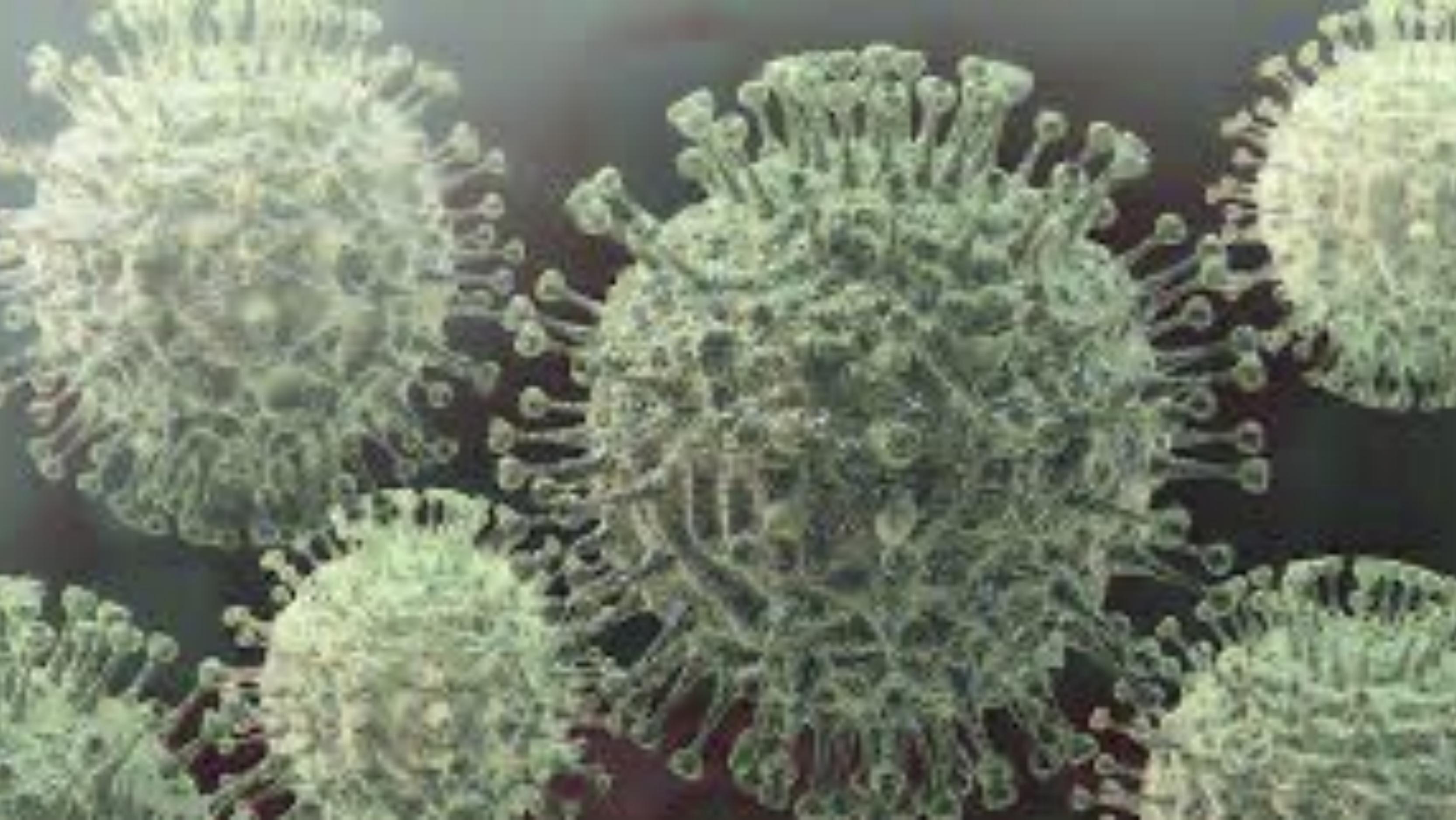


(Unexpected) consequences of the Covid-19 Pandemic on Paediatric Primary Care

**Dr Christine Magendie
Huningue, France
ECPCP, AFPA**





Last Updated at (M/D/YYYY)
05/10/2021 à 21:21

Total Cases

235661953

Total Deaths

4813797

Total Vaccine Doses Administered

6342172800

28-Day Cases

14103815

28-Day Deaths

232080

28-Day Vaccine Doses Administered

784110743

Cases | Deaths by
Country/Region/Sovereignty

US

28-Day: 3737717 |
53583
Totals: 43909490 | 704
550

United Kingdom

28-Day: 920796 |
3780
Totals: 8005361 | 1375
44

India

28-Day: 794205 |
8218
Totals: 33853048 | 449
260

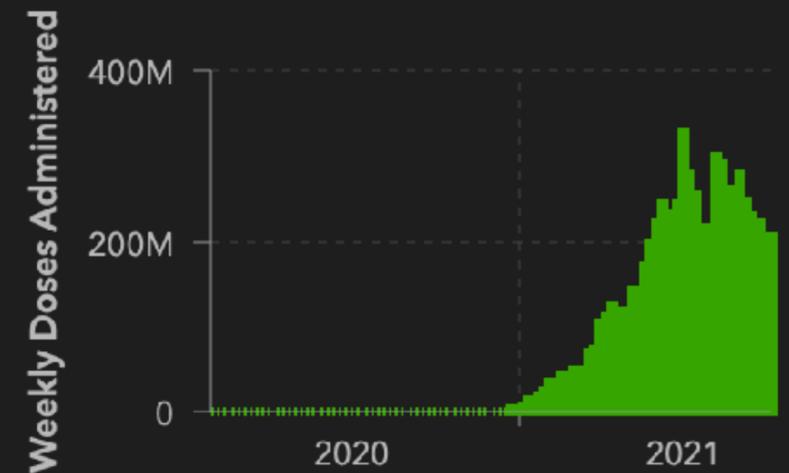
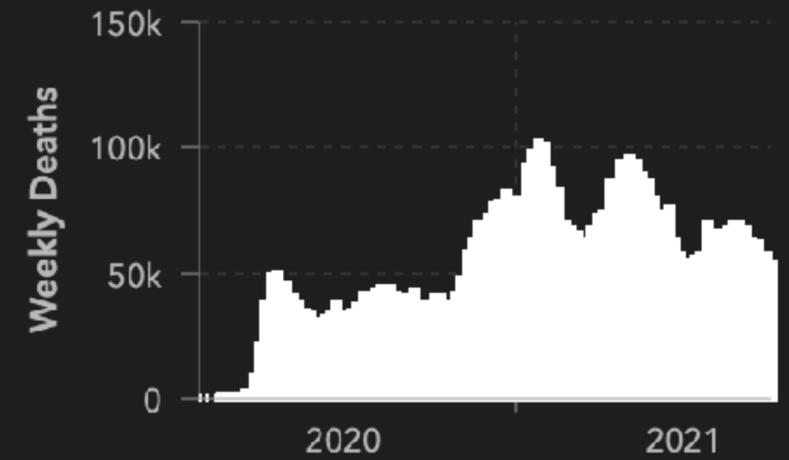
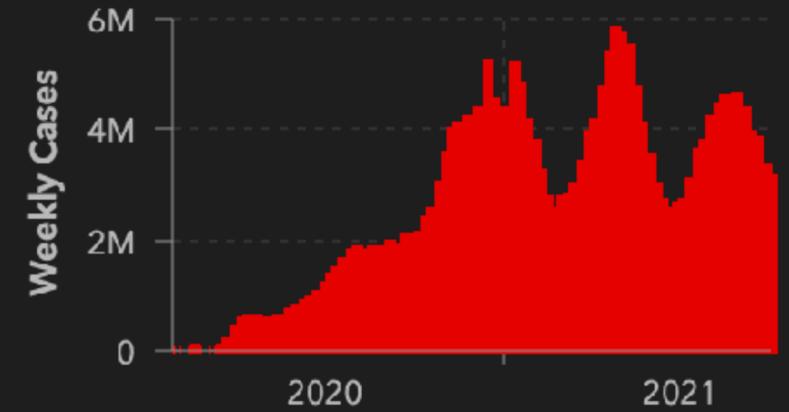
Turkey

28-Day: 748061 |



Esri, FAO, NOAA

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Admin0

28-Day

Weekly

Daily

Structure of the presentation

- Adjustments in daily paediatric practice in primary care
- Impact on prevalence of paediatric infectious disease
- Delayed diagnosis of potentially life-threatening disease
- New pathologies
- Psychological Impact on children
- Outlook
- Bonus

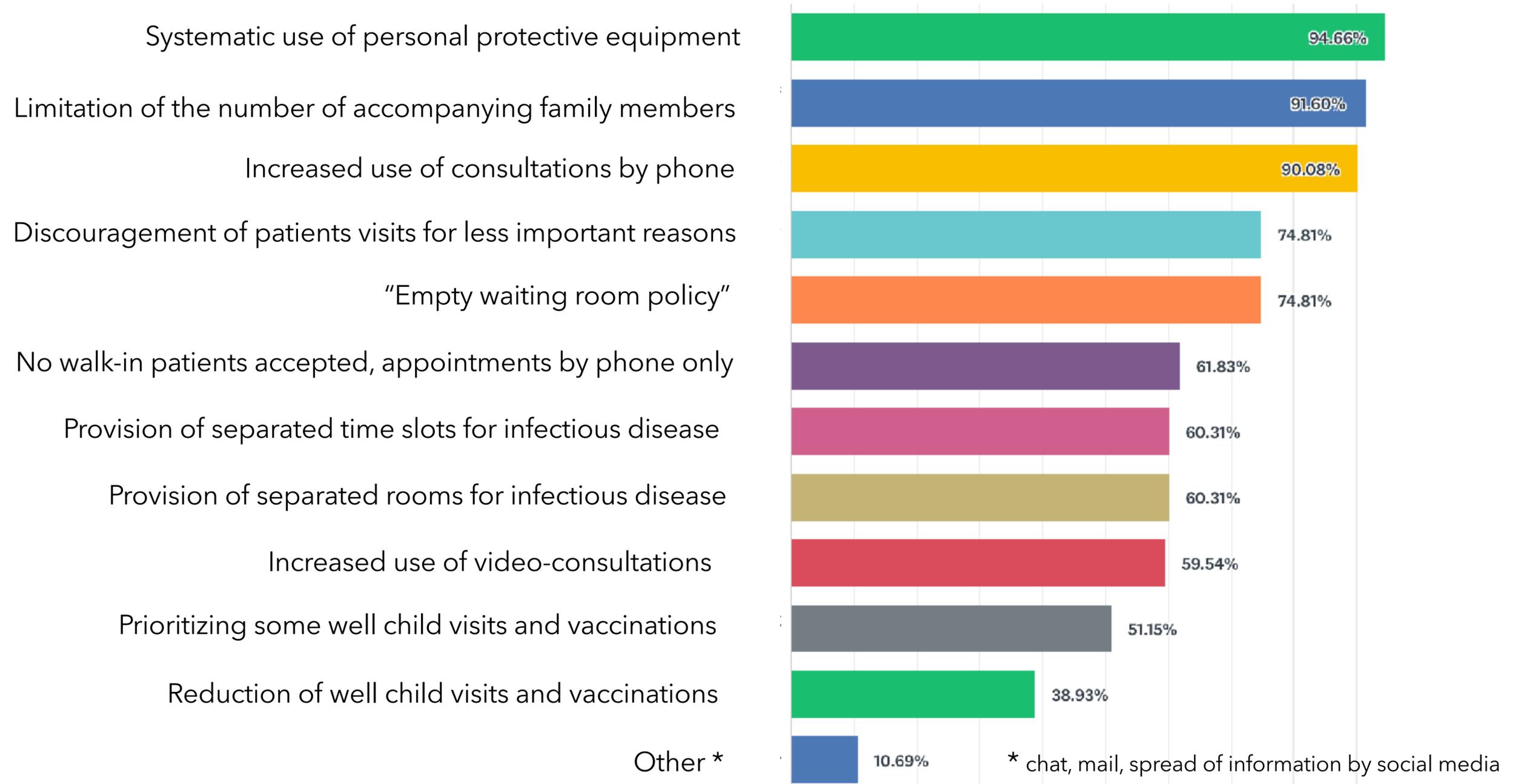
Impact of the Covid Pandemic on Paediatric Primary Care

Huss, Gottfried, Christine Magendie, Massimo Pettoello-Mantovani, et Elke Jaeger-Roman. « Implications of the COVID-19 Pandemic for Pediatric Primary Care Practice in Europe ». *The Journal of Pediatrics*. <https://doi.org/10.1016/j.jpeds.2021.03.004>.



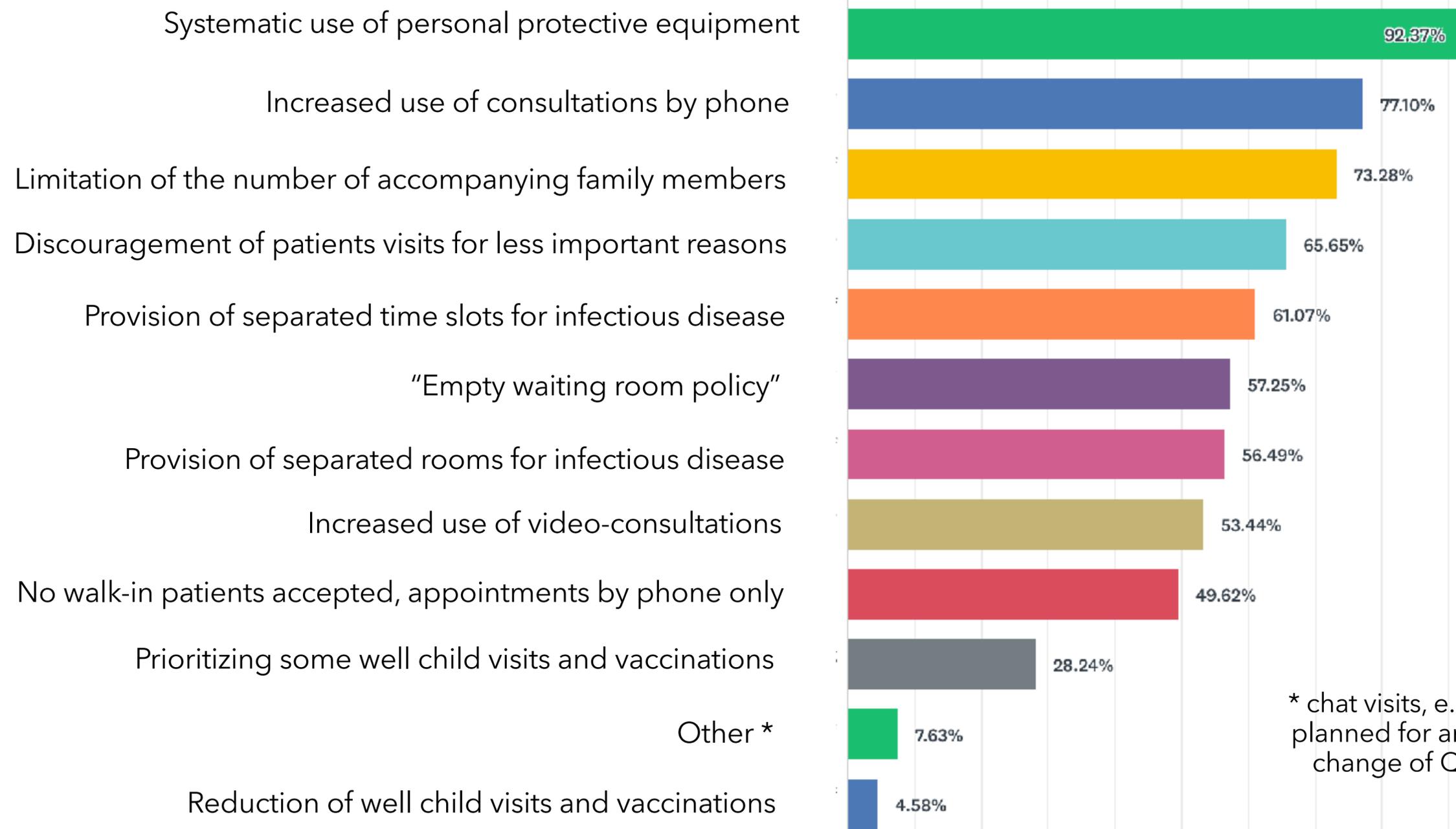
IMPLEMENTATION OF PREVENTATIVE MEASURES

HOW DID YOU ADJUST IN YOUR DAILY ROUTINE DURING LOCKDOWN ?



IMPLEMENTATION OF PREVENTATIVE MEASURES

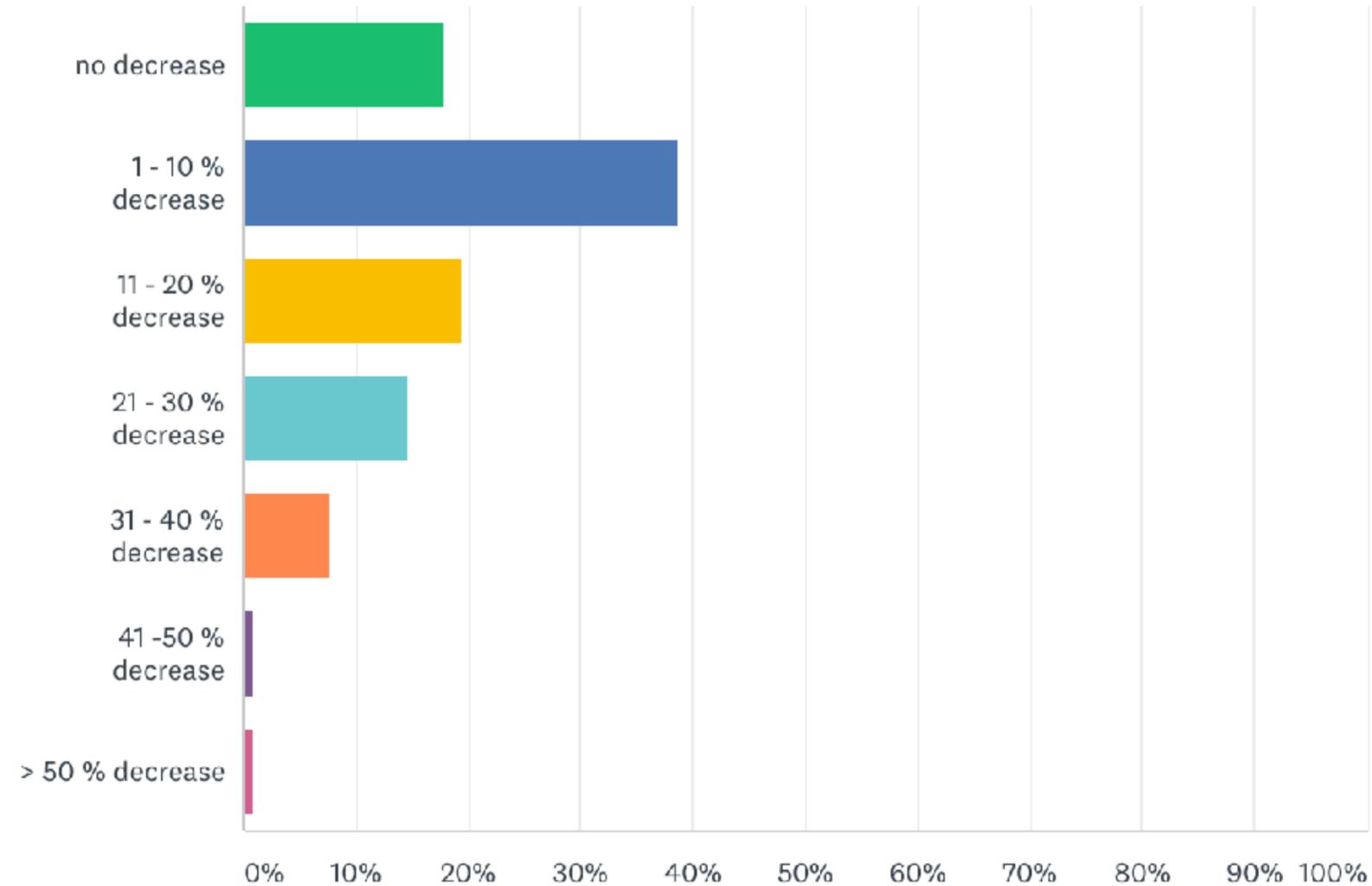
WHICH CHANGES WILL YOU PROBABLY MAINTAIN DURING THE NEXT 12 MONTHS ?



* chat visits, e.mail, more time planned for any consultation, change of QM guidelines

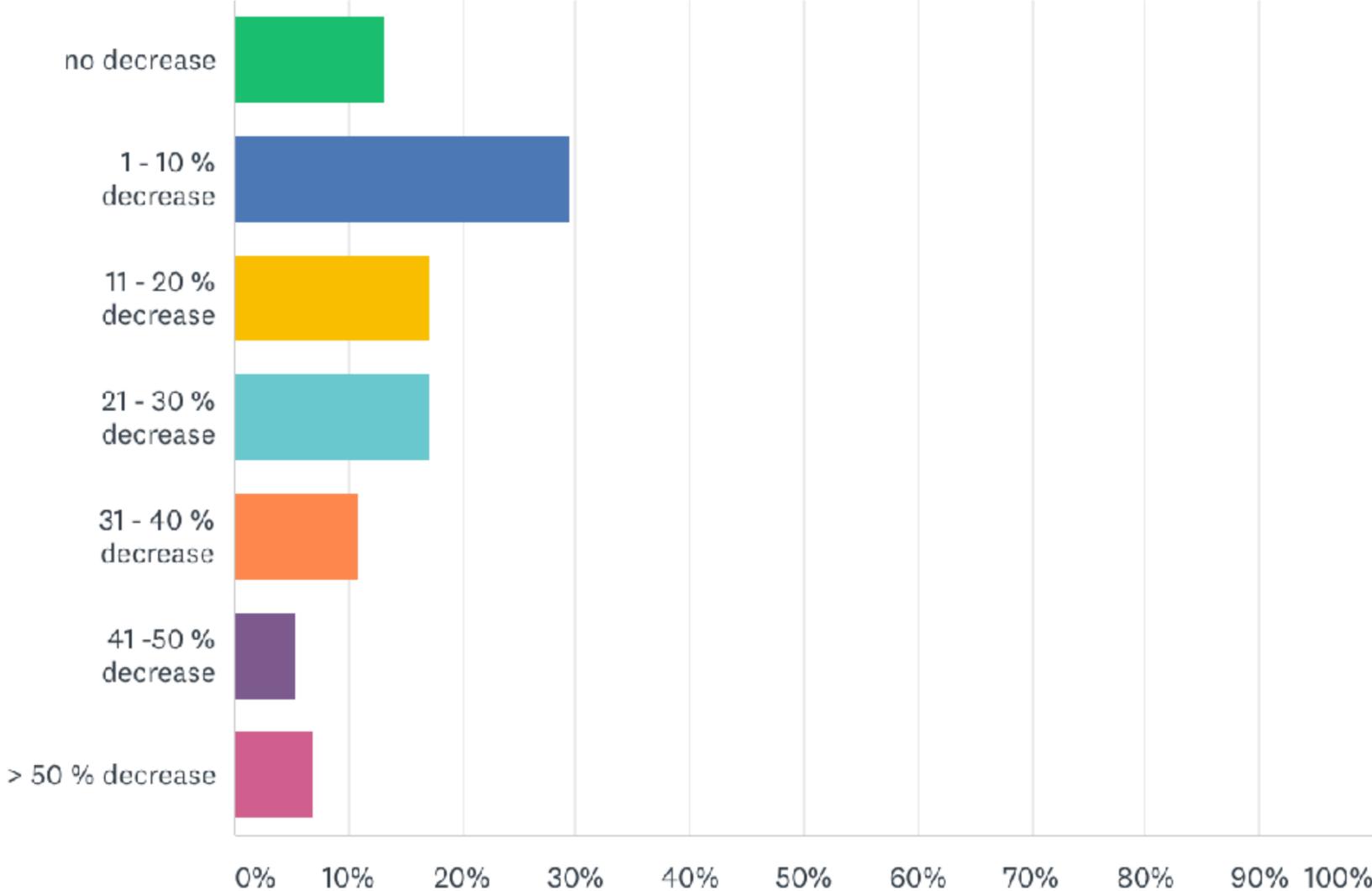
VACCINATION COVERAGE

PLEASE ESTIMATE THE DECREASE IN VACCINATION COVERAGE FOR INFANTS <2 YEARS IN YOUR COUNTRY SINCE THE START OF THE PANDEMIC?



VACCINATION COVERAGE

NOW PLEASE ESTIMATE THE DECREASE IN VACCINATION COVERAGE FOR CHILDREN OLDER THAN 2 YEARS SINCE THE START OF THE PANDEMIC?



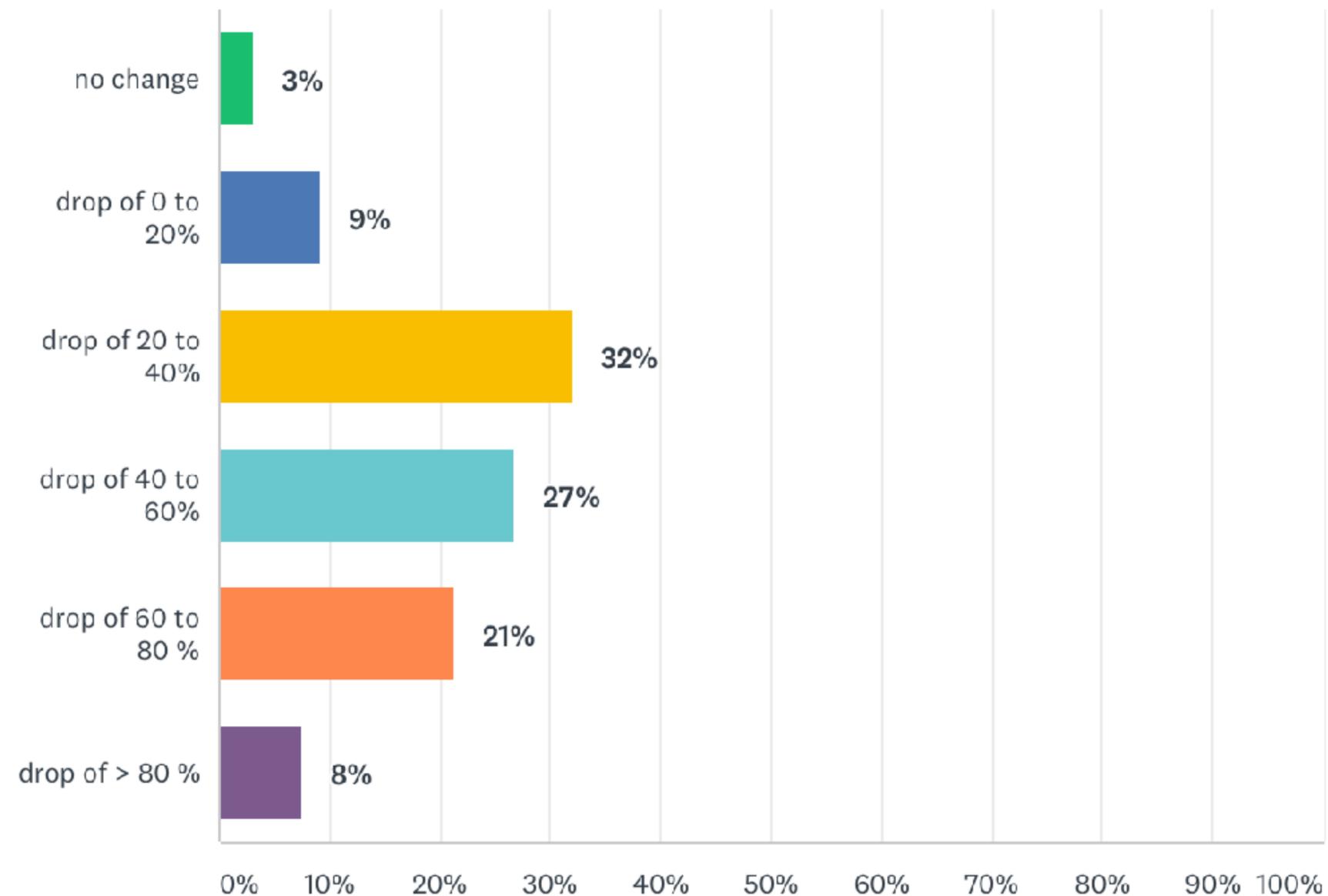
MAIN CHALLENGES TO VACCINATION UP-TAKE

▼ General fear to vaccinate in times of a pandemic		29.46%
▼ Family's fear to leave their homes during lockdown		48.84%
▼ Difficulty of providing sufficient time-slots in the practice		13.95%
▼ General vaccine hesitancy		1.55%
▼ Other (please specify)	Responses	6.20%

*Other: Closure of vaccination sites, dropout of vaccination doctors, recommendation by the authorities to delay non-mandatory vaccinations

DROP IN PRIMARY CARE CONSULTATIONS

PLEASE ESTIMATE BY WHAT PROPORTION YOUR CONSULTATIONS HAVE DROPPED DURING THE PEAK OF THE PANDEMIC IN YOUR COUNTRY COMPARED TO THE SAME PERIOD IN 2019.



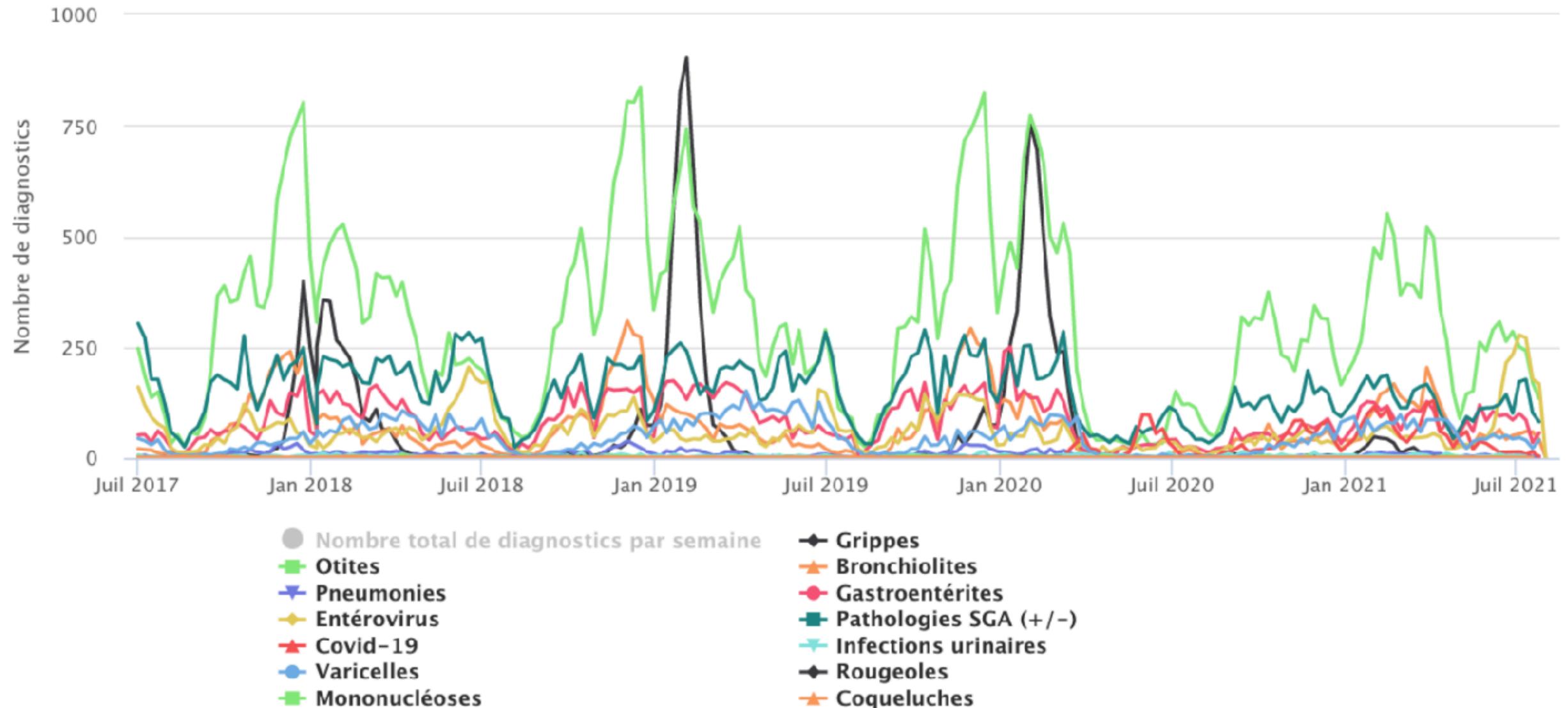
Impact on the epidemiology of common paediatric infectious disease



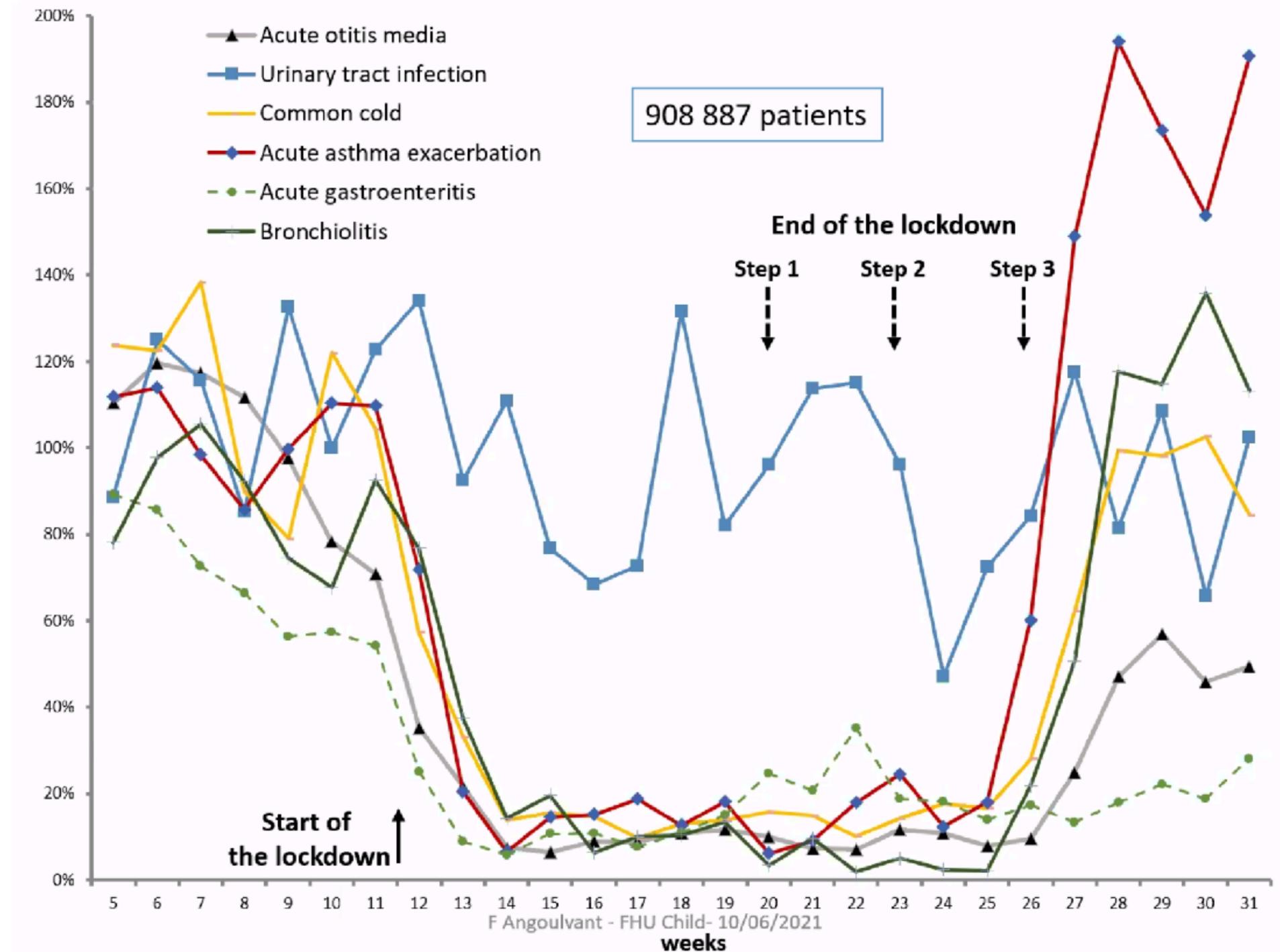
Distancing measures are highly effectif

As the modes of transmission of common pediatric infections are often similar to SARS COV-2, mitigation efforts have greatly reduced the circulation of RSV, influenza, rotavirus, varicella, and enteroviruses

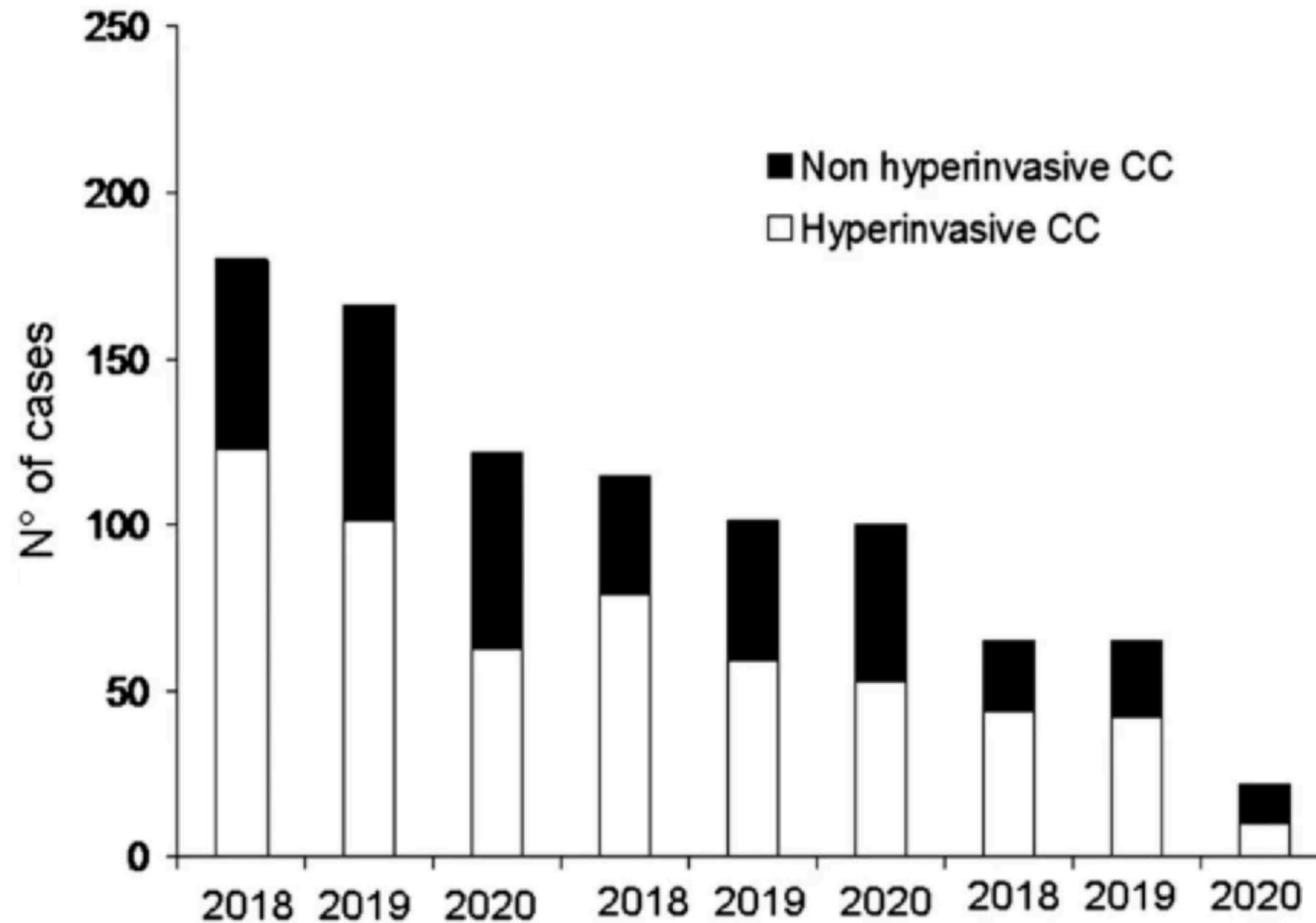
Data from the PARI network
Cohen, Robert MD et al.
New Approach to the Surveillance of Pediatric Infectious Diseases From Ambulatory Pediatricians in the Digital Era, The Pediatric Infectious Disease Journal: July 2021 - Volume 40 - Issue 7 - p 674-680
doi: 10.1097/INF.00000000000003116



Surveillance data from French paediatric emergency services February to August 2020



Impact of COVID-19 pandemic and the lockdown on invasive meningococcal disease

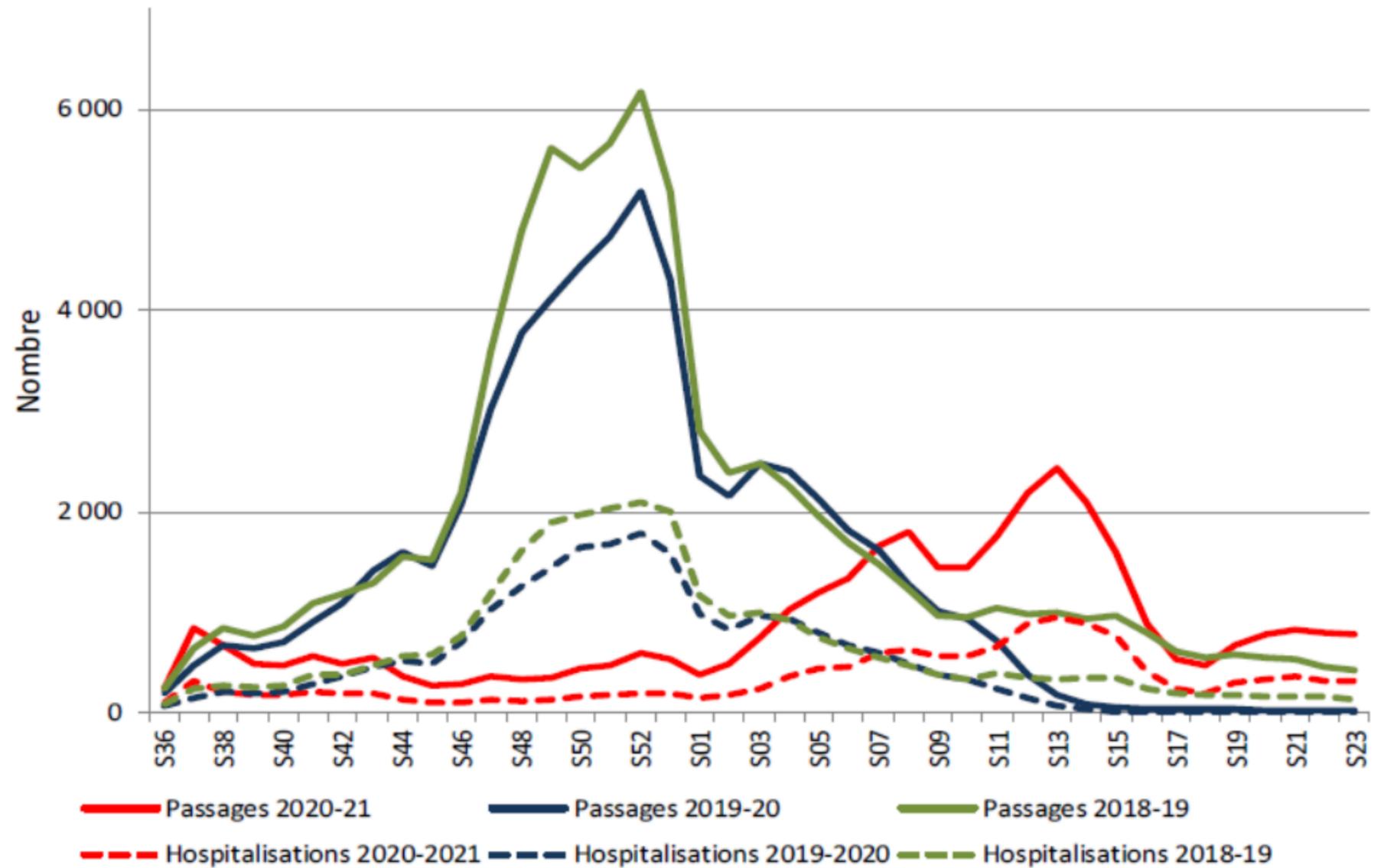


Distribution of isolates responsible for IMD according to serogroups (above) and genetic lineages (down) during the three periods of 2018–2020 as indicated. Hyperinvasive CC are CC11, CC32, CC41/44 and CC269 [3]

Impact on paediatric infectious disease epidemiology

Emergency service passages and hospitalisations for acute Bronchiolitis in France -> Break in seasonality

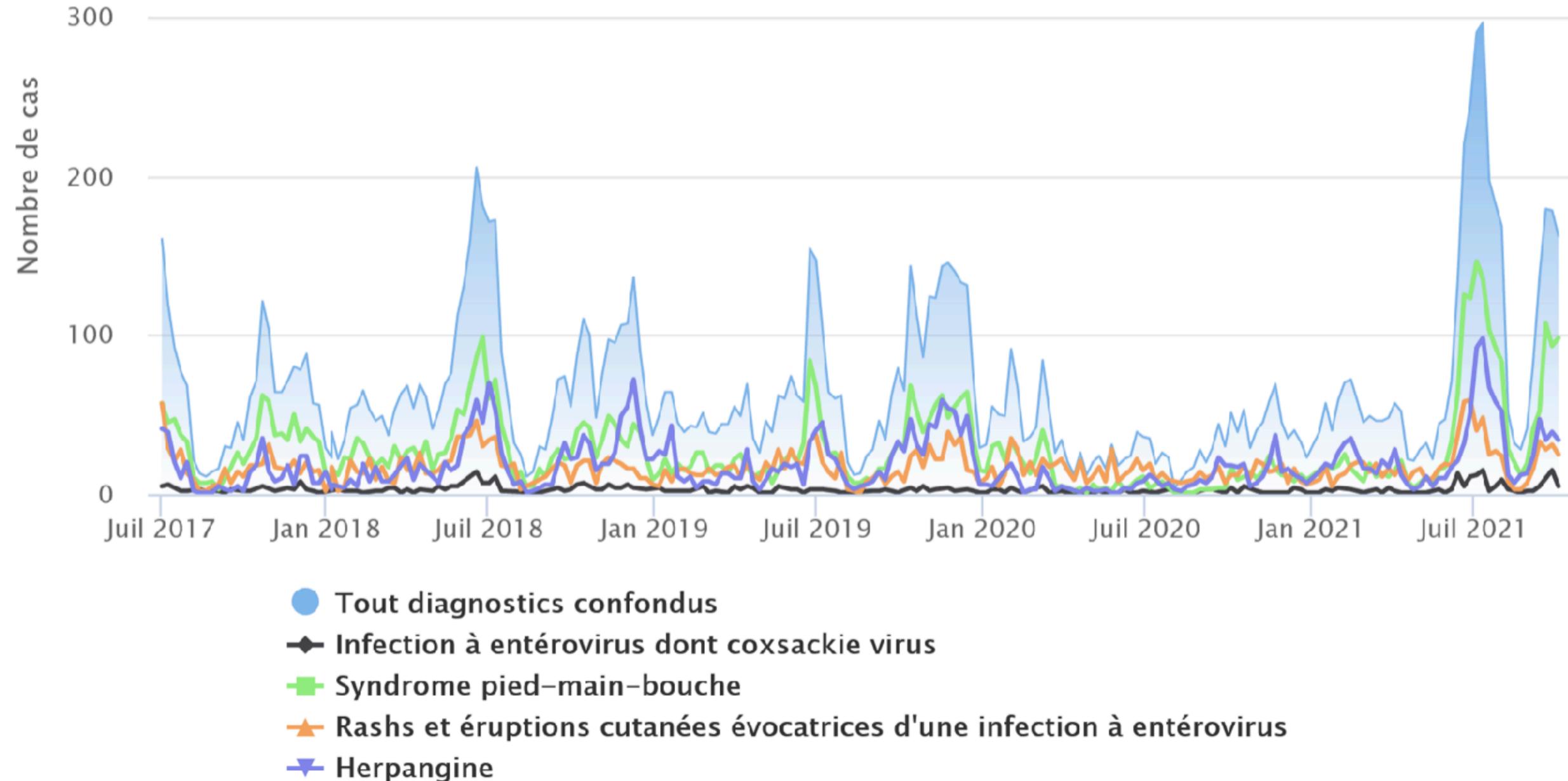
Passages et hospitalisations suite aux passages aux urgences pour bronchiolite en France métropolitaine, enfants de moins de 2 ans, 2018-2021



Source : bilan de la surveillance bronchiolite 2020-2021

Enterovirus Infection

Data from French Pari Network (infovac.fr/actualites/donnees-du-reseau-pari-semaine-du-27-septembre-2021)



Impact on paediatric infectious disease epidemiology

- Collapse of viral or viral-induced pathologies other than Covid 19 during lock-down
- Effectiveness of barrier measures on the transmission of other viruses
- Presumably, the adult population plays an important role in the transmission dynamics of viruses that cause paediatric viral epidemics, such as RSV

> [Clin Infect Dis.](#) 2020 Dec 29;ciaa1899. doi: 10.1093/cid/ciaa1899. Online ahead of print.

Unexpected lessons from the COVID-19 lockdowns in France: Low impact of school opening on common communicable pediatric airborne diseases

David Skurnik ^{1 2 3}, Alexis Rybak ^{4 5 6}, David Dawei Yang ^{7 8}, Stéphanie Pons ⁹, Romain Guedj ^{10 11}, Corinne Levy ^{5 12}, Robert Cohen ^{5 12}, Vincent Gajdos ^{13 14}, Loganayagi Vasante ¹⁵, Naïm Ouldali ^{5 16}, François Angoulvant ^{7 8}



What will we need to do?

While there has been an obvious short term benefit we now have to anticipate the consequences

Achieve optimal vaccination coverage for all recommended paediatric vaccines, timely catch up on immunization delays

Adapt vaccination recommendations to include all available vaccines to prevent « obligatory » paediatric disease (rotavirus, chickenpox) and invasive infections (meningitis)

For pathogens for which there is no vaccine:

- Anticipate response capacities
- Early detection of outbreaks.
- Mitigation efforts.

Review

Pediatric Infectious Disease Group (GPIP) position paper on the immune debt of the COVID-19 pandemic in childhood, how can we fill the immunity gap?

Robert Cohen^{a,b,c,d,e}, Marion Ashman^{a,f}, Muhamed-Kheir Taha^g, Emmanuelle Varon^h, François Angoulvant^{e,i,j}, Corinne Levy^{a,b,c,d,e,*}, Alexis Rybak^{a,d,e}, Naim Ouldali^{a,d,e,j,k}, Nicole Guiso^l, Emmanuel Grimpel^{e,m}

Delayed presentation of life threatening disease

DELAYED PRESENTATIONS OF SERIOUS OR LIFE THREATENING DISEASES

Diabetic Ketoacidosis

PIMS/MIS-C and Kawasaki Disease

Haematological and Oncological Disease

Appendicitis, Peritonitis

Child abuse

Serious bacterial infections such as urinary tract infection, meningitis, pneumonia

Delayed access to urgent intervention services

Acute cardiac problems

More severe presentations in the emergency room

Delayed elective surgeries

Delayed Diagnosis of Serious Illness: DM I

- Overall less cases as DM Type I is a virus-triggered disease
- Less consultations
- Delayed diagnosis with worse outcome

Table 1—Diabetes onset, DKA at onset, and acute complications in the pediatric population (0–15 years) observed during COVID-19 pandemic (20 February–14 April 2020) compared with the same period in 2019

	2020		2019		Δ	<i>P</i>
	<i>n</i>	%	<i>n</i>	%		
Patients with diabetes onset	160	—	208	—	–48	—
Patients with DKA (pH <7.3)	61	38.1	86	41.3	–3.2	0.08
Patients with severe DKA (pH <7.1)	27	16.9	31	14.9	2.0%	0.09
Proportion of DKA patients with severe DKA	27	44.3	31	36.0	8.3%	0.03
DKA episodes in patients with established diabetes	13	—	22	—	–9	—
Severe hypoglycemia episodes in patients with established diabetes	10	—	13	—	–3	—

Delayed Diagnosis of Serious Illness

Similar reports from a survey in Great Britain

Table 1 Summary of the main conditions reported in children and the perinatal period and deaths where delayed presentation was considered by the reporting paediatrician to be a contributing factor

	n
Top 5 delayed diagnoses reported	
Diabetes mellitus (diabetic ketoacidosis)	44 (23)
Sepsis	21
Child protection	14
Malignancy	8
Appendicitis	6
Delayed perinatal presentations	
Pregnant women presenting late in labour	2
Hypoxic ischaemic encephalopathy	1
Unbooked pregnancy resulting in adverse outcomes	1
Poor feeding after early hospital discharge	2
Dehydration following poor feeding	4
Reported deaths associated with delayed presentation	
Sepsis	3
New diagnosis of malignancy	3
Cause not reported	2
New diagnosis of metabolic disease	1

New Pathologies & Lifestyle Changes



OBSERVED IMPACT ON CHILDREN DURING LOCKDOWN

DID YOU PERSONALLY OBSERVE AN IMPACT OF LOCKDOWN ON CHILDREN ?

ANSWER CHOICES	RESPONSES
Increasing use of electronic media	95.41%
Lack of physical activity	75.23%
Anxiety	71.56%
Increase in BMI	59.63%
Parents dedicated more valuable time for their children	58.72%
Behavioral problems	56.88%
Increasing gap / inequities between poor and wealthy families	50.46%
Sleep disorders	48.62%
Accentuated learning difficulties	46.79%
Serious school difficulties / school drop-out	27.52%
Breakage of familiar cohesion	20.18%
Other, please provide detail here:	Responses 4.59%

* Other:
positive
impact for
children with
autism and
TDAH,
loneliness/
isolation,
Increased risk
in risk families

New pathologies linked to lifestyle changes

Increase in sedentary behaviour and its consequences

- Increased sedentary behaviour
- Decreased level of physical activity <https://doi.org/10.1186/s12966-020-00987-8>
- Impaired motor skill development and physical fitness <https://doi.org/10.3390/children8030199>
- Increased screen time <https://doi.org/10.1016/j.eclinm.2021.101026>
- Increase in BMI

Chambonniere C, Lambert C, Fearnbach N, et al. Effect of the COVID-19 lockdown on physical activity and sedentary behaviors in French children and adolescents: New results from the ONAPS national survey. *Eur J Integr Med.* 2021;43:101308. doi:10.1016/j.eujim.2021.101308



Myopia incidence and lifestyle changes among school children during the COVID-19 pandemic: a population-based prospective study

CZhang X,heung SSL, Chan H-N, *et al. Br J Ophthalmol* Epub ahead of print: doi:10.1136/ bjophthalmol-2021-319307



Psychological Impact on children

Psychological Impacts on children

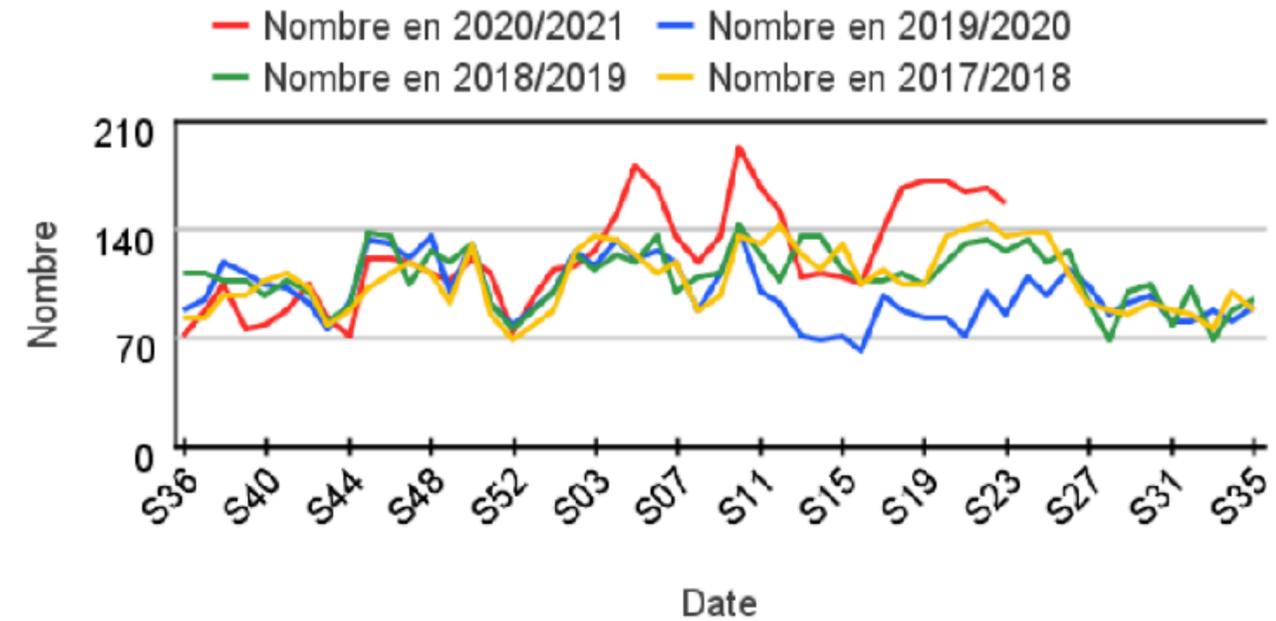
Climate of uncertainty

- Invisible enemy, emotional responses depend on the attitude of the relevant adults
- Increased anxiety and depression from the onset of the pandemic
- A not-so-easy deconfinement: cabin syndrome, children anxious to get out of their bubble, first signs of psychological after-effects
- 40% increase in admissions to paediatric emergency services for psychological reasons (anxiety disorders, depression, suicide attempts, addiction, eating disorders, agitation, abuse)

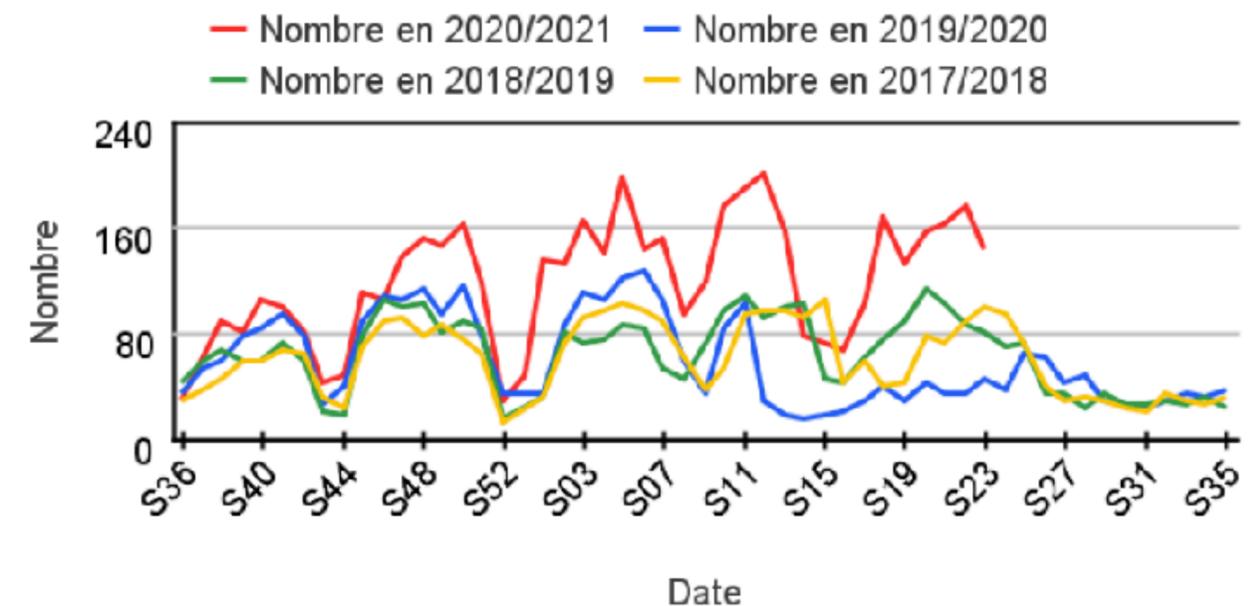
Psychological Impacts on children



Nombre de passages pour GS – Moins de 15 ans - France



Nombre de passages pour Trouble de l'humeur – Moins de 15 ans - France



Symptoms according to age

Children < 2 years

- Impaired psychomotor development
- Mood disorders (apathy or agitation)
- Inconsolable crying
- Sleep and eating disorders
- Separation difficulties

Children 3 to 6 years

- Repetitive behaviours and patterns
- Avoidance behaviours
- Sleeping disorders
- Secondary encopresis and enuresis
- Somatic complaints
- Mood disorders (sadness)

Symptoms according to age

Children aged 7 to 12 years

- Anxiety
- Obsessive-Compulsive Behaviour
- Inhibition
- Lack of interest in recreational activities
- Difficulty concentrating, reduced school performance

Adolescents

- Self- or heteroaggressive behaviours
- Substance abuse
- Eating disorders
- Loss of confidence in the future
- Suicidal ideation and actions

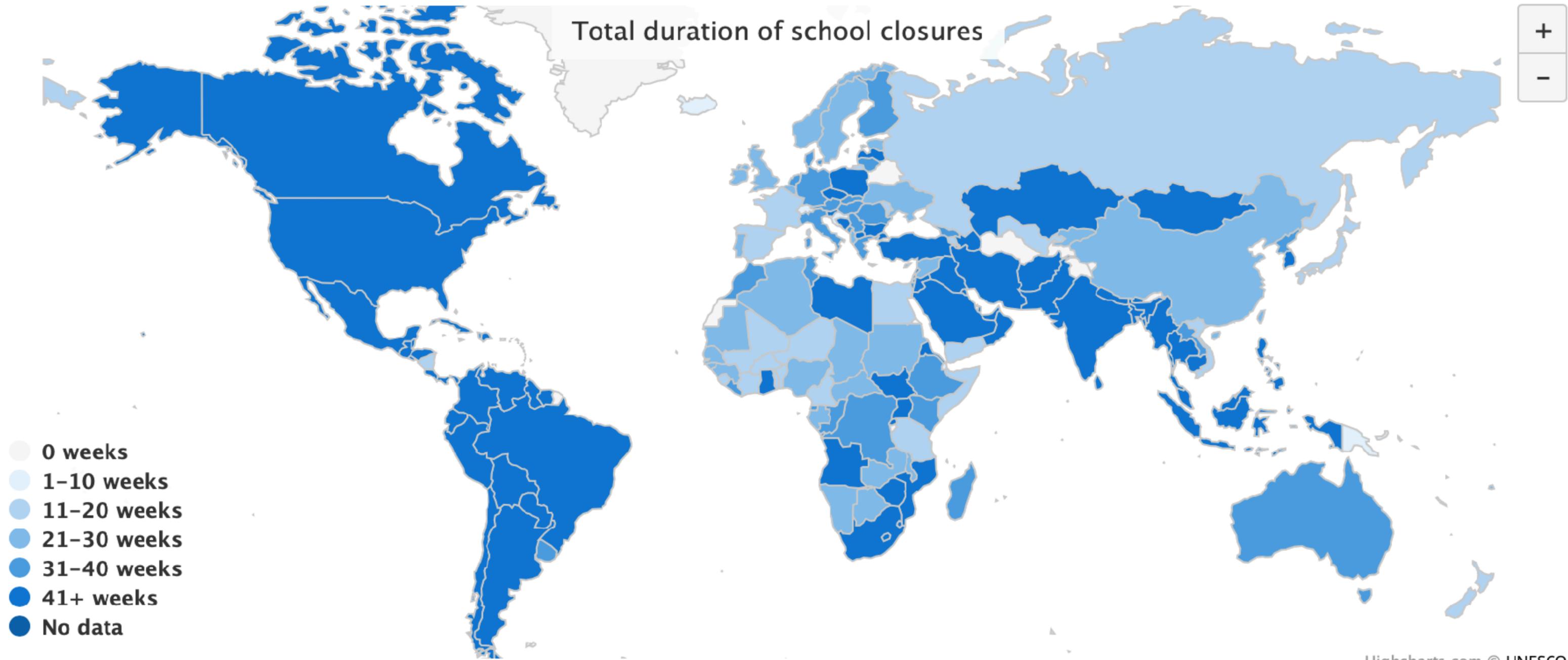
BACK TO SCHOOL ?

SHOULD ALL CHILDREN GO BACK TO THEIR CLASS-ROOMS THIS FALL ?

ANSWER CHOICES	RESPONSES
▼ Yes, because education is a key factor of children's health and well being.	47.69%
▼ Only if adequate barrier measures can be ensured in the schools..	27.69%
▼ Yes, because children are not much affected by the pandemic.	14.62%
▼ No, because on-site schooling would be truly irresponsible.	5.38%
▼ On-site schooling should only apply to children under age 10.	2.31%
▼ Other, please explain :	Responses 2.31%

Total duration of school closures

Data



unicef  | for every child



« THE CLIMATE CRISIS IS A CHILD RIGHTS CRISIS »

The logo consists of two overlapping dark green rectangles. The front rectangle is slightly offset to the left and bottom, containing the text '2slides' on the top line and '4future' on the bottom line in white, bold, sans-serif font. The back rectangle is slightly offset to the right and top.

**2slides
4future**

« The life of every child born today will be profoundly affected by climate change. How we respond will determine the world we live in tomorrow and will shape the health of children across the globe, at every stage of their lives. »

2019 Lancet Countdown on Health and Climate Change

2slides
4future

Climate change

- is real
- it's us
- experts agree
- it's bad
- there is hope.

Antony Leiserowitch, Yale University



<https://climateacceptancestudios.com/ridefortheirlives>

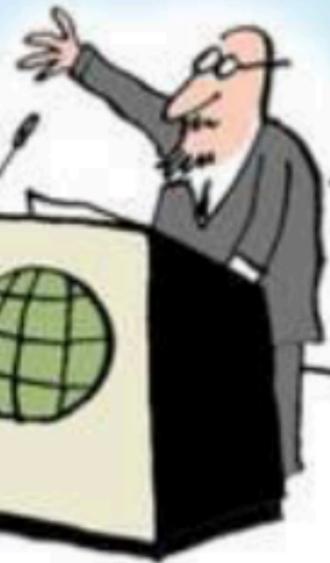




CLIMATE SUMMIT

WHAT IF IT'S
A BIG HOAX AND
WE CREATE A BETTER
WORLD FOR NOTHING?

- ENERGY INDEPENDENCE
- PRESERVE RAINFORESTS
- SUSTAINABILITY
- GREEN JOBS
- LIVABLE CITIES
- RENEWABLES
- CLEAN WATER, AIR
- HEALTHY CHILDREN
- ETC. ETC.



JOEL PETT
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