

Mandatory vaccination in France

Catherine Weil Olivier

Honorary Professor of Pediatrics

University paris 7

Links of interest: none on the topic

www.transparence.gouv.fr

HPV meeting, Annecy, 23 December 2021

Legal context up to 2017 included

- **Three vaccines were mandatory**

- **Diphtheria** (since 1938)

- **Tetanus** (since 1940)

- **Poliomyelitis** (since 1964)

Background

French numerous suspiscions against vaccines

**Hepatitis B vaccine
and multiple sclerosis**

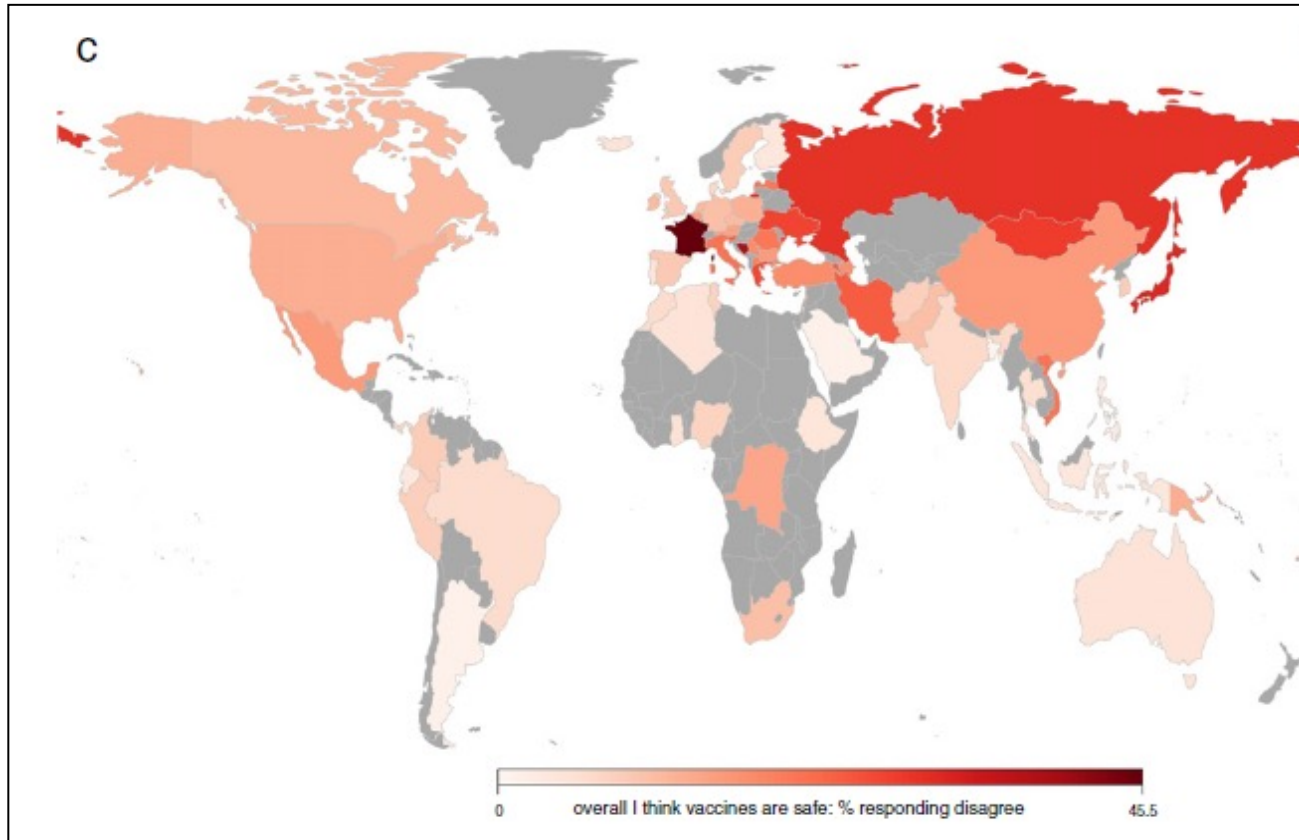
All adjuvants

***Pertussis vaccines
and infants' sudden death, encephalopathies***

**ALUMINIUM SALTS
AND MACROPHAGE MYOFASCIITIS**

Background

French population and vaccines' hesitancy

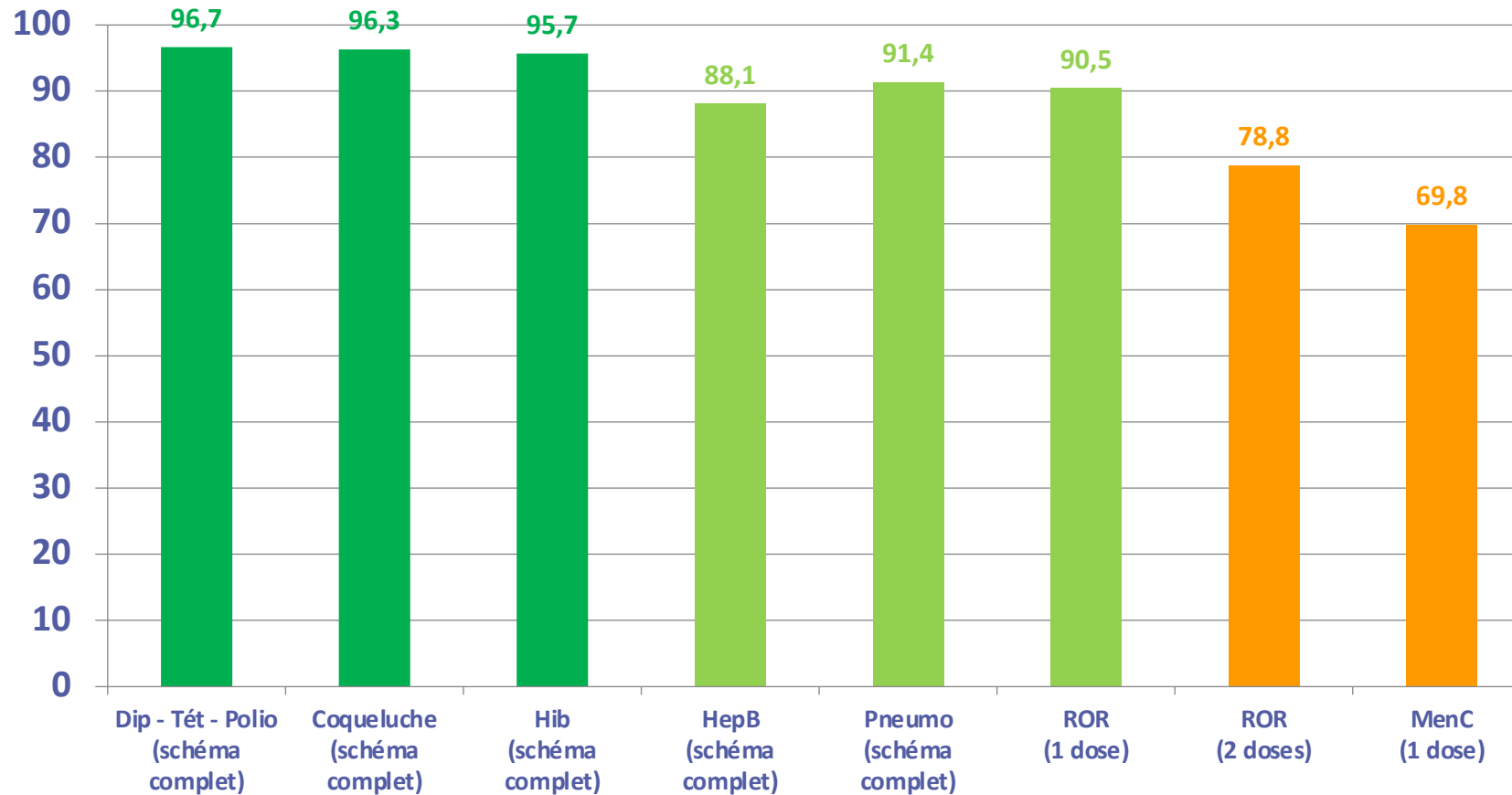


To the item « I think that vaccines are safe »

- **45,2% of French people disagree**
- The mean in 67 countries surveyed here is 13%

Background

Vaccines uptake in France in 2015



- <http://invs.santepubliquefrance.fr/Dossiers-thematiques/Maladies-infectieuses/Maladies-a-prevention-vaccinale/Elargissement-de-l-obligation-vaccinale-a-11-maladies>

Background vaccine uptake

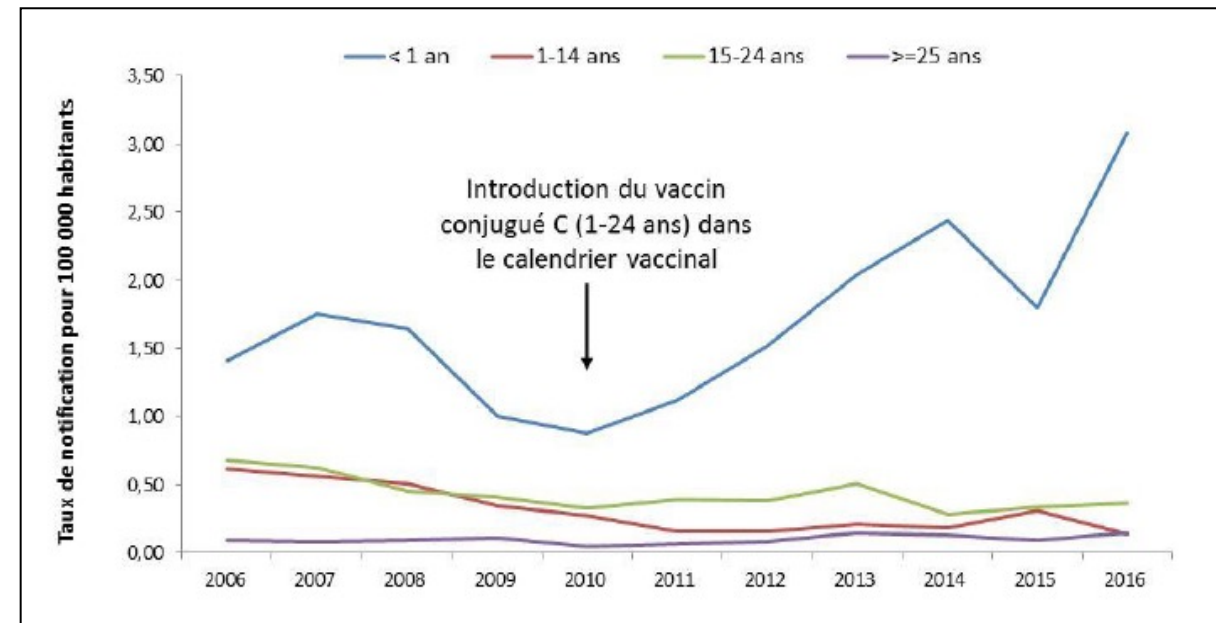
- **Vaccine uptake of MMR and Meningococcal C conjugate vaccines were insufficient**, year by year, leading to :
 - epidemics outbreaks (Measles)
 - and persistence of Men C invasive diseases with an increase of cases in the youngest infants, fully preventable with better coverage rates.

Men C conj Vaccine uptake

Age	24 ms	3-9 yrs	10-14 yrs	15-19 yrs	20-25 yrs
Up to December 31, 2016	70,9%	65,5%	35,7%	25,5%	10,1%

<https://www.santepubliquefrance.fr/maladies-et-traumatismes/maladies-a-prevention-vaccinale/infections-invasives-a-meningocoque>

Notification rate of Men C invasive; France, 2006-2016



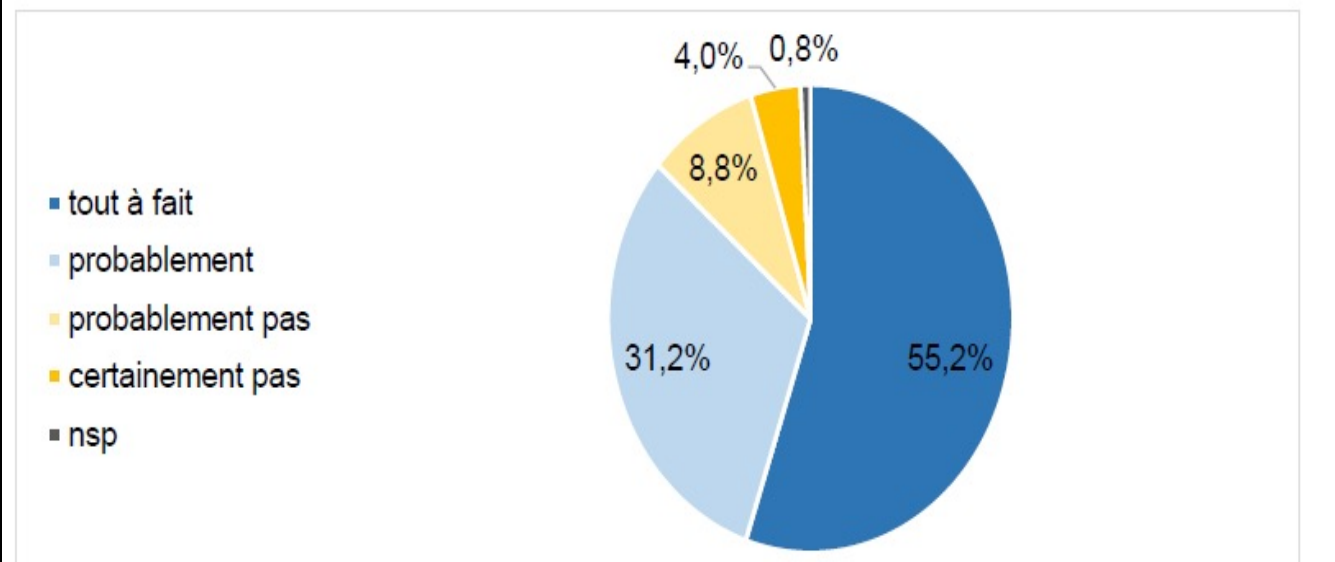
Background

Sociological facts

- Santé publique France published in 2016 a « Baromètre Santé » about the **attitude of the parents** of children aged 1 year to 15 years in case any mandatory vaccination was cancelled

13 % of parents either probably or certainly would not vaccinate their child

Proportions de parents d'enfants de 1 à 15 ans qui feraient vacciner leur enfant si la vaccination contre le DTP n'était plus obligatoire (Baromètre santé 2016)



Les Baromètres santé sont des enquêtes périodiques permettant de suivre depuis plus de 20 ans les principaux comportements, attitudes et perceptions en matière de santé de la population résidant en France métropolitaine.

Le Baromètre santé 2016, 8th edition; from January to August 2016; 15 216 persons 15 to 75 years surveyed.

The process of mandatory vaccination in France

January
2016

November 30
2016

February 8
2017

July 5
2017

30 Décembre
2017

25 Janvier
2018

Report on
vaccination
policy
*Sandrine
Hurel*

**Report on
vaccination**
(Committee
« orientation de la
concertation
citoyenne sur la
vaccination »)
Pr Alain Fischer

« Conseil
d'Etat »
Advice on
DtPolio
Vaccine

**Agnès Buzyn* speech
relative
to mandatory vaccination**

« Il y a donc un impératif de
santé publique à améliorer la
couverture vaccinale de notre
population.

**La réponse passe par l'extension
des obligations vaccinales »**

LFSS** 2018
(Article 49)

Décret n° 2018-42

It is THE LAW

DTPolio: Diphtérie Tétanos Polio

**Ministry of Health*

*** Loi de financement de la sécurité sociale*

http://solidarites-sante.gouv.fr/IMG/pdf/rapport_sur_la_politique_vaccinale_janvier_2016_.pdf consulté le 06 05 2018

<http://concertation-vaccination.fr/wp-content/uploads/2016/11/Rapport-de-la-concertation-citoyenne-sur-la-vaccination.pdf> consulté le 06 05 2018

<http://www.conseil-etat.fr/Decisions-Avis-Publications/Decisions/Selection-des-decisions-faisant-l-objet-d-une-communication-particuliere/CE-8-fevrier-2017-M.-B> consulté le 06 05 2018.

<http://solidarites-sante.gouv.fr/actualites/presse/discours/article/discours-d-agnes-buzyn-relatif-a-la-vaccination-obligatoire-le-5-juillet-2017> consulté le 06 05 2018.

<https://www.legifrance.gouv.fr/eli/loi/2017/12/30/CPAX1725580L/jo/texte#JORFARTI000036339170> consulté le 06 05 2018.

<https://www.legifrance.gouv.fr/eli/decret/2018/1/25/SSAP1732098D/jo/texte> consulté le 06 05 2018.

The process of mandatory vaccination was supported by a consensus of medical societies

On October 6, 2017 around 40 medical societies support the action of the government and Ministry of health

COMMUNIQUE DE PRESSE 6/10/2017

Les sociétés scientifiques, médicales, paramédicales, les syndicats médicaux, tous signataires ci-dessous, soutiennent la politique en faveur de la prévention des maladies infectieuses mise en œuvre par le Gouvernement et la Ministre de la Santé.

Mandatory vaccination « practical rules »

Based on Art. D. 3111-6 du Code la Santé Publique determining the way to proof the mandatory vaccination

- **ALL infants under 2 years of age**
- **Born after January 1st, 2018**
- **Mandatory to enter (or stay in) a day care center OR any kind of care (private official nurse caring for up to 3 to 4 infants, ...)**
- **Reluctant parents have up to 3 months to start / complete the missing vaccines***

*Art. R. 3111-8 du Code la Santé Publique précisant les conditions d'admission
Décret n°2018-42 du 25 janvier 2018 relatif à la vaccination obligatoire

What about sanctions?

For the parents

- **Suppressed** (Art L3116-4 du Code de la Santé Publique – refus vaccinal) : up to 6 months of jail and a fine of 3 750 Euros
- **Maintained** (Art 227-17 du Code Pénal) : « subtraction, without a legitimate motive, by a parent to the legal obligations compromissing the health of his child » : jail up to 2 years and a fine of 30 000 Euros

False certificates established by a doctor

- **Sanctions for the parents** who utilize it (Art 441-1 du code pénal) : up to 3 years of jail and a fine of 45 000 Euros
- **Sanctions for the doctor** who wrote it:
A risk of penal sanctions and disciplinary (CNOM)
Art 441-1 du Code Pénal : up to 3 years of jail and a fine of 45 000 Euros

Changes of vaccination schedules in 2018 compared to the years before up to 2017

Up to 2017: mandatory against 3 diseases

Vaccins contre :	Naissance	2 mois	4 mois	5 mois	11 mois	12 mois	16-18 mois
Diphtérie (D), Tétanos (T), coqueluche acellulaire (Ca), Poliomyélite (P)		DTCaP	DTCaP		DTCaP		
<i>Haemophilus influenzae</i> b (Hib)		Hib	Hib		Hib		
Hépatite B (Hep B)		Hep B	Hep B		Hep B		
Pneumocoque (PnC) ¹		PnC	PnC		PnC		
Méningocoque C (vaccin conjugué MnC)				MnC		MnC	
Rougeole (R), Oreillons (O), Rubéole (R)						ROR 1	ROR 2

From 2018: mandatory against 11 diseases

Vaccins contre :	Naissance	2 mois	4 mois	5 mois	11 mois	12 mois	16-18 mois
Diphtérie (D), Tétanos (T), coqueluche acellulaire (Ca), Poliomyélite (P)		DTCaP	DTCaP		DTCaP		
<i>Haemophilus influenzae</i> b (Hib)		Hib	Hib		Hib		
Hépatite B (Hep B)		Hep B	Hep B		Hep B		
Pneumocoque (PnC) ¹		PnC	PnC		PnC		
Méningocoque C (vaccin conjugué MnC)				MnC		MnC	
Rougeole (R), Oreillons (O), Rubéole (R)						ROR 1	ROR 2

- **NO change in the global number of vaccines or in the number of shots (N=10)**
- **Recommended becomes mandatory under 2 years of age**

NO increase of vaccine'shots appointments



N = 6

Mandatory schedule under 2 years of age

Vaccines available: the same!!

■ **Hexavalent Vaccines**

- ✓ D-T-Polio-3Ca-Hib-HepB
- ✓ D-T-Polio-2Ca-Hib-HepB
- ✓ D-T-Polio-5Ca-Hib-HepB

■ **PCV13-valent Vaccine**

- Against 13 sérotypes de *Streptococcus pneumoniae* : 1, 3, 4, 5, 6A, 6B, 7F, 9V, 14, 18C, 19A, 19F, 23F

■ **Men C conjugate Vaccines**

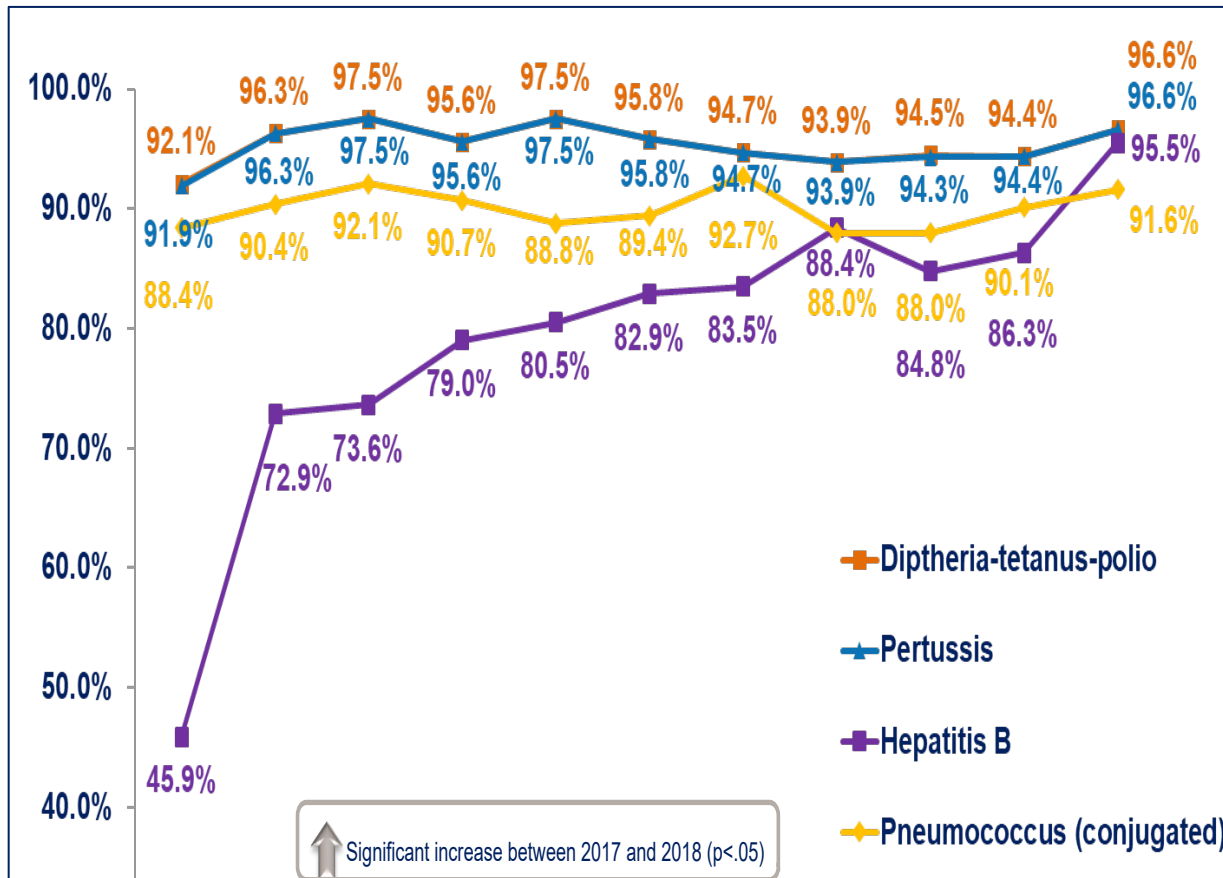
- Conjugate to tetanus anatoxin (at 5 months of age)
- Conjugate to *Corynebacterium diphtheriae*

■ **« Triple » MMR Vaccine**

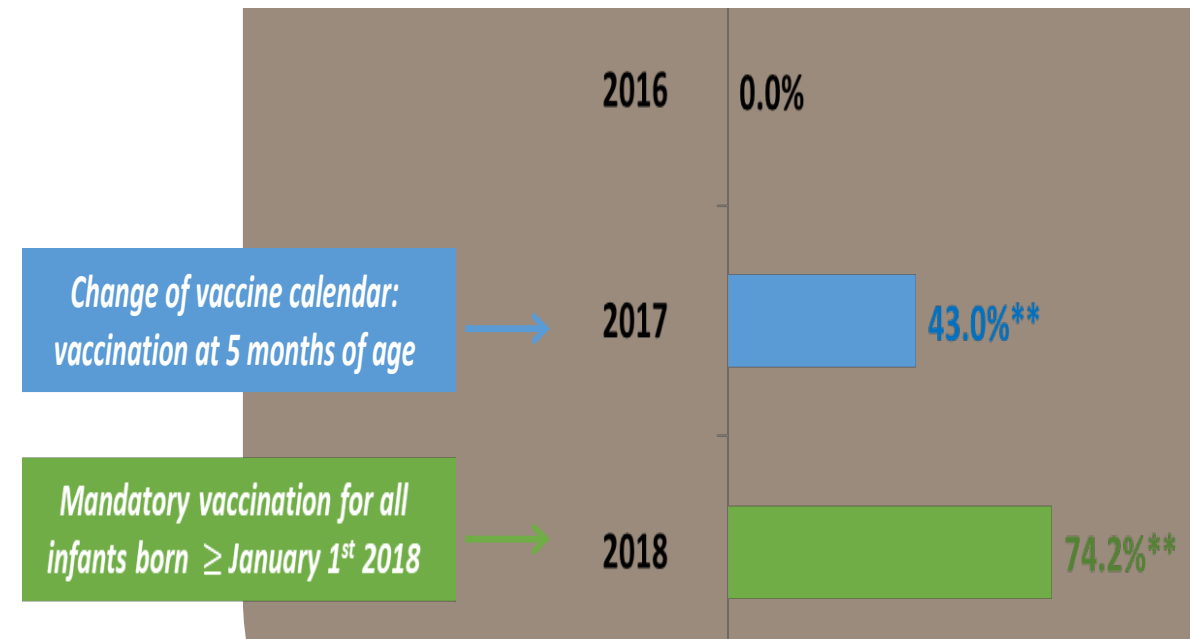
- Measles: Schwarz strain; Oreillons : RIT 4385 (strain dérivé de Jeryl Lynn®) ; Rubella : Wistar RA 27/3 strain
- Measles :Edmonston Enders strain ; mumps: Jeryl Lynn® strain ; Rubella : Wistar RA 27/3 strain

Evolution of some vaccine coverage rates in 2018

Two doses at 6 months of age
 Significant increase of **HepB Vaccine uptake** in 2018



MenC vaccination: impact of the new vaccine recommendation and mandatory vaccination on VCR



** Significant difference at 99% with previous year

Mandatory vaccinations

Which results by the end of 2018?

- **For infants born after January 1st, 2018 a positive impact on vaccines uptake, compared to those born in 2017**
 - Hexavalent vaccine: **+ 5,5 points**
 - PCV13 first dose: : **+ 1,4 point**
 - Men C conjugate vaccine first dose* : **+ 36,4 points**
- **An important decrease of the annual incidence of Men C invasive diseases in infants < one year of age**

**at 5 months of age*

Mandatory vaccinations

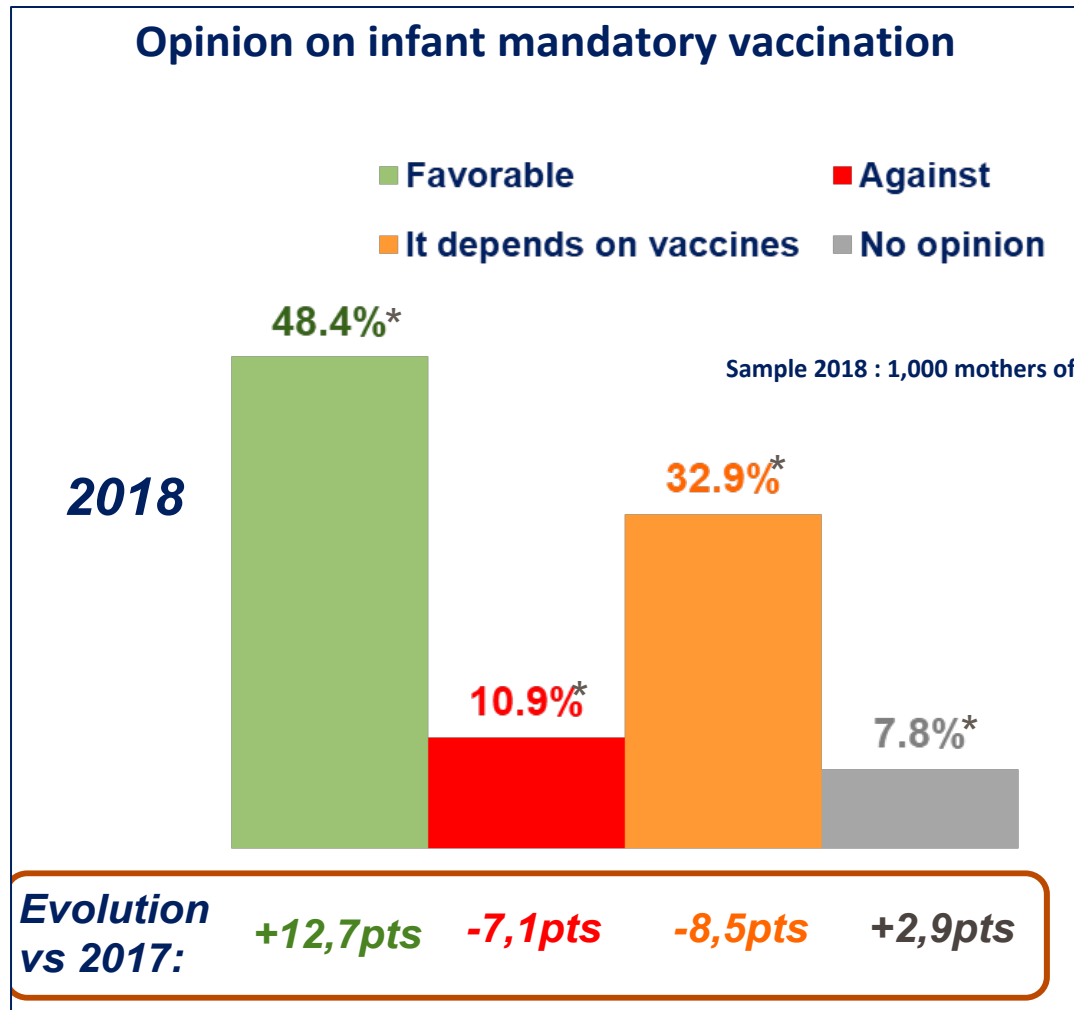
Which results by the end of 2018?

In children born before January 1st, 2018*

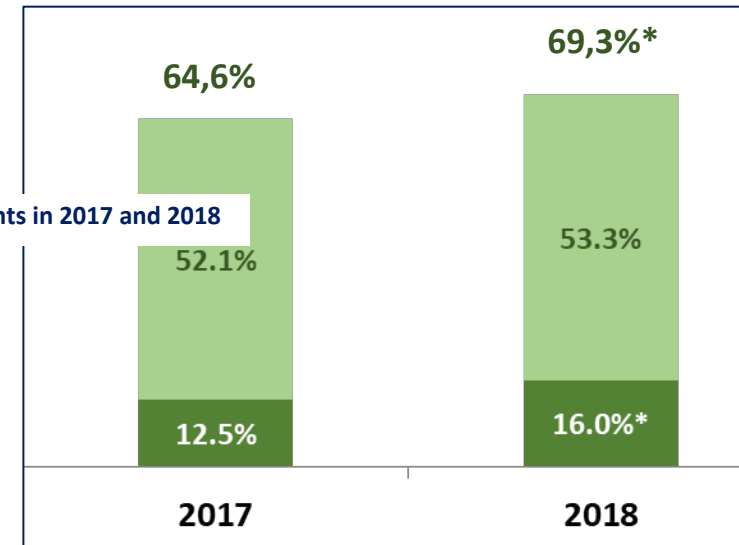
- **Vaccine uptake increase** in 2018 compared to 2017
 - MMR 1st dose: **+ 2,2 points**
 - HPV vaccine 1st dose: **+ 3,2 points** in adolescents (girls)
15 years of age

**Children born before the law was applied*

Mothers' opinion on vaccination in 2018



Perception of being rather well/ very well informed on vaccination



■ Yes, rather well informed

■ Yes, perfectly well informed

* Significant difference at 95% between 2017 and 2018

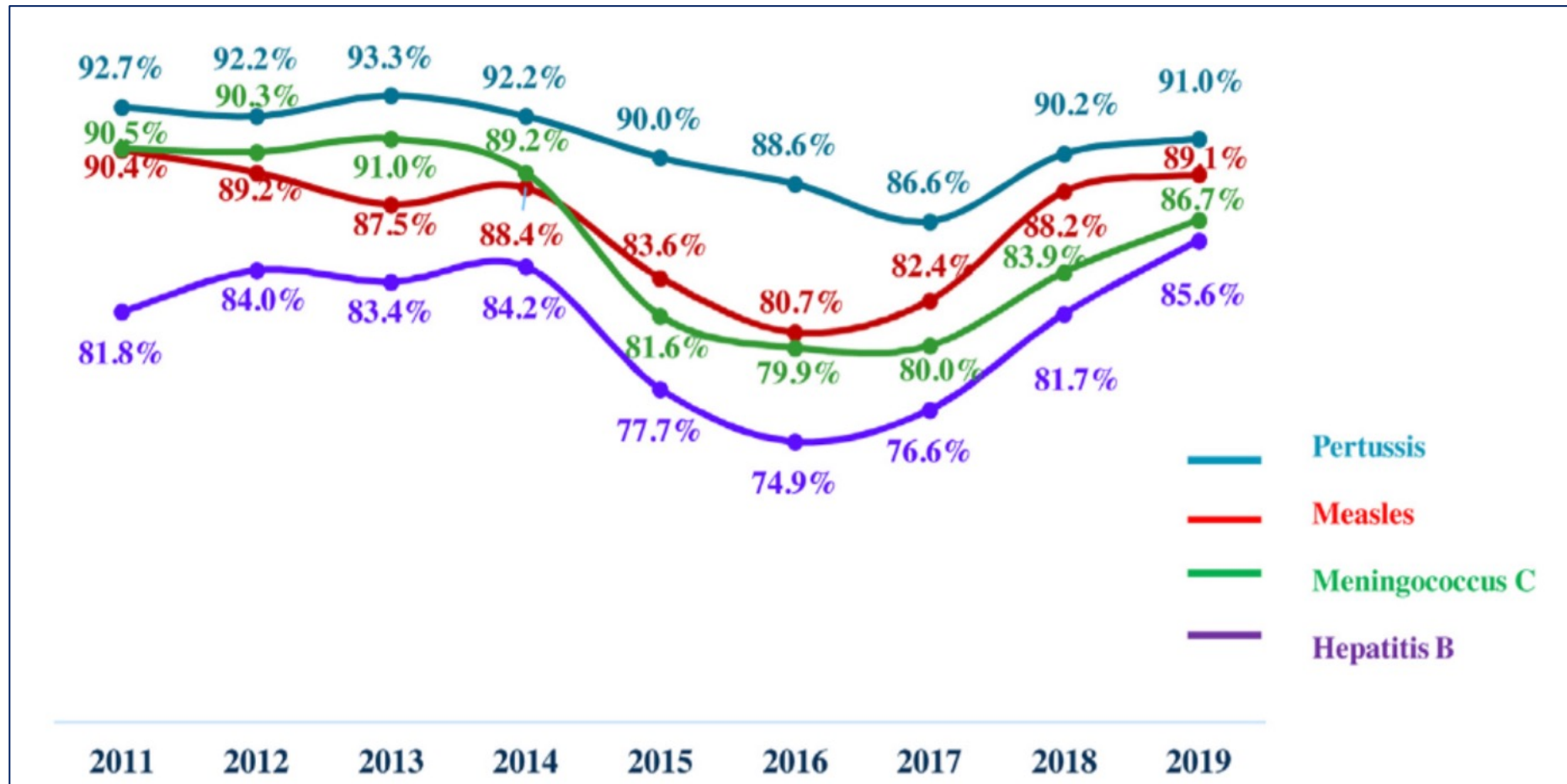
https://interactive-programme.europa-organisation.com/slides/programme_ricai-2018/20181217/274

What the mothers think about vaccines

« Vaccinoscopie » survey in 2019 (August 29-November 25)

- Design :
 - Yearly* online standardized questionnaire
 - Targeting a representative sample of 4,500 mothers, including 3,000 mothers of 0 to 35-month-old children in 2018.
 - Interviewed on personal opinion and attitude towards vaccination.
 - Mothers report all the vaccines recorded in their child's health record.
 - Focus on the 1,000 mothers of 0 to 11-month-old infants
- Representativeness of sample insured by adjusting on 3 criteria:
 - Socio-professional category of the reference person in household
 - Number of children (primiparous / multiparous women)
 - Geographic areas.

Vaccines uptake in children < 2 years of age France, 2011 - 2019



Uptake of vaccination in children < 2 years from 2016 to 2019

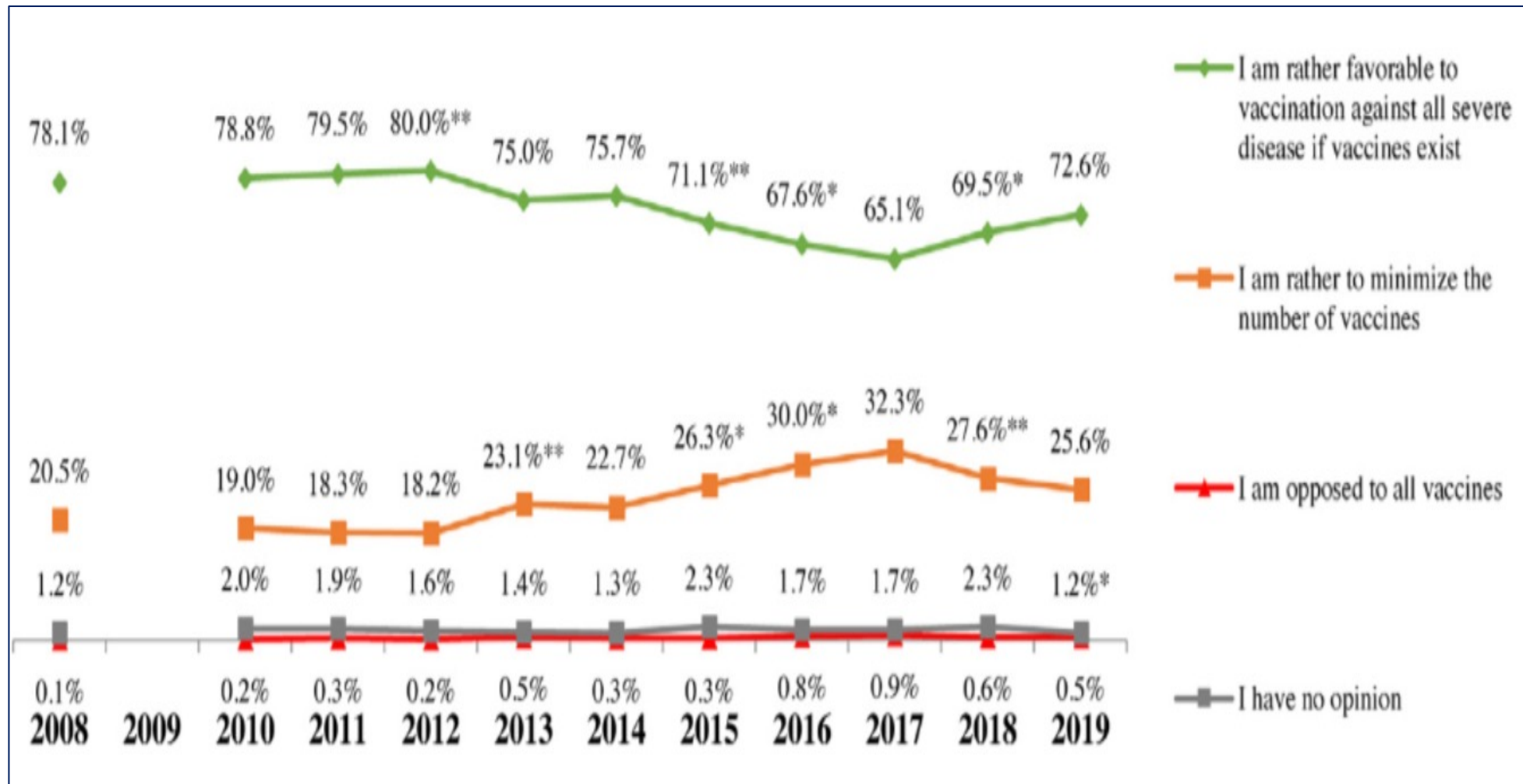


	2016		2017		2018		2019		
	VCR [95% CI]		VCR [95% CI]		VCR [95% CI]		VCR [95% CI]		
<i>DT-Polio</i>									
At least 1 dose at 6 months	97.5%	[95.5%;99.4%]	97.3%	[95.3%;99.3%]	97.9%	[96.1%;99.7%]	98.4%	[96.9%;100.0%]	
Complete primovaccination at 9 months	97.7%	[95.9%;99.6%]	96.2%	[93.8%;98.6%]	95.3%	[92.7%;97.9%]	96.2%	[93.9%;98.6%]	
At least 3 doses at 15 months	91.9%	[88.5%;95.3%]	94.2%	[91.3%;97.1%]	95.6%	[93.1%;98.2%]	95.2%	[92.6%;97.9%]	+ 0.8%
<i>DTPa-Polio</i>									
At least 1 dose at 6 months	97.5%	[95.5%;99.4%]	96.9%	[94.7%;99.0%]	97.9%	[96.1%;99.7%]	97.8%	[96.0%;99.6%]	
Complete primovaccination at 9 months	97.5%	[95.5%;99.4%]	96.2%	[93.8%;98.6%]	95.3%	[92.7%;97.9%]	96.2%	[93.9%;98.6%]	
At least 3 doses at 15 months	91.9%	[88.5%;95.3%]	94.2%	[91.3%;97.1%]	95.0%	[92.3%;97.7%]	95.2%	[92.6%;97.9%]	+ 1%
<i>Hib</i>									
At least 1 dose at 6 months	96.0%	[93.6%;98.5%]	96.0%	[93.6%;98.4%]	97.7%	[95.8%;99.6%]	97.2%	[95.2%;99.3%]	
Complete primovaccination at 9 months	95.8%	[93.3%;98.3%]	94.8%	[92.1%;97.6%]	96.0%	[93.5%;98.4%]	95.9%	[93.4%;98.4%]	
At least 3 doses at 15 months	91.0%	[87.4%;94.5%]	94.2%	[91.3%;97.1%]	94.0%	[91.1%;97.0%]	94.1%	[91.2%;97.0%]	
<i>HepB</i>									
At least 1 dose at 6 months	86.4%	[82.1%;90.6%]	88.7%	[84.8%;92.6%]	96.8%**	[94.6%;99.0%]	96.6%	[94.3%;98.8%]	
Complete primovaccination at 9 months	87.2%	[83.1%;91.4%]	87.8%	[83.8%;91.9%]	89.5%	[85.7%;93.3%]	95.7%*	[93.1%;98.2%]	
At least 3 doses at 15 months	85.8%	[81.5%;90.1%]	86.1%	[81.8%;90.4%]	90.8%	[87.2%;94.4%]	93.0%	[89.9%;96.2%]	+ 6.9%
<i>Pn</i>									
At least 1 dose at 6 months	90.1%	[86.4%;93.8%]	94.0%	[91.0%;96.9%]	96.1%	[93.7%;98.5%]	94.9%	[92.1%;97.6%]	
Complete primovaccination at 9 months	91.5%	[88.1%;95.0%]	93.6%	[90.6%;96.6%]	93.0%	[89.9%;96.2%]	94.7%	[91.9%;97.4%]	
At least 3 doses at 15 months	89.5%	[85.7%;93.3%]	90.9%	[87.4%;94.5%]	90.9%	[87.4%;94.5%]	93.1%	[89.9%;96.2%]	
<i>MenC</i>									
At least 1 dose at 6 months	0.0%	[0.0%;0.0%]	43.0%**	[36.8%;49.1%]	74.2%**	[68.8%;79.6%]	78.9%	[73.8%;84.0%]	
At least 1 dose at 9 months	0.9%	[0.0%;2.0%]	29.9%**	[24.3%;35.6%]	76.3%**	[71.1%;81.6%]	85.0%*	[80.6%;89.4%]	
At least 2 doses at 15 months	0.3%	[0.0%;0.9%]	1.1%	[0.0%;2.4%]	39.2%**	[33.1%;45.2%]	69.5%**	[63.8%;75.2%]	+ 68.4%
<i>MMR</i>									
At least 1 dose at 15 months	86.8%	[82.6%;91.0%]	85.5%	[81.1%;89.8%]	86.7%	[82.5%;90.9%]	89.5%	[85.7%;93.3%]	+ 4%

Benefits & limits of mandatory vaccination

- **Favorable confidence to the extension of mandatory vaccination**
 - Parents 69%
 - GPs 75%
 - Pediatricians 96%
- **Direct benefit for the vaccinated children**
- **Indirect protection**, potential impact on infectious agent transmission
- **BUT: the increase of MMR uptake has been moderate** (+ 4 points in 2019 compared to 2017) and does not reach 95% at 15 months of age.
 - ✓ Main hypothesis: vaccination checking may be more systematic when entering a day care center than during the 2nd year of life

In 2019 a regain of positive opinions toward vaccinations in general



Perception and opinion of parents on mandatory vaccination and its benefits

Survey (Santé publique France) conducted in 2019

- **Importance of vaccination (+5 points in 2019 compared to June 2018)**
 - **On children Health (91%)**
 - **For the protection of the community (87%)**
- **Mandatory vaccination**
 - 77% of parents adhere to the idea that it allows a reduction of epidemics.
 - 67% of parents of children born in 2017 and 2018 declare to be favorable.

Mandatory vaccination: a temporary benefit??

It does not seem the case (still) in 2020

- « Baromètre santé 2020 » relative to **vaccine acceptance**
 - 80% of persons questioned declare they are favorable in general to vaccination (significant increase compared to previous years and 2019: 73,9%).
 - « very favorable » advice for more than 1 / 3 of respondents (never observed since the early 2000's).

Mandatory vaccination: a temporary benefit??

It does not seem the case in 2020

In young children responding to mandatory vaccination a **persistent increase of vaccines uptake**

- Hexavalent* vaccine 3 doses :+ **6,4 points** in children aged 21 months and born during the 1st trimester 2019 (90.5%) compared to children born during the 1st trimester 2017 (84.1%)
- PCV 13: + **1.7 point** in children aged 21 months and born during the 1st trimester 2019 (91%) compared to children born during the 1st trimester 2017 (89.3%).
- Men C 1 dose + **12.2 points** in children aged 8 months and born during the 1st trimester 2020 (88%) compared to children, same age, born during the 1st trimester 2018 (75.8%)
- Men C 2 doses + **9.2 points** in children aged 21 mois and born during the 1st trimester 2019 (90.2%) compared to children, same age, born during the 1st trimester 2017 (81%).

Mandatory vaccination: a temporary benefit??

It does not seem the case in 2020

Children and adolescents born before the introduction of the law,
Santé publique France observes an increase of vaccine uptakes

- HPV vaccine (1st dose) + 5,7 points in girls aged 15 years born in 2005 (40,7%) compared to girls born in 2004 (34,9%)
- Men C conjugate vaccine catch-up: increase in all age groups over the age of 2 years.


Mandatory vaccination(s)

What about European countries??

**NO vaccine
obligation (N=16)**

Pays dénués d'obligations vaccinales
Allemagne
Autriche
Chypre
Danemark
Espagne
Estonie
Finlande
Irlande
Islande
Lituanie
Luxembourg
Norvège
Pays-Bas
Portugal
Royaume-Uni
Suède

**AT LEAST 1 vaccine
obligation (N = 13)**

Pays ayant au moins une vaccination obligatoire en 2017	Commentaires
Belgique	1 vaccin obligatoire
Bulgarie	> 4 vaccins obligatoires
Croatie	> 4 vaccins obligatoires
France	3 vaccins obligatoires (11 à partir de 2018)
Grèce	4 vaccins obligatoires
Hongrie	> 4 vaccins obligatoires
Italie 	10 vaccins obligatoires depuis 2017
Lettonie	> 4 vaccins obligatoires
Malte	4 vaccins obligatoires
Pologne	> 4 vaccins obligatoires
Roumanie	> 4 vaccins obligatoires
Slovaquie	> 4 vaccins obligatoires
Slovénie	9 vaccins obligatoires

Mandatory vaccination Outside of Europe



Australia

Since January 2016, social support (Child Care Benefit, Child Care Rebate and Family Tax Benefit).... Is accessible only to parents whom children < 20 years of age are adequately vaccinated

[http://www.immunise.health.gov.au/internet/immunise/publishing.nsf/Content/375B788BBCB7EC0FCA257F110017177E/\\$File/No-Jab-No-Pay-FSheet.pdf](http://www.immunise.health.gov.au/internet/immunise/publishing.nsf/Content/375B788BBCB7EC0FCA257F110017177E/$File/No-Jab-No-Pay-FSheet.pdf), accédé le 26/01/2018



Australian Government
Department of Health

No Jab, No Pay – New Immunisation Requirements for Family Assistance Payments

SUMMARY

From 1 January 2016:

- Only parents of children (less than 20 years of age) who are fully immunised or are on a recognised catch-up schedule can receive the Child Care Benefit, the Child Care Rebate and the Family Tax Benefit Part A end of year supplement. The relevant vaccinations are those under the National Immunisation Program (NIP), which covers the vaccines usually administered before age five. These vaccinations must be recorded on the Australian Childhood Immunisation Register (ACIR).



Since 2016, California state does not accept anymore any vaccine for personal reasons (*Polio, Diphtheria, Tetanus, Hepatitis B, Pertussis, Hib, Measles, Mumps, Rubella & Varicella*)

<http://eziz.org/assets/docs/IMM-1167.pdf> accédé le 26/01/2018

Special schools for unvaccinated kids

No Shots? No Records? No School.



Children will not be enrolled unless an immunization record is presented and immunizations are up-to-date.*

*If your child is unimmunized due to medical reasons, please notify us.

Go to ShotsForSchool.org to access information about immunization requirements, an interactive school look-up tool, implementation materials for schools, and educational materials for parents. ShotsForSchool.org

Conclusion

- **Mandatory vaccination for children under 2 years of age has led to a significant increase of uptake for the 11 valences up to 3 years later**
 - **The SARS-Cov2, from 2020, has temporarily reduced access to care; mid-2020, a sharp drop in vaccinations uptake is now progressively going back to the 2019's levels**
- **Decided (by law) it has been**
 - **Well supported by health authorities and all Health Professionals**
 - **Well accepted by the public with positive perception**
- **An indirect important benefit was an increase in HPV uptake in girls**
- **How long will this mandatory process be required? In the time of Covid?**