

***HPV Prevention and Control Board  
country meeting December 3, 2021***

**Optimizing HPV vaccination  
communication to adolescents**

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# Adolescents and decision on HPV vaccination?

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Vaccine literacy

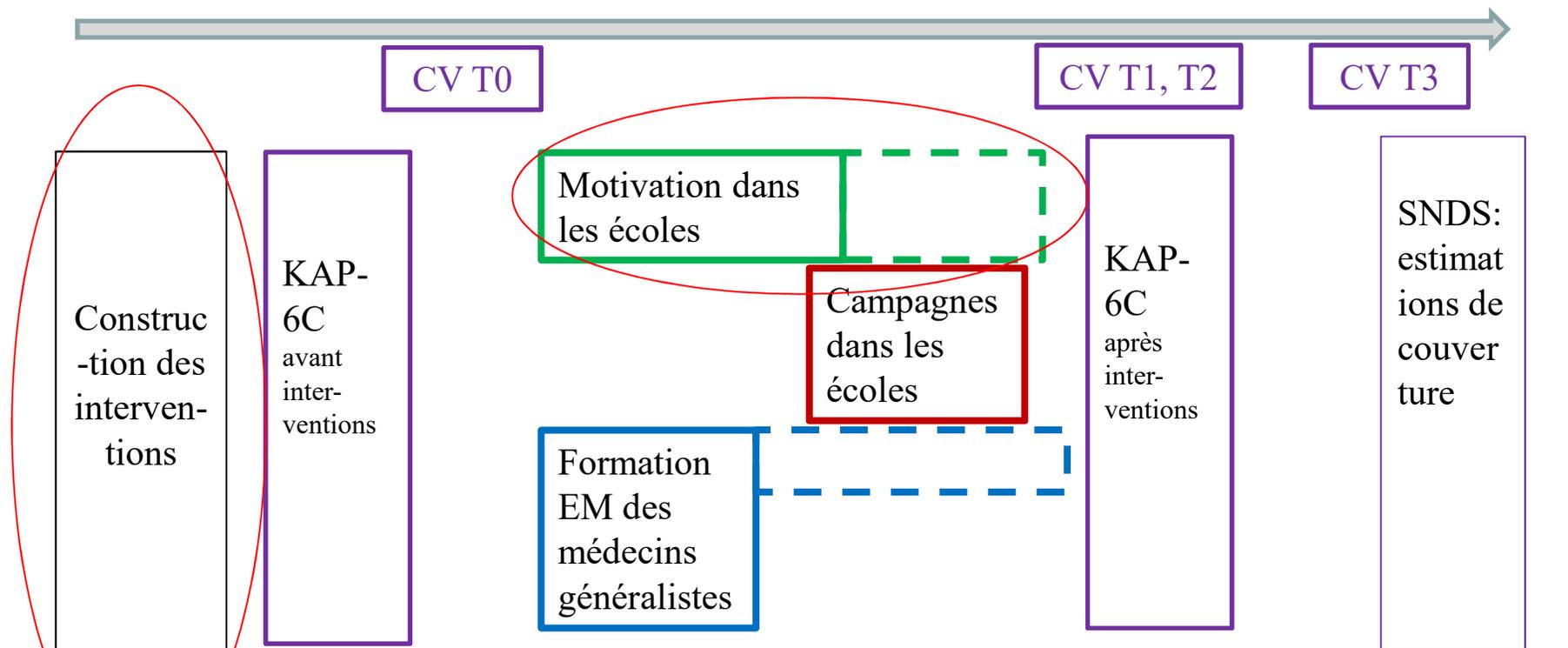
Participation in vaccine decisions already at 11-14 yrs?

Depends on relation with parents

Teaching provided in school (*collège, 4<sup>e</sup> et 3<sup>e</sup>*) ?

- Health literacy / Awareness
- Confidence
- Motivation

# PrevHPV: Evaluation of a complex intervention



KAP-6C, connaissances, attitudes et pratiques

CV, couverture vaccinale

# How to optimize HPV vaccine communication to adolescents in France?

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Should we speak about cancer or genital warts?

How to present information on HPV vaccine safety?

- French reimbursement data suggesting link with GBS
- Not reproduced in other countries

Should we mention collective protection, and how?

Can we optimise the information on vaccine coverage, how to mention currently insufficient coverage in France?

Should HPV be presented as a sexually transmittable infection?

# Discrete choice experiments (ConjointVac)

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Used to evaluate preferences and trade-offs on characteristics of preventative interventions

- price
- side effects
- effectiveness

Usually done by choosing between two or more options

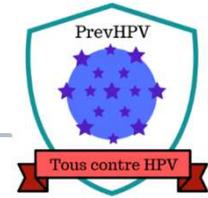
=> ConjointVac (Seanehia et al., Godinot et al.):

- accept or refuse one vaccination scenario (single profile)
- evaluation of contextual characteristics
- pre-testing of communication content

[Seanehia J](#) et al. Quantifying population preferences around vaccination against severe but rare diseases: A conjoint analysis among French university students, 2016. *Vaccine*. 2017

Godinot Donzel L et al. Quantifying preferences around vaccination against frequent, mild disease with risk for vulnerable persons: A discrete choice experiment among French hospital health care workers. *Vaccine*. 2021.

# Methods – DCE tool



Frame: possibility to enrol in school-based vaccination,  
parents have been informed

10 scenarios with variable information on the vaccine

## Rappel de la situation imaginaire :

**Votre collège propose une vaccination gratuite par un médecin, à laquelle vous pouvez vous inscrire. Vos parents sont informés. Le vaccin protège très bien contre une infection fréquente due à un virus. Le virus se transmet par contact proche. Les médecins généralistes de votre région soutiennent cette vaccination.**

Scénario 6 - Le vaccin peut protéger contre une maladie avec forte fièvre et difficultés à respirer.

- Dans les pays qui vaccinent la plupart des adolescents, le risque d'un effet secondaire grave qui pourrait être dû au vaccin n'a pas augmenté.
- En vaccinant la plupart des jeunes de votre âge, on peut faire disparaître la maladie de la population.
- Déjà un tiers des élèves de votre collège se sont inscrits pour se faire vacciner.

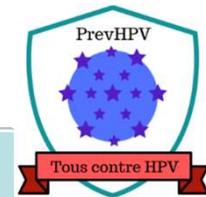
Votre décision:

- Je m'inscris  
 Je ne m'inscris pas

Sur l'échelle de 0 à 10, à quel point êtes-vous certain(e) de votre décision?  
(0 = pas du tout certain(e)/ 10 = parfaitement certain(e))

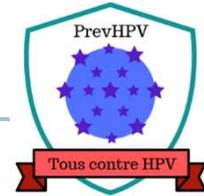
0  1  2  3  4  5  6  7  8  9  10

# Methods – DCE tool, attribute levels



Attributes	Levels (short definition)
<b>Disease</b>	The vaccine can protect against a disease with <b>high fever and breathlessness</b> .
	The vaccine can protect against a <b>cancer, which could occur in 20 years from now</b> .
	The vaccine can protect against <b>genital warts</b> .
<b>Safety</b>	The vaccine <b>does not cause any</b> serious side effects.
	The vaccine safety has been <b>monitored for more than 10 years worldwide. No serious side effect has been scientifically confirmed</b> .
	In countries where most adolescents are vaccinated, the <b>risk of a serious side effect that could be due to vaccination has not increased</b> .
	The vaccine can only in rare occasion cause a serious side effect, but the <b>benefit from vaccination are much greater than its risk</b> .
<b>Indirect Protection</b>	The vaccine protects <b>only you</b> .
	By getting vaccinated, you can <b>avoid transmitting the infection to other persons</b> .
	By vaccinating most young people of your age, one can <b>make the disease disappear from the population</b> .
<b>Coverage</b>	<b>Not enough students</b> of your school have registered to get vaccinated.
	<b>Already one third of students</b> of your school have registered to get vaccinated.
	<b>Most students of your school</b> have registered to get vaccinated (80%).
	In some countries like England and Portugal, <b>more than 80% of teens are vaccinated</b> .
<b>Transmission (add. attribute)</b>	The infection is transmitted <b>during sexual intercourse</b> .

# Results – sample characteristics



## Participation by 1458 adolescents, early 2020

- 5 middle schools in 3 administrative regions
- Mean age 13.8 years (4<sup>e</sup> and 3<sup>e</sup> level)
- 53% girls; 27% of girls thought being vaccinated against HPV; 48% did not know
- 19% parents ≤Bac, 25% speaking other than French at home
- 77% favorable to vaccination in general
- 47% thought easy to find information on vaccines  
preferred source: doctors and other health professionnels

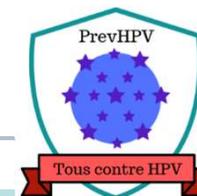
Across the 10 scenarios, vaccination was accepted in 80% of choices

51% of adolescents made the same choice for all 10 scenarios

- 45% always accepted vaccination
- 6% always refused vaccination

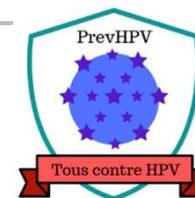
49% varied their choice => mixed logit model

# Results – overall preference weights



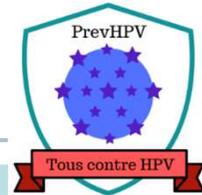
Attribute	Attribute level	OR	95%-CI
<b>Disease</b>	Respiratory disease (ref)	1	
	Cancer in 20 years	<b>1.29</b>	<b>[1.09,1.52]</b>
	Genital warts	0.91	[0.78, 1.06]
<b>Safety</b>	No side effect (ref)	1	
	Not confirmed in scientific surveillance	0.86	[0.71, 1.04]
	Safety other countries	<b>0.30</b>	<b>[0.24,0.36]</b>
	Positive benefit-risk balance	<b>0.30</b>	<b>[0.24,0.36]</b>
<b>Indirect protection</b>	Protects only you (ref)	1	
	Also protects others	<b>1.30</b>	<b>[1.11,1.52]</b>
	Elimination	<b>1.40</b>	<b>[1.18,1.66]</b>
<b>Vaccine coverage</b>	Not enough (ref)	1	
	Already one third	<b>1.48</b>	<b>[1.23,1.78]</b>
	Most students	<b>1.98</b>	<b>[1.64,2.38]</b>
	Other countries 80%	<b>1.94</b>	<b>[1.61,2.35]</b>

# Results – which impact by the notion of sexual transmission ?



	No mention of sexual transmission		Mention of sexual transmission		p-value
	%	95%-CI	%	95%-CI	
<b>Probability of acceptance</b>					
<b>All</b>	76.5	[73.4,79.6]	77.8	[74.7,80.8]	0.560
<b>Among girls</b>	77.7	[73.6,81.8]	77.0	[72.9,81.2]	0.814
<b>Among boys</b>	<b>74.9</b>	[70.1,79.7]	<b>79.0</b>	[0.74,0.83]	0.257

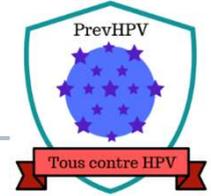
# Results – girls and boys



Attribute	Attribute level	OR	95%-CI	OR	95%-CI
<b>Disease</b>	Respiratory disease (ref)	1		1	
	Cancer in 20 years	<b>1.39</b>	<b>[1.11,1.75]</b>	1.14	[0.88,1.47]
	Genital warts	1.01	[0.83,1.24]	0.80	[0.64,1.01]
<b>Safety</b>	No side effect (ref)	1		1	
	Not confirmed in scientific surveillance	0.78	[0.60,1.00]	0.97	[0.73,1.30]
	Safety other countries	<b>0.25</b>	<b>[0.20,0.33]</b>	<b>0.35</b>	<b>[0.26,0.47]</b>
	Positive benefit-risk balance	<b>0.29</b>	<b>[0.22,0.38]</b>	<b>0.30</b>	<b>[0.22,0.41]</b>
<b>Indirect protection</b>	Protects only you (ref)	1		1	
	Also protects others	<b>1.43</b>	<b>[1.16,1.75]</b>	1.17	[0.92,1.48]
	Elimination	<b>1.57</b>	<b>[1.25,1.96]</b>	1.19	[0.92,1.55]
<b>Vaccine coverage</b>	Not enough (ref)	1		1	
	Already one third	<b>1.56</b>	<b>[1.22,2.00]</b>	<b>1.41</b>	<b>[1.06,1.88]</b>
	Most students	<b>2.09</b>	<b>[1.62,2.68]</b>	<b>1.91</b>	<b>[1.44,2.52]</b>
	Other countries 80%	<b>1.81</b>	<b>[1.41,2.33]</b>	<b>2.15</b>	<b>[1.60,2.89]</b>

# Limitations

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Sample not necessarily representative

Only hypothetical acceptance

Only half of adolescents varied their choice

=> need to explore « vaccine eagerness » as certainty of the decision

=> forthcoming article: preferences are similar among those constantly accepting and most of constantly refusing

# How to optimize HPV vaccine communication to adolescents in France?

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We should speak about cancer (despite occurrence in the far future)

Preferable wording for HPV vaccine safety:

- « No suspicion about a severe side effect has been scientifically confirmed. »

Do mention collective protection, potential for elimination

Do mention high HPV vaccine coverage among adolescents in other countries (UK, Portugal)

We can, but do not have to, mention sexual transmission

- No substantial variation of these preferences by gender or proxies of socio-economic status
- Similar study done for parents
- Questions among HCW about BBR for boys

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# Thank you

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Contents lists available at [ScienceDirect](#)



**Vaccine**

journal homepage: [www.elsevier.com/locate/vaccine](http://www.elsevier.com/locate/vaccine)



## Optimising HPV vaccination communication to adolescents: A discrete choice experiment



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