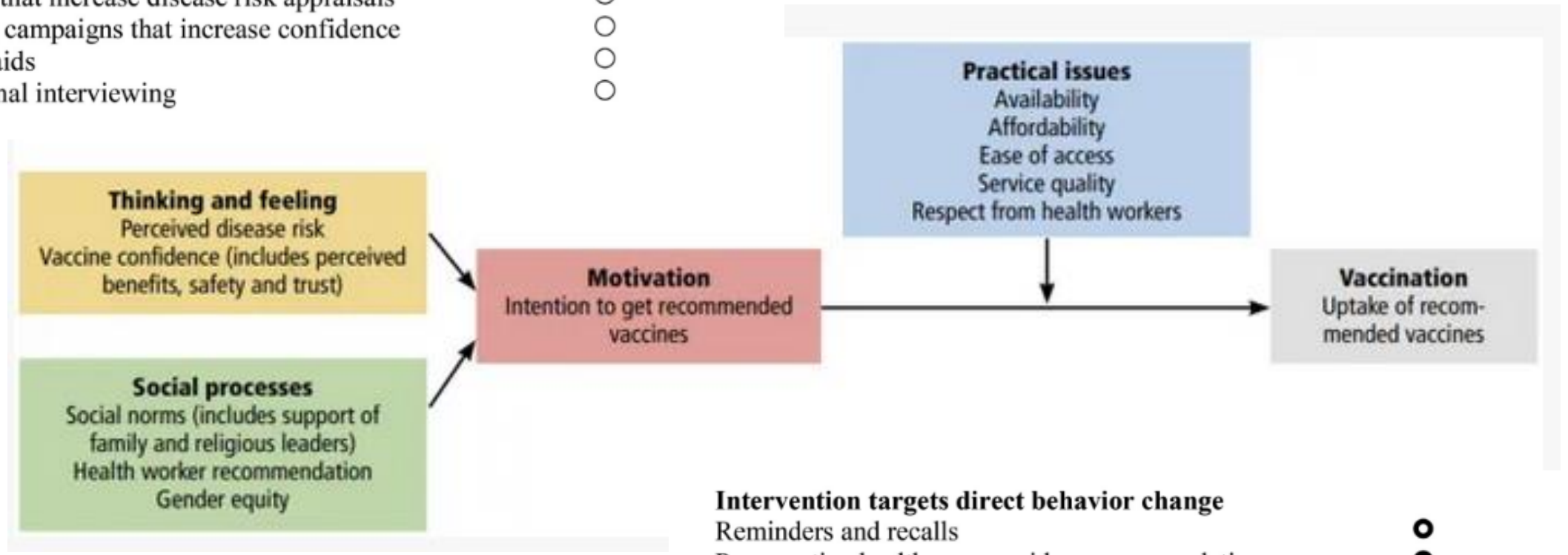
Author Affiliations: Departments of Pediatrics (Drs Stockwell, Martinez, and Vargas and Mr Camargo), Biomedical Informatics (Dr Vawdrey), and Population and Family Health, Mailman School of Public Health (Drs Stockwell and Martinez), Columbia University, New York, New York; New York-Presbyterian Hospital, New York, New York (Drs Stockwell and Vawdrey); and HealthPartners Research Foundation, Minneapolis, Minnesota (Dr Kharbanda). **Corresponding Author:** Melissa S. Stockwell, MD, MPH, Columbia University, 622 W 168th St, VC 402, New York, NY 10032 (mstockwell@columbia.edu).

Accroitre les opportunités à la vaccination



Brewer, et al., 2017, *Pediatrics*

	Likely impact
Intervention targets what people think and feel	
Messages that increase disease risk appraisals	○
Education campaigns that increase confidence	○
Decision aids	○
Motivational interviewing	○

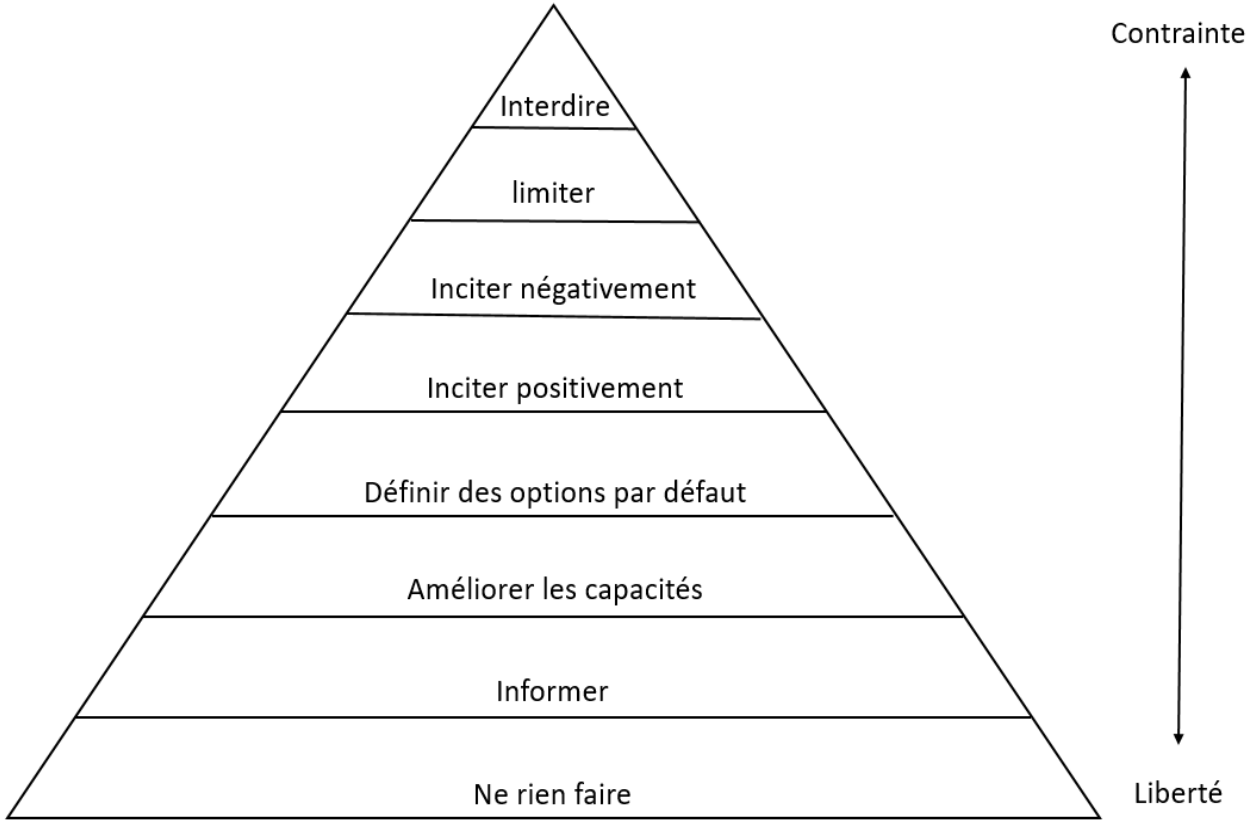


Intervention targets social processes	
Messages that change altruism or free-riding beliefs	○
Descriptive norm messages	◎
Social network interventions that build on contagion	◎
Healthcare provider recommendations	●

Intervention targets direct behavior change	
Reminders and recalls	◎
Presumptive healthcare provider recommendations	●
Onsite vaccination	●
Default appointments	●
Incentives	●
School and work requirements (mandates)	●
Sanctions	●

Note. Likely impact ○= no or very small impact, ◎ = modest impact, ● = substantial impact

Les interventions comportementales



Classification des interventions comportementales en fonction du niveau de contraintes sur les individus et les populations (adaptée du rapport “Public health: ethical issues” du Nuffield Council on Bioethics, 2007).

Les interventions comportementales

Vaccination obligatoire Declaration de refus

Limiter contact direct avec les patients

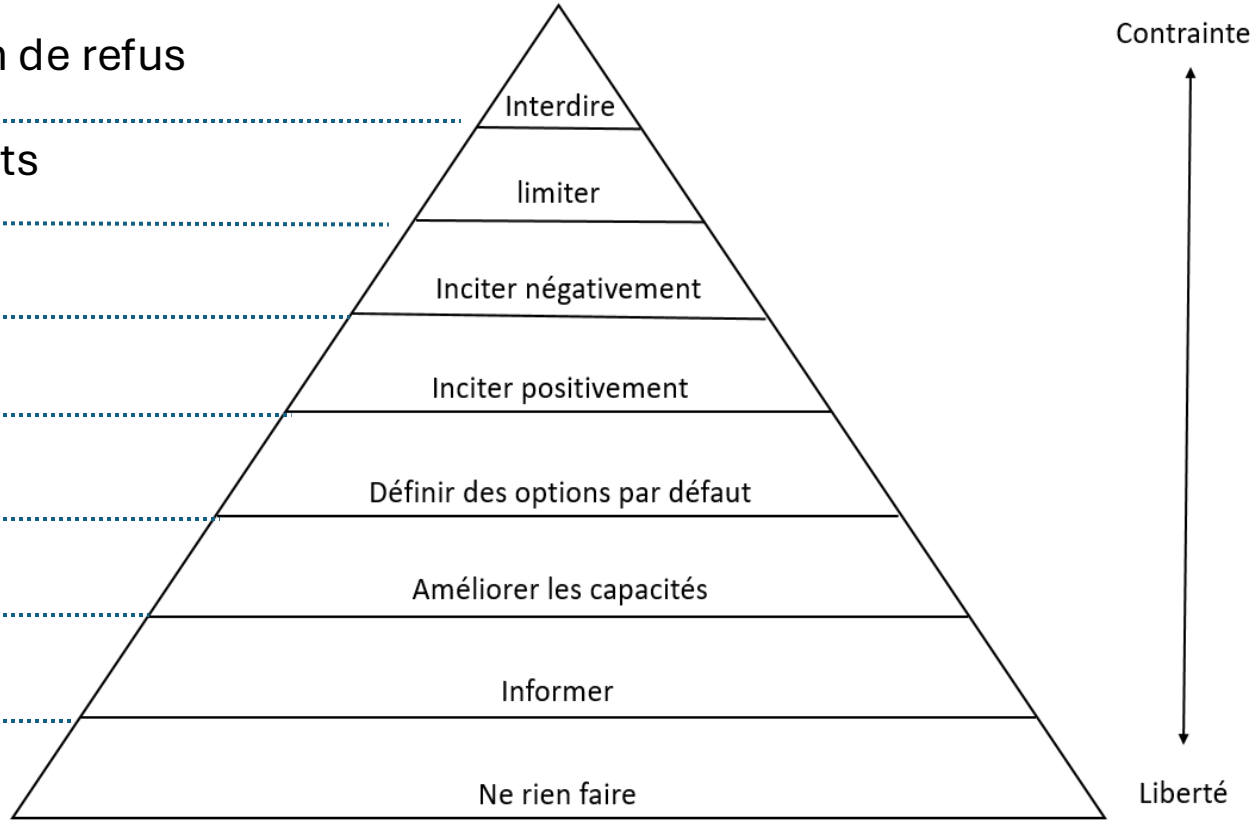
Port du masque obligatoire

Competitions entre départements

Rendez-vous preréservé

Formation, education (pre-bunking)

Affiches



Classification des interventions comportementales en fonction du niveau de contraintes sur les individus et les populations (adaptée du rapport “Public health: ethical issues” du Nuffield Council on Bioethics, 2007).

Taylor & Francis
Taylor & Francis Group

Human Vaccines & Immunotherapeutics

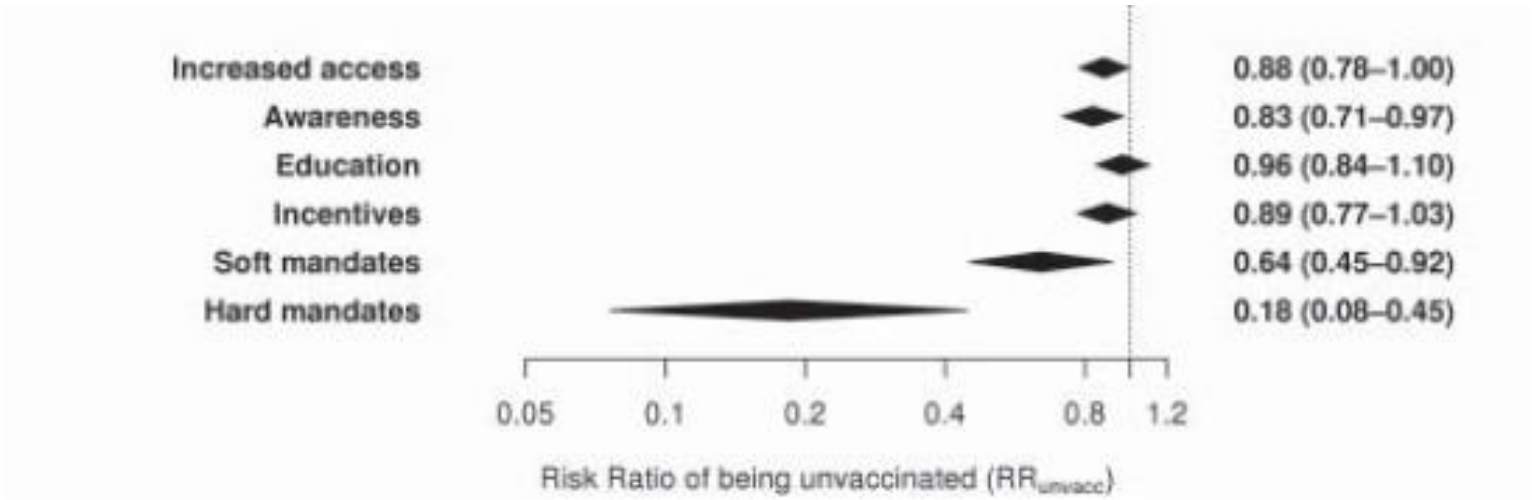
ISSN: 2164-5515 (Print) 2164-554X (Online) Journal homepage: www.tandfonline.com/journals/khvi20

Interventions to increase seasonal influenza vaccine coverage in healthcare workers: A systematic review and meta-regression analysis

Theodore Lytras, Frixos Kopsachilis, Elisavet Mouratidou, Dimitris Papamichail & Stefanos Bonovas

To cite this article: Theodore Lytras, Frixos Kopsachilis, Elisavet Mouratidou, Dimitris Papamichail & Stefanos Bonovas (2016) Interventions to increase seasonal influenza vaccine coverage in healthcare workers: A systematic review and meta-regression analysis, Human Vaccines & Immunotherapeutics, 12:3, 671-681, DOI: 10.1080/21645515.2015.1106656

Efficacité des interventions pour augmenter la vaccination antigrippale chez les professionnels de santé (meta-analysis n=46 études)



Attitudes des professionnels de la santé envers la vaccination obligatoire

"It should be compulsory…"	Yes % (*n*)	No % (*n*)	Not sure % (*n*)
for all medical, nursing and midwifery students to be vaccinated against COVID-19 (unless medically exempt)?	56.7% (1131)	28.3% (564)	15.0% (300)
for all patient-facing healthcare staff to be vaccinated against COVID-19 (unless medically exempt)?	59.0% (1177)	28.1% (560)	13.0% (258)
for all staff working in healthcare settings to be vaccinated against COVID-19 (unless medically exempt)?	54.2% (1082)	32.2% (643)	13.5% (270)
for all medical, nursing and midwifery students to be vaccinated against influenza (unless medically exempt)?	39.7% (745)	43.1% (810)	17.1% (321)
for all patient-facing healthcare staff to be vaccinated against influenza (unless medically exempt)?	41.5% (779)	42.6% (800)	15.8% (297)
for all staff working in healthcare settings to be vaccinated against influenza (unless medically exempt)?	38.0% (714)	46.6% (874)	15.4% (288)

Table 4. Attitude of HCWs to compulsory COVID-19 and influenza vaccination.

Drobniewski, F., Ashmi, M., Kusuma, D., Ahmad, R., Naumovas, D., Juozapaitė, D., … & Serwin, K. (2025). Determinants of vaccine hesitancy among healthcare workers in an international multicenter study within the EuCARE project. *Scientific Reports*, *15*(1), 31703.

Education (avec “gamification”)

RESEARCH ARTICLE

Evaluation of a ‘serious game’ on nursing student knowledge and uptake of influenza vaccination

Gary Mitchell*, Laurence Leonard, Gillian Carter, Olinda Santin, Christine Brown Wilson

School of Nursing and Midwifery, Queen’s University Belfast, Belfast, United Kingdom

* Gary.Mitchell@qub.ac.uk

Check for updates

Abstract

In the year preceding this study, 36.7% of the sample received an influenza vaccination. This increased to 47.8% after accessing to the game. Nursing students reported perceived improvements in their knowledge, intention to get the vaccination and intention to recommend the vaccination to their patients after playing the game. Nursing students who completed the 40-item pre- and post-knowledge questionnaire scored an average of 68.6% before receiving access to the game and 85.2% after. Using Paired T-Tests statistical analysis, it was determined that this 16.6% increase was highly statistically significant (P < 0.001).

https://www.flubeegame.fr/

Exploiter les norms sociales

Nat Commun. 2023 Jan 9;14:126. doi: 10.1038/s41467-022-35052-4

Providing normative information increases intentions to accept a COVID-19 vaccine

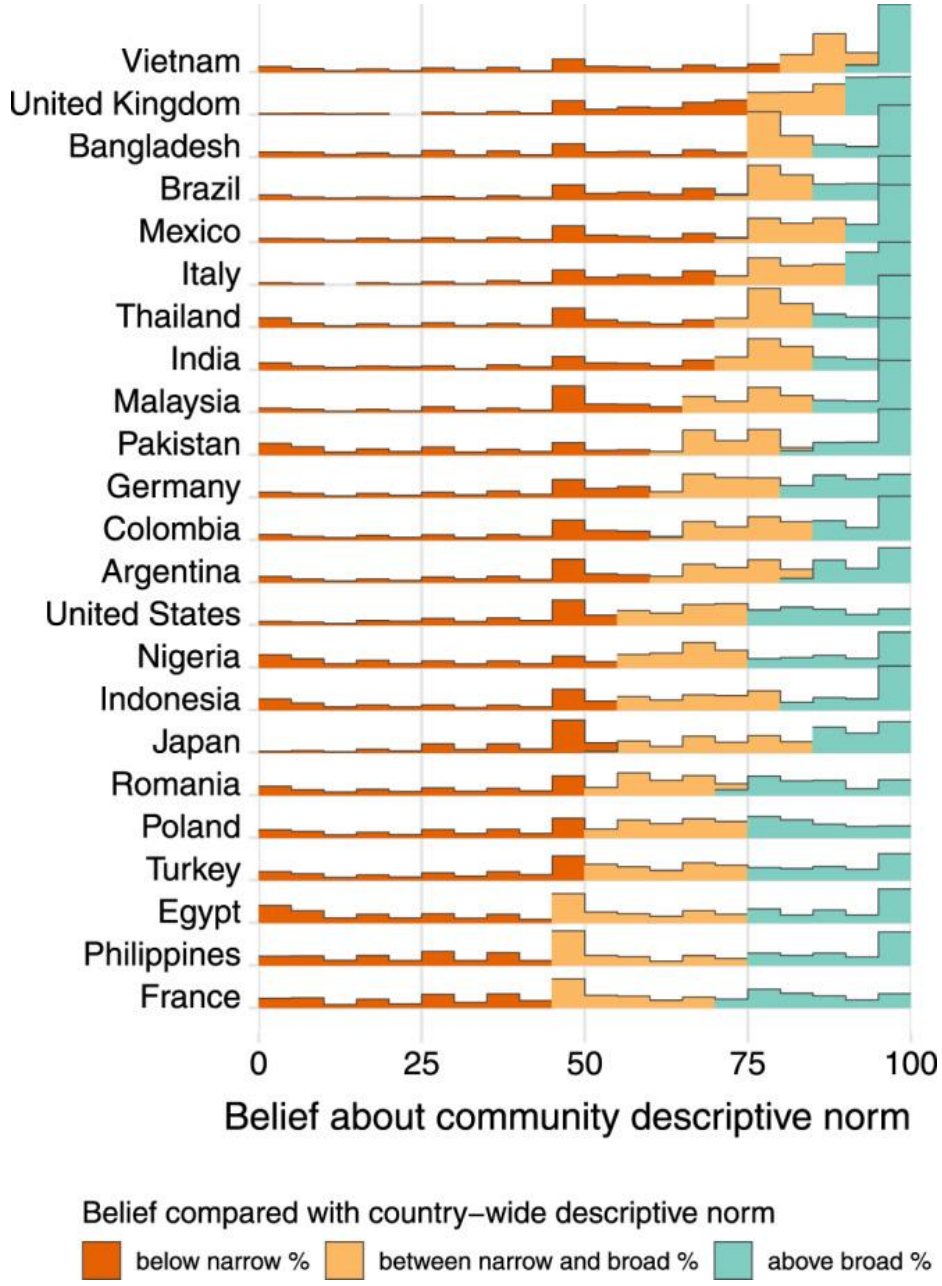
Alex Moehring [1,2], Avinash Collis [3,#], Kiran Garimella [4,#], M Amin Rahimian [2,5,#], Sinan Aral [1,2,6], Dean Eckles [1,2,6,✉]

Author information · Article notes · Copyright and License information

PMCID: PMC9828376 PMID: 36624092

Abstract

Despite the availability of multiple safe vaccines, vaccine hesitancy may present a challenge to successful control of the COVID-19 pandemic. As with many human behaviors, people's vaccine acceptance may be affected by their beliefs about whether others will accept a vaccine (i.e., descriptive norms). However, information about these descriptive norms may have different effects depending on the actual descriptive norm, people's baseline beliefs, and the relative importance of conformity, social learning, and free-riding. Here, using a pre-registered, randomized experiment (N = 484,239) embedded in an international survey (23 countries), we show that accurate information about descriptive norms can increase intentions to accept a vaccine for COVID-19. We find mixed evidence that



Tang et al. Implementation Science (2021) 16:8
https://doi.org/10.1186/s13012-020-01072-1

Implementation Science

SYSTEMATIC REVIEW Open Access

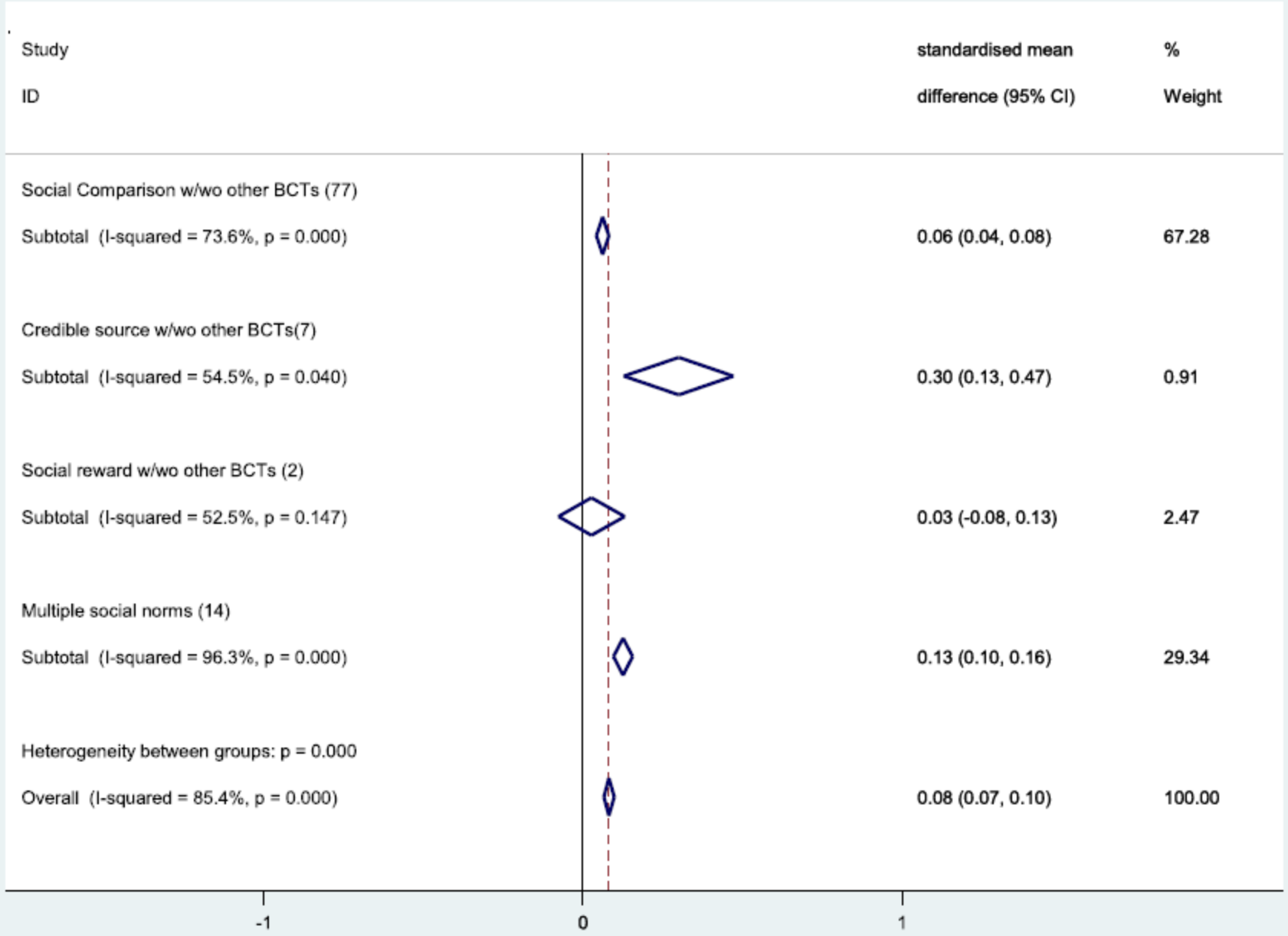
How effective are social norms interventions in changing the clinical behaviours of healthcare workers? A systematic review and meta-analysis

Mei Yee Tang[1,2*], Sarah Rhodes[1], Rachael Powell[3], Laura McGowan[3], Elizabeth Howarth[1], Benjamin Brown[4,5] and Sarah Cotterill[1]

Abstract

Background: Healthcare workers perform clinical behaviours which impact on patient diagnoses, care, treatment and recovery. Some methods of supporting healthcare workers in changing their behaviour make use of social norms by exposing healthcare workers to the beliefs, values, attitudes or behaviours of a reference group or person. This review aimed to evaluate evidence on (i) the effect of social norms interventions on healthcare worker clinical behaviour change and (ii) the contexts, modes of delivery and behaviour change techniques (BCTs) associated with effectiveness.

Methods: Systematic review and meta-analysis of randomised controlled trials. Searches were undertaken in seven databases. The primary outcome was compliance with a desired healthcare worker clinical behaviour and the secondary outcome was patient health outcomes. Outcomes were converted into standardised mean differences (SMDs). We performed meta-analyses and presented forest plots, stratified by five social norms BCTs (*social comparison*, *credible source*, *social reward*, *social incentive* and *information about others' approval*). Sources of variation in social norms BCTs, context and mode of delivery were explored using forest plots, meta-regression and

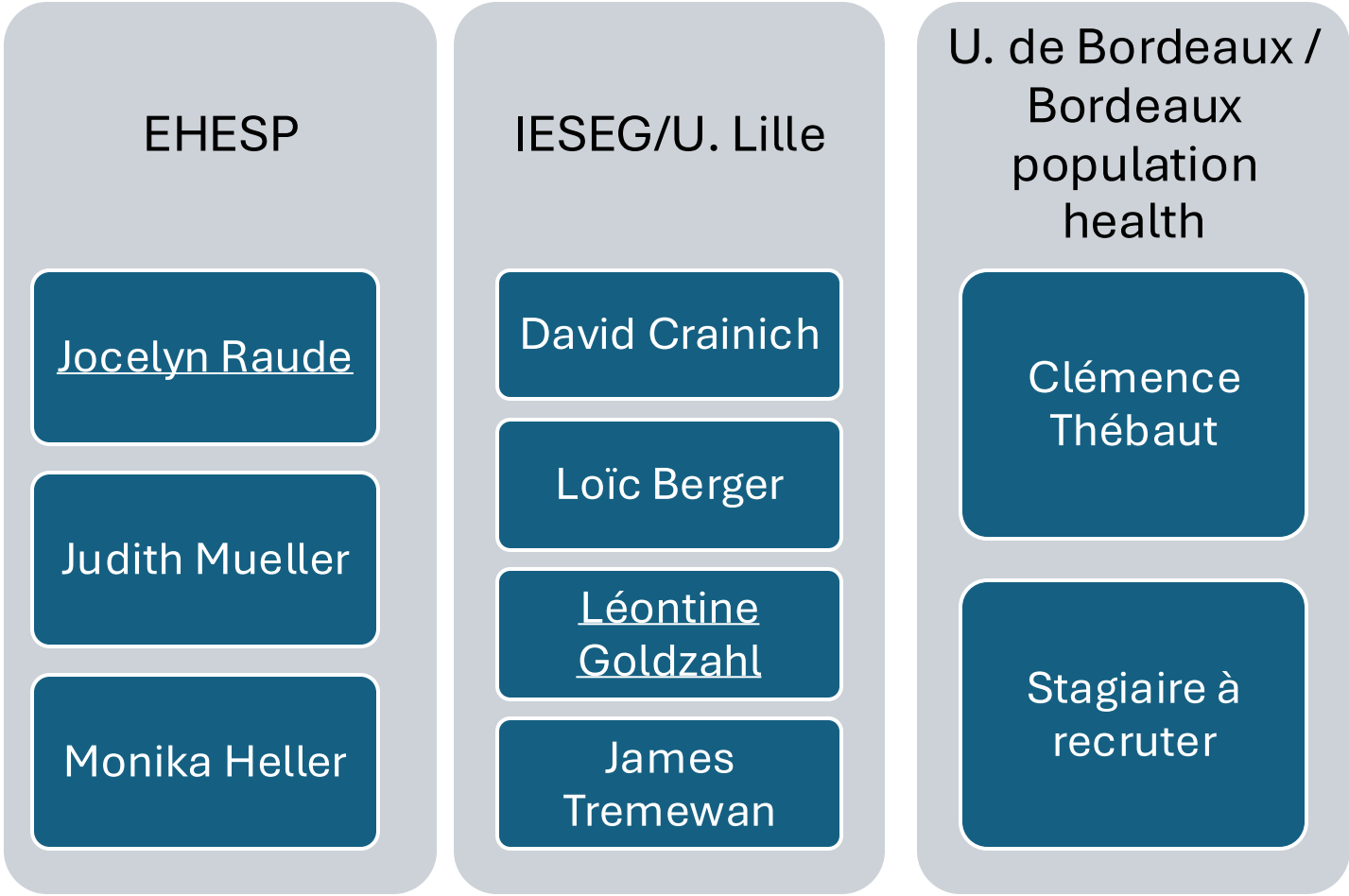

Study
ID
standardised mean
difference (95% CI)
%
Weight
Social Comparison w/wo other BCTs (77)
Subtotal (I-squared = 73.6%, p = 0.000)
0.06 (0.04, 0.08)
67.28
Credible source w/wo other BCTs(7)
Subtotal (I-squared = 54.5%, p = 0.040)
0.30 (0.13, 0.47)
0.91
Social reward w/wo other BCTs (2)
Subtotal (I-squared = 52.5%, p = 0.147)
0.03 (-0.08, 0.13)
2.47
Multiple social norms (14)
Subtotal (I-squared = 96.3%, p = 0.000)
0.13 (0.10, 0.16)
29.34
Heterogeneity between groups: p = 0.000
Overall (I-squared = 85.4%, p = 0.000)
0.08 (0.07, 0.10)
100.00
-1
0
1

E) L‘étude NURSEVAX

Changer les habitudes vaccinales des futures infirmières et infimiers

Equipe de recherche

Projet financé par l'IRESP depuis Janvier 2026



Constat et objectifs

- Vaccination contre la grippe des professionnels de santé:
  - Indicateur qualité & sécurité des soins
  - 22% des professionnels de santé, 21% des infirmières
  - Expansion du rôle des infirmières dans la vaccination

- Habitude de vaccination contre la grippe dès la formation

- Quelles interventions possibles ?
  - Formation existante
  - Interventions informationnelles en plus
  - Contenu souvent décidé par des chercheurs ou médecins ou institutions

Objectifs :

1/ Créer des **interventions persuasives** basées sur les croyances, attitudes, et arguments fournis par les étudiant.es en soins infirmiers

2/ Evaluer l'efficacité de ces interventions sur le recours à la vaccination

3/ Etudier leur acceptabilité auprès du public ciblé.

➔ **Restitutions** des résultats auprès des étudiant.es, IFSI, décideurs publics (ARS, etc.) et chercheurs/experts.

- IFSI Partenaires :

IFSI	Ville	Région
Iseform Santé - Santelys	Lille	Hauts-de-France
Université Catholique de Lille (FMMS)	Lille	Hauts-de-France
Hôpital Alexandra Lepève	Dunkerque	Hauts-de-France
IFSI Saint Omer	Saint Omer	Hauts-de-France
IFSI Armentières	Armentières	Hauts-de-France
IFSI CHU Rennes	Rennes	Bretagne
IFSI Lorient	Lorient	Bretagne
IFSI Paris Saint Joseph	Paris	Ile-de-France
IFSI Hôpital Simone Veil	Eaubonne-Montmorency	Ile-de-France
IFSI Léonie Chaptal	Sarcelles	Ile-de-France
IFSI GHU Paris	Paris	Ile-de-France
IFSI du GHT Yvelines Nord	Poissy	Ile-de-France
IFSI GH Fondation Vallée	Villejuif/Clamart	Ile-de-France
IFSI de l'EPS Ville Evrard	Neuilly-sur-Marne	Ile-de-France
IFSI Beaujon	Clichy-la-Garenne	Ile-de-France
IFSI Bichat	Paris	Ile-de-France
IFSI Pontivy	Pontivy	Bretagne

Création les interventions

Démarche participative des personnes concernées

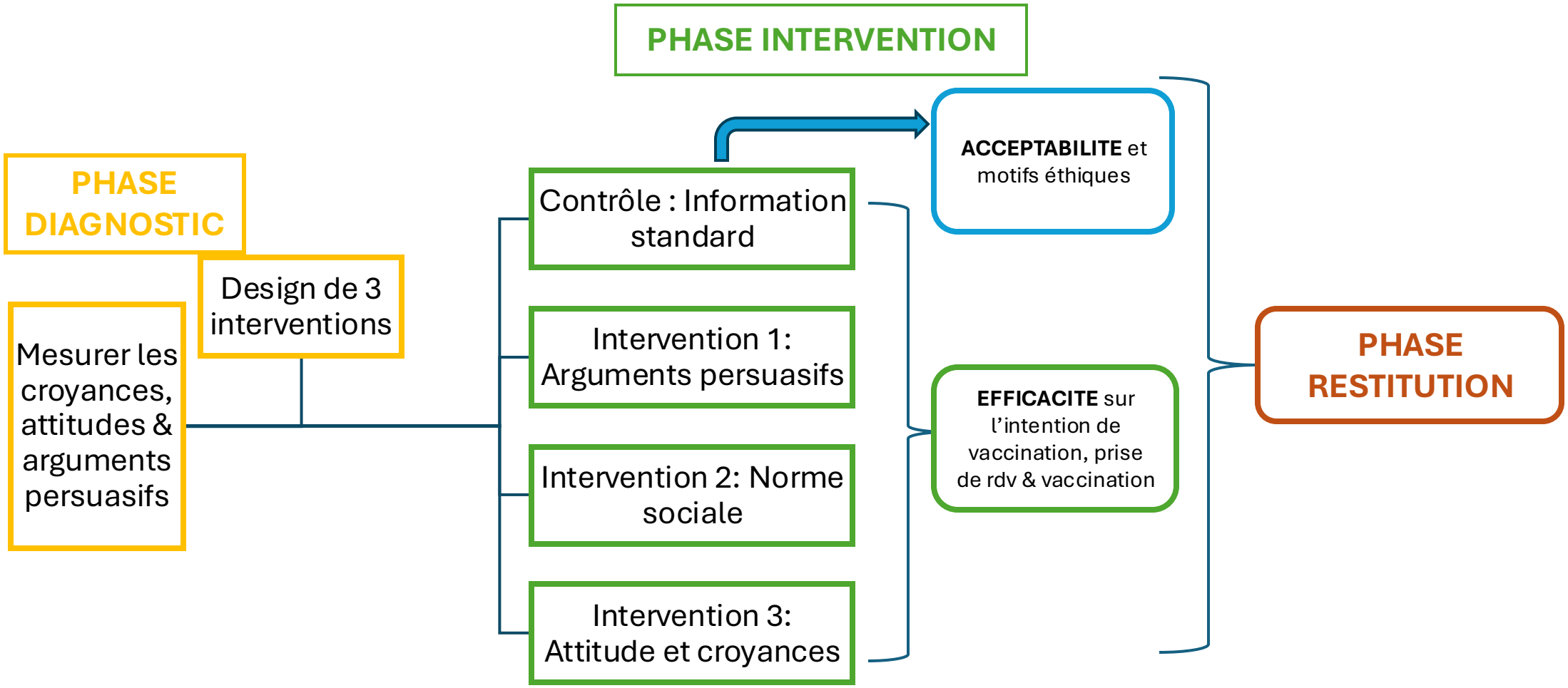
- Enquête sur le terrain visant à:
  - Collecter les arguments jugés persuasifs par les étudiant.s
  - Mesure des croyances normatives (ce que font et pensent les autres) et les attitudes (risque, temps, altruisme, balance benefice risque etc.) en lien avec la vaccination ➔ Selection de ceux qui prédisent la vaccination.

- Interventions basées sur:

1/ Les arguments persuasifs

2/ Les croyances normatives (ce que font et pensent les autres)

3/ Les attitudes

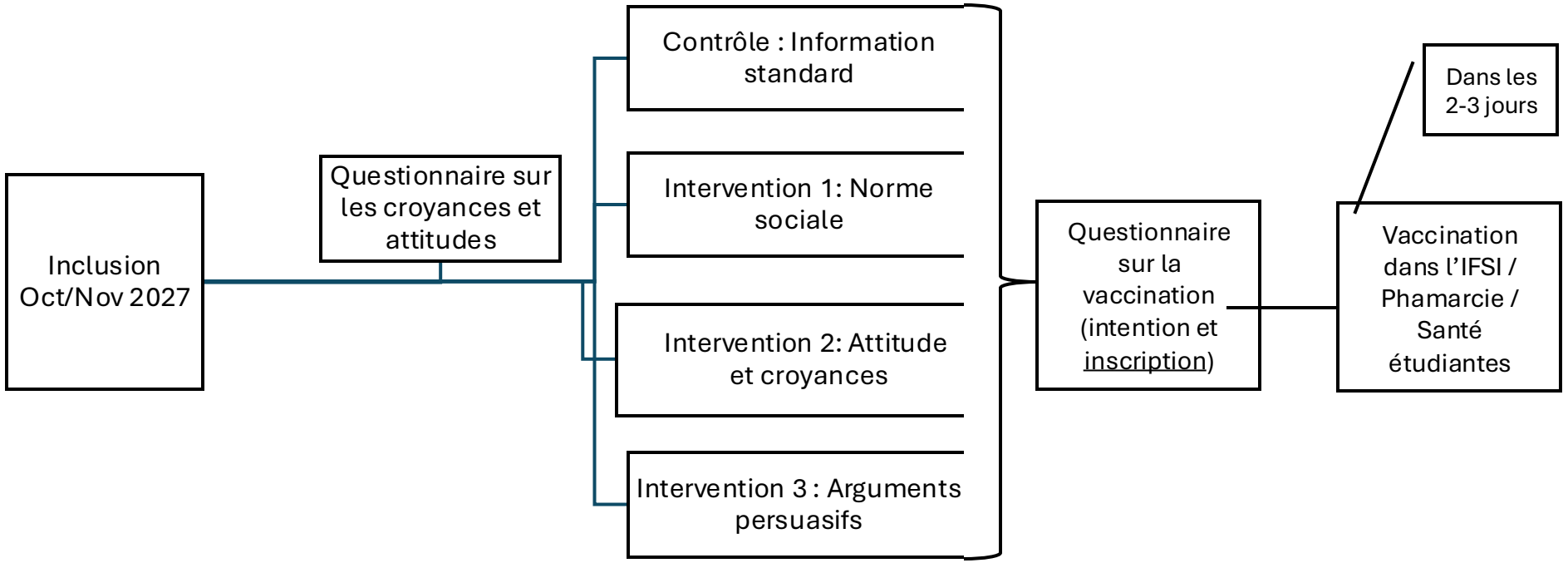


Oct/Nov. 2026
➔ Enquêtes

Oct/Nov. 2027
➔ Enquête + vaccination

A partir de mai 2028
➔ Présentation + enquête

Evaluation des interventions



Evaluer l'acceptabilité des interventions et les motivations éthiques sous-jacentes

- **Intérêt**: interventions persuasives utilisant une approche participative mais pouvant limiter leurs **latitude décisionnelle** plus qu'une intervention simplement educative.

- Quels arguments éthiques expliquent l'acceptation des 3 interventions?

- **Comment**? Enquête auprès des étudiants (500)