

Le COVID a t'il modifié les Syndromes Coronariens Aigus en France ?



Sujet très tendance



acute coronary syndrom covid

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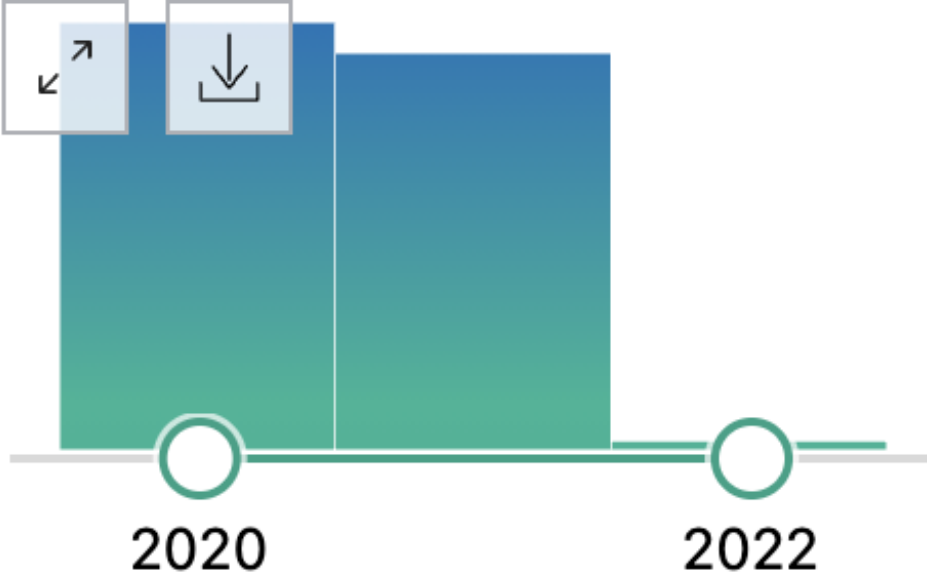
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SCA et COVID

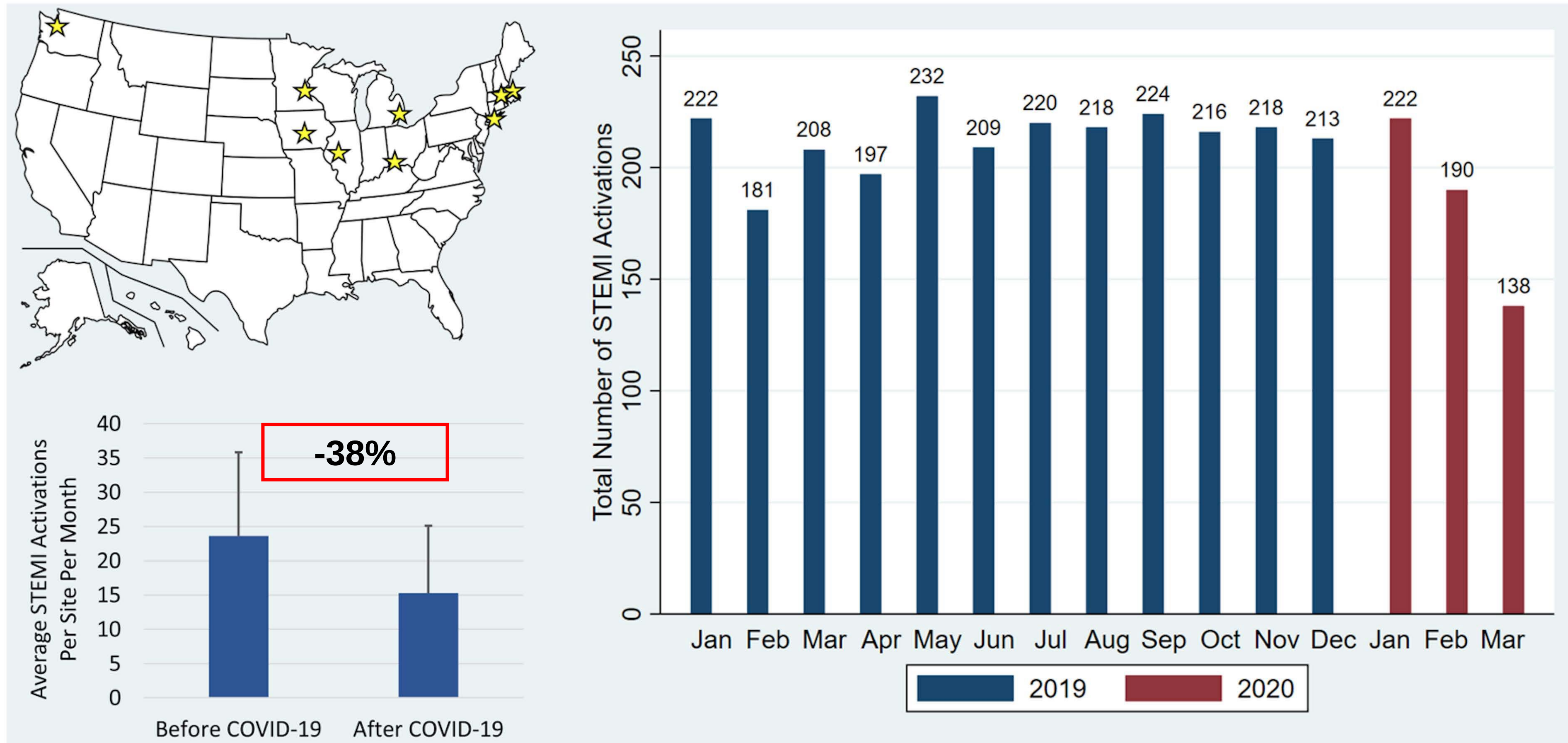
Mars 2020 : 1^{er} confinement

Où sont passés les IDM ?



USA

Côte est / registre / 9 centres



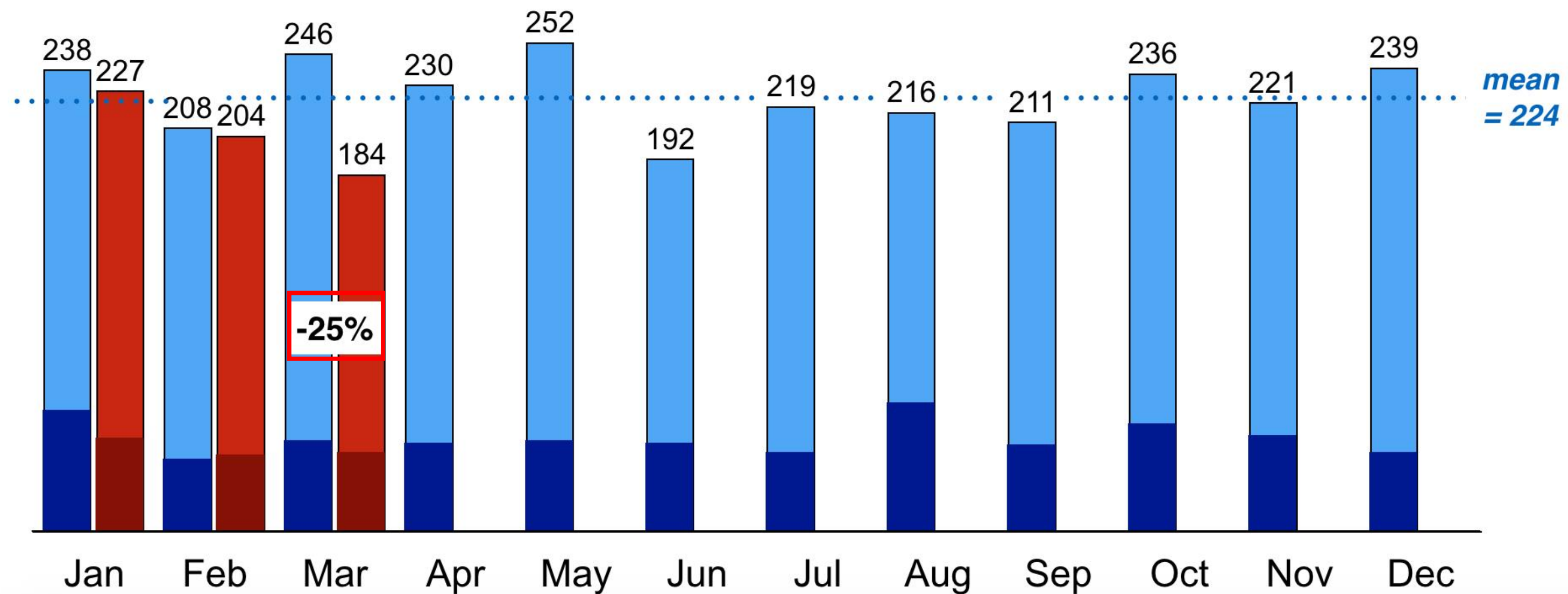
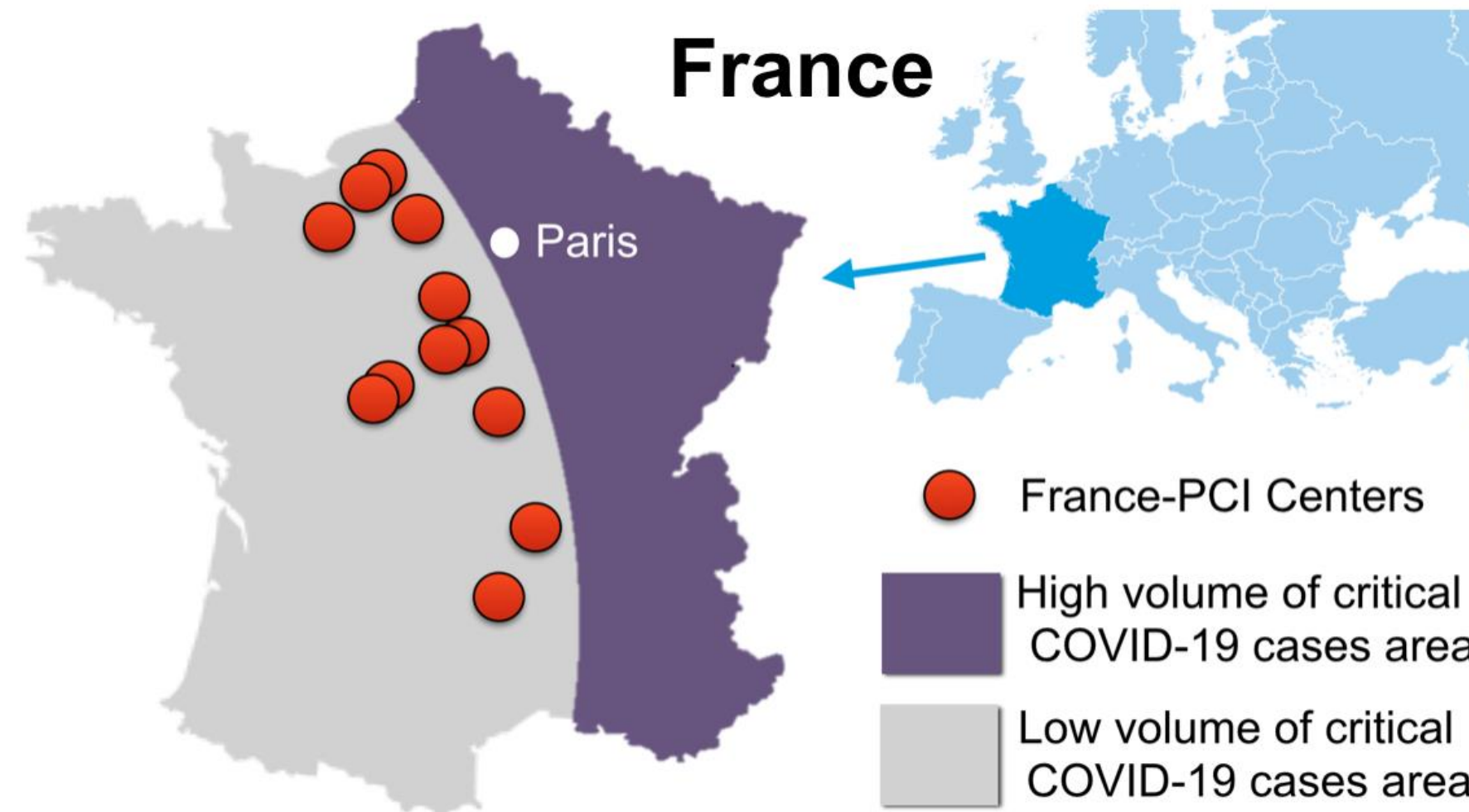


France

Registre / 12 centres

Total number of
STEMI per month

STEMI<24h	STEMI>24h	2019
STEMI<24h	STEMI>24h	2020



Tout les SCA / Italy

Table 1. Comparison of Hospital Admissions for Acute Coronary Syndrome (ACS) in Northern Italy between the Onset of the Covid-19 Outbreak and Two Control Periods.*

ACS Subtype	No. of Patients	Study Period (N=547)	Control Periods	
			Same Year (N= 899)	Previous Year (N= 756)
All ACS	2202			
No. of daily admissions		13.3	18.0	18.9
Incidence rate ratio (95% CI)			0.74 (0.66–0.82)	0.70 (0.63–0.78)
P value			<0.001	<0.001
STEMI	957			
No. of daily admissions		6.1	7.8	8.0
Incidence rate ratio (95% CI)			0.77 (0.66–0.91)	0.75 (0.64–0.89)
NSTEMI	832			
No. of daily admissions		4.2	7.1	7.5
Incidence rate ratio (95% CI)			0.59 (0.49–0.71)	0.56 (0.46–0.67)
Unstable angina	413			
No. of daily admissions		3.1	3.1	3.4
Incidence rate ratio (95% CI)			1.00 (0.79–1.26)	0.91 (0.72–1.16)

STEMI -25%

NSTEMI -44%

Chute brutale et globale de
tout les SCA pendant
confinement

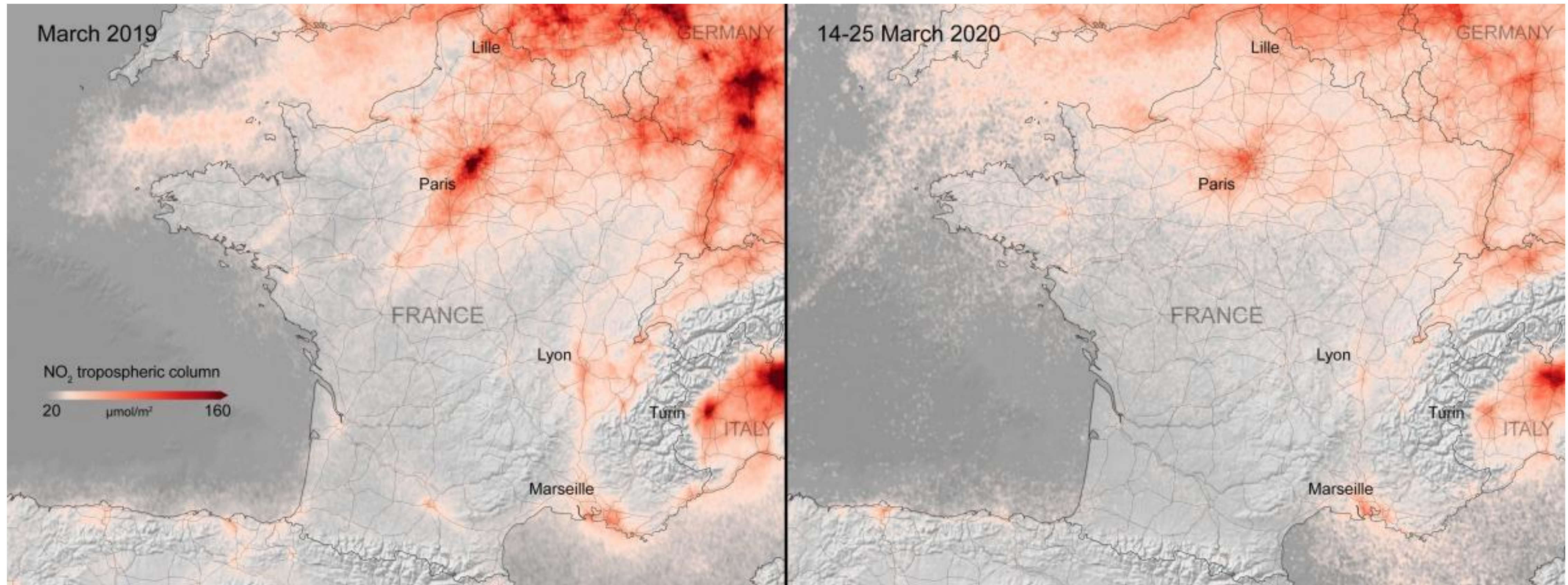
Baisse réelle de l'incidence des SCA ?

Hypothèses ?

Baisse apparente des SCA ?

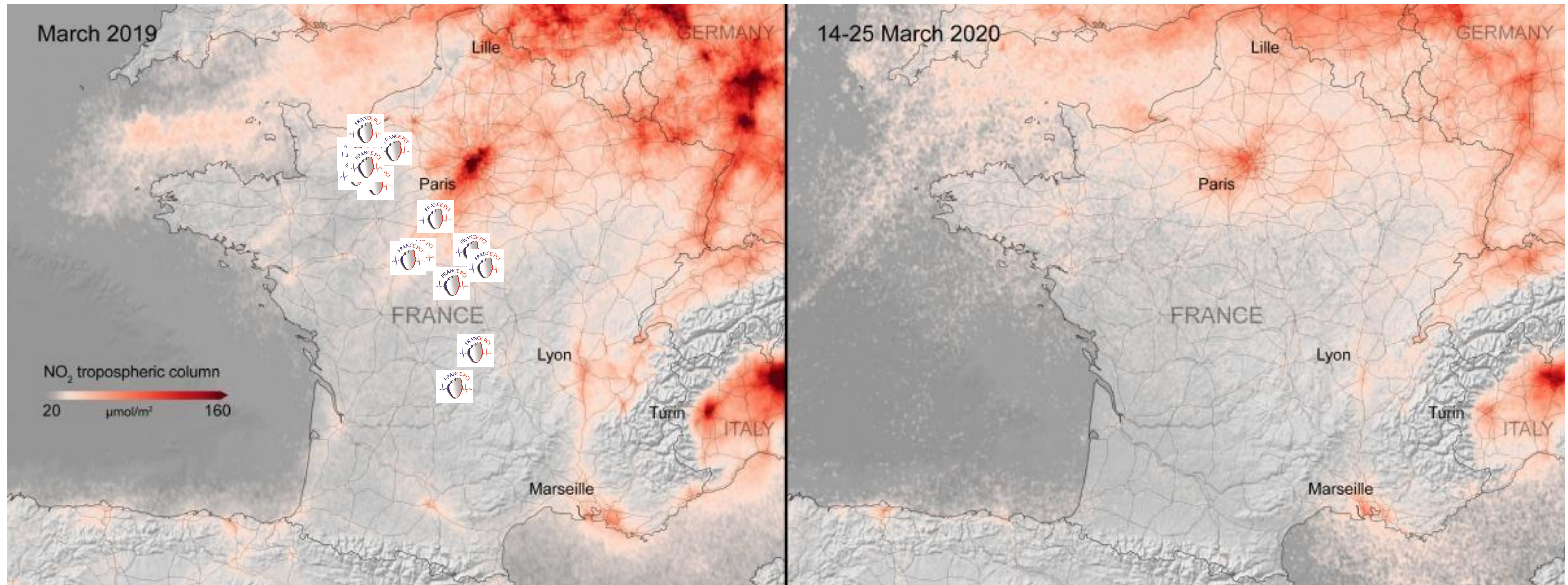
Baisse réelle de l'incidence ?
Causes possibles ?

Moins de Pollution = Moins d'IDM ?

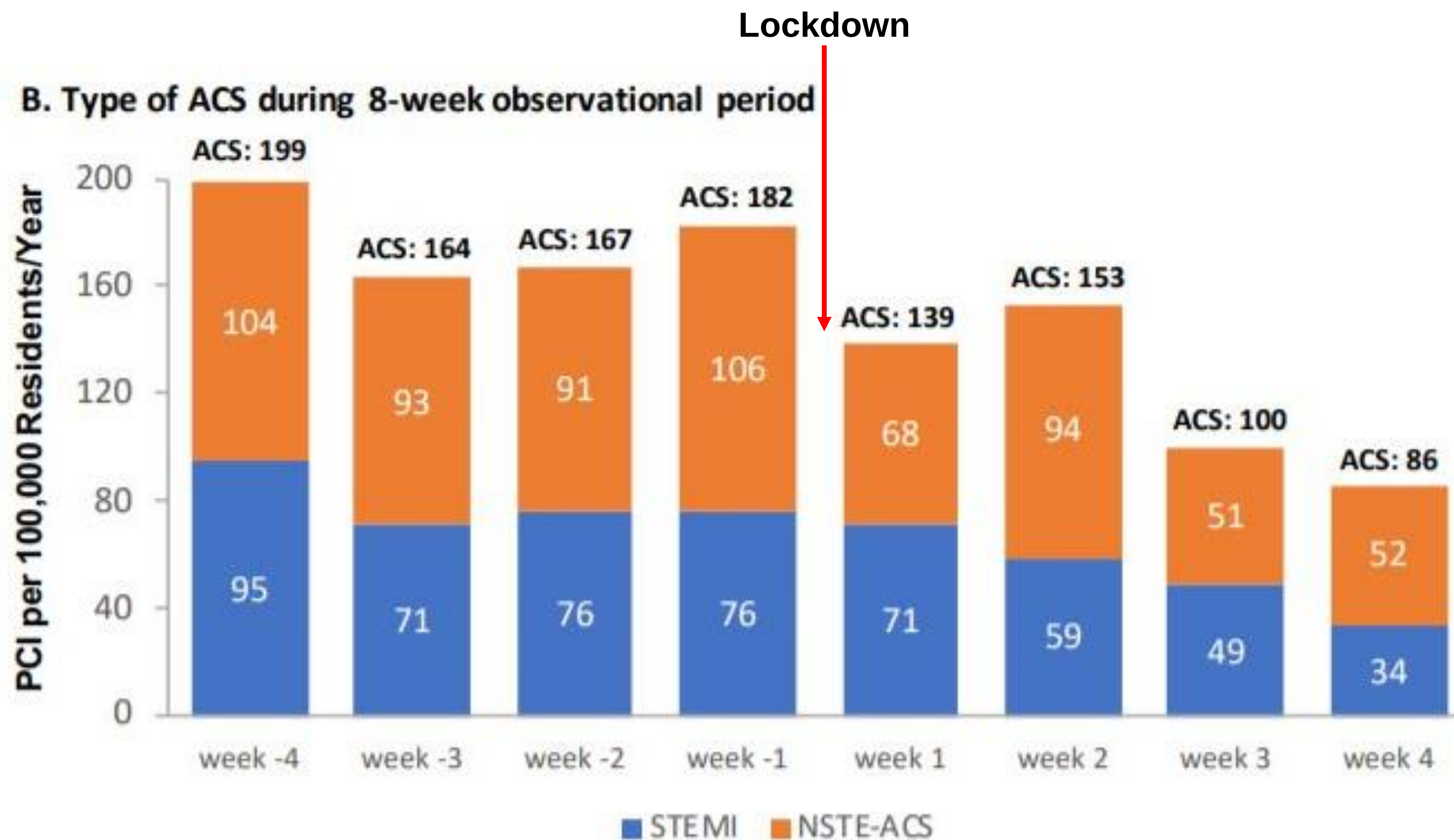


- 40 % de dioxyde d'azote et – 10 % particules fines : -11 000 DC en Europe (-1 200 en France)

Centres France PCI dans régions peu impactées par pollution



Chute brutale et intense



Short-term exposure to environmental parameters and onset of ST elevation myocardial infarction. The CARDIO-ARSIF registry[☆]

Christophe Caussin^a, Sylvie Escolano^b, Hazrije Mustafic^b, Sophie Bataille^c, Muriel Tafflet^b, Edouard Chatignoux^d, Yves Lambert^e, Hakim Benamer^{f,g}, Philippe Garot^h, Patricia Jabre^b, Laurent Delormeⁱ, Olivier Varenne^j, Emmanuel Teiger^k, Bernard Livarek^l, Jean-Philippe Empana^{b,1}, Christian Spaulding^{b,m,1,*}, Xavier Jouven^{b,m,1}, for the CARDIO-ARSIF Registry Investigators



Table 3
Excess of relative risk of STEMI occurrence associated with air pollutants, weather characteristics and influenza epidemic.

Environmental variable	ERR, in % (95% CI)	Increment to which ERR refers	p-Value
<i>Temperature measures</i>			
Maximal temperature	5.0 (2.1; 7.8)	−10 °C	0.001
Maximal temperature variation ^a	−0.3 (−7.3; 6.2)	−10 °C	0.93
Minimal temperature	6.0 (2.1; 9.7)	−10 °C	0.003
Temperature range	6.3 (0.5; 11.8)	−10 °C	0.03
<i>Other meteorological characteristics</i>			
Humidity	1.3 (−0.4; 3.1)	10%	0.13
Mean wind velocity	−0.7 (−17.2; 19.1)	10 m/s	0.94
Atmospheric pressure	−3.8 (−23.4; 20.7)	100 hPa	0.74
Maximal wind velocity	−1.7 (−12.2; 10.0)	10 m/s	0.76
<i>Air pollutants</i>			
O ₃	0.6 (−1.2; 0.1)	10 µg/m ³	0.10
PM _{2.5}	0.7 (−1.4; 2.8)	10 µg/m ³	0.50
PM ₁₀	−0.1 (−1.8; 1.7)	10 µg/m ³	0.94
NO ₂	0.1 (−1.3; 1.5)	10 µg/m ³	0.92
SO ₂	3.9 (−0.9; 8.9)	10 µg/m ³	0.12
CO	0.0 (−0.1; 0.1)	10 µg/m ³	0.69
Influenza epidemic	8.9 (3.2; 14.9)	yes (vs. no)	0.002

Occurrence d’IDM / j

Impact
de la température
de la grippe

Aucun Impact
du taux de microparticules
ni du taux de dioxyde d’azote



Confinement et stress ?



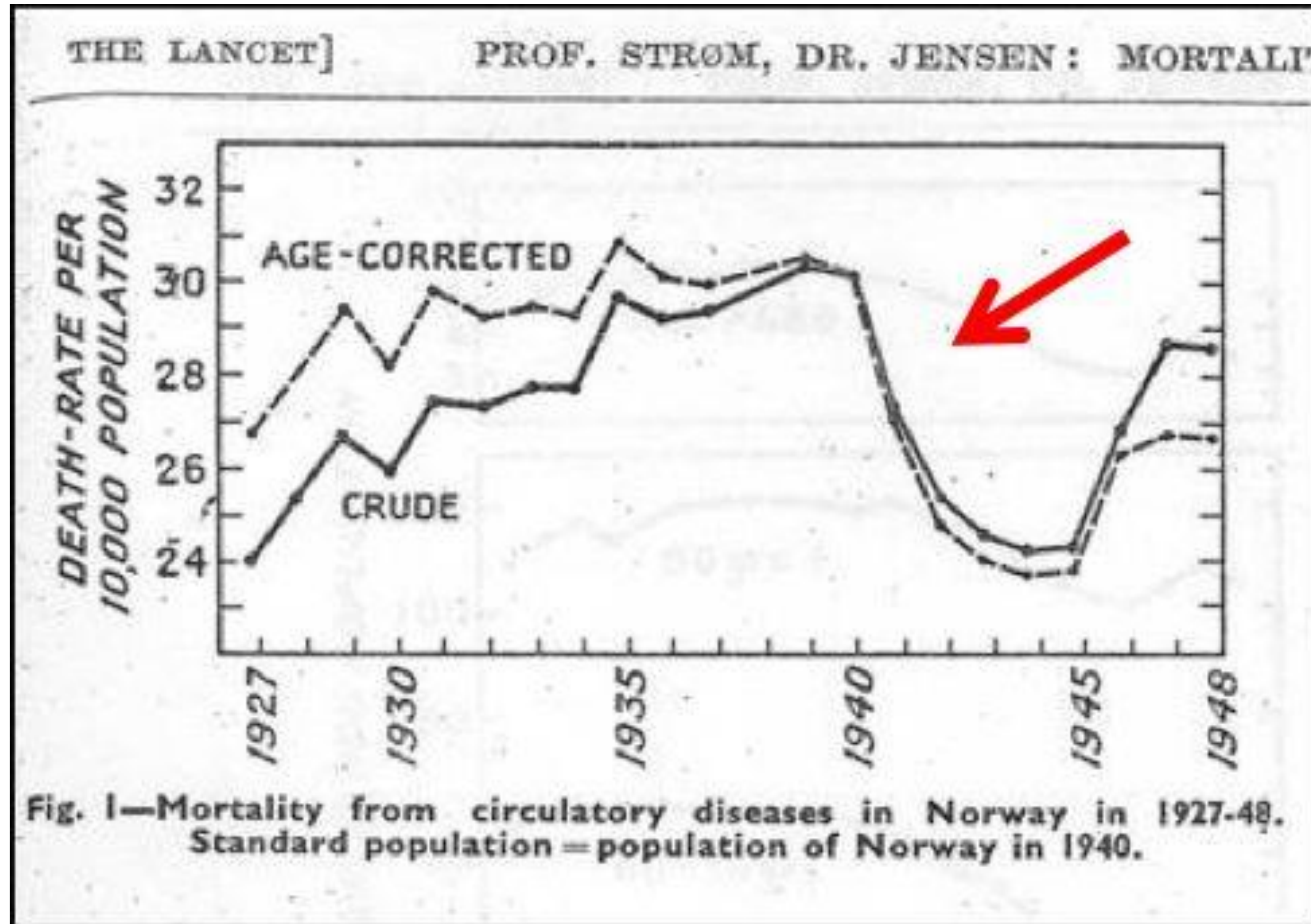
Plus de stress durant confinement ?

Tableau 1.a. Prévalences et évolutions des indicateurs de santé mentale face à l'épidémie de COVID-19
(% ; données pondérées). Sources : *Baromètre de Santé publique France (BSpF)* , France métropolitaine, 2017 // *Enquête Santé publique France COVID-19 Access Panel BVA* , France métropolitaine, 2020



Période de recueil des données	janv.-juil. 2017	23-25 mars	30 mars-1er avril	14-16 avril	20-22 avril	28-30 avril	4-6 mai	Evolutions V1 vs. dernier point
Numéro de vague d'enquête	BSpF 2017	V1	V2	V3	V4	V5	V6	
Nombre de personnes interrogées	25319	2000	2003	2010				
Satisfaction vie actuelle (score > 5 ; échelle 0 à 10)	84,5	66,3	74,2	75,8				↗
Projection positive dans le future (score > 5 ; échelle 0 à 10)	86,5	80,3	79,8	80,4				→
Anxiété (HAD*)	13,5	26,7	21,5	18,1				↘
Dépression (HAD*)	--	--	19,9	17,6				→
Consommation de médicaments psychotropes	--	--	10,4	12,2				→
Problèmes de sommeil (8 derniers jours)	49,4	--	61,3	63,7				→
Climat de violence ou graves disputes (15 derniers jours)	--	--	10,5	10,8				→

Sidération des maladies CV ?



Baisse apparente
des SCA pendant confinement ?
Causes possibles ?

ACR IDF

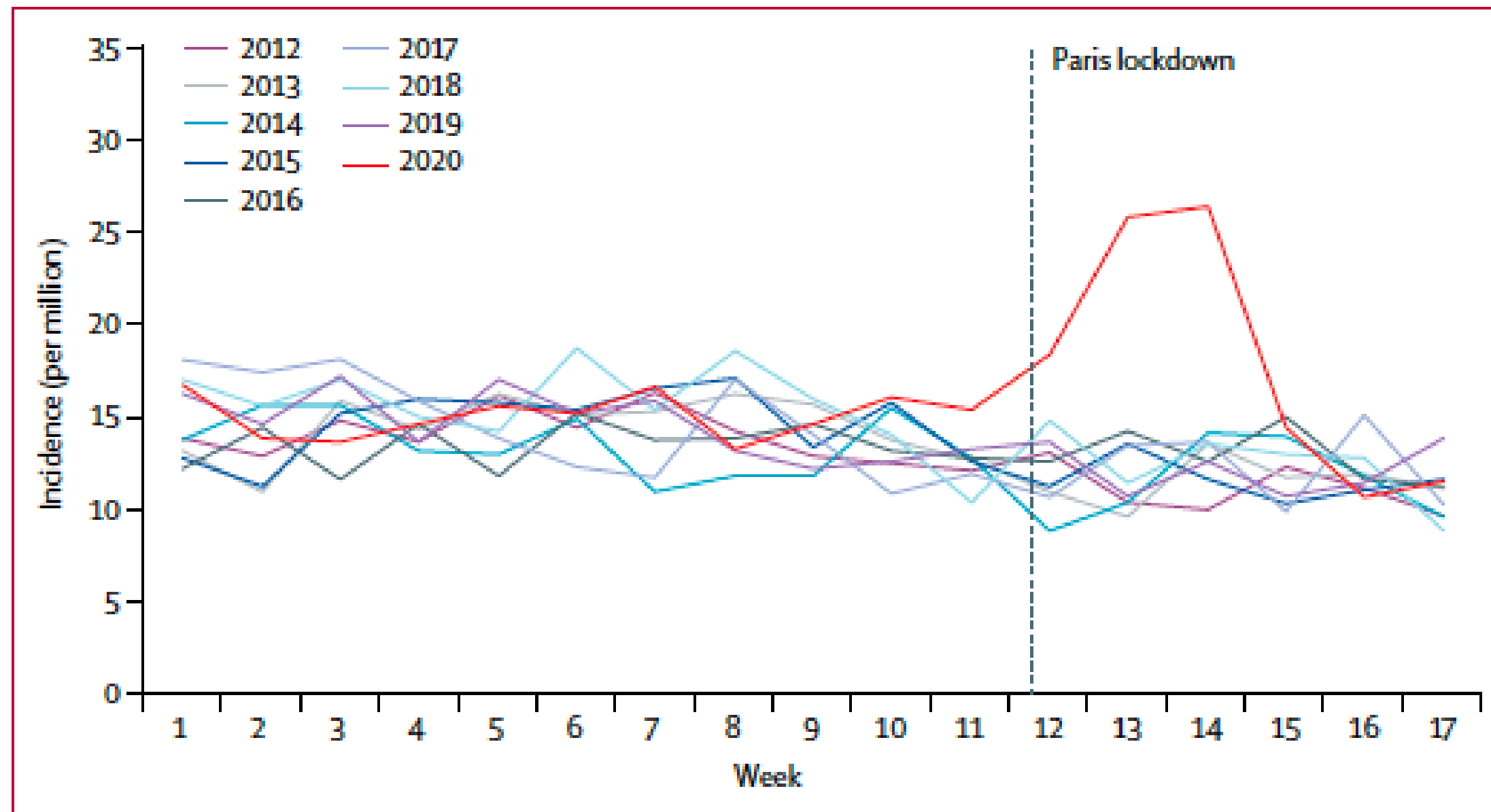


Figure 1: Weekly incidences of OHCA during the first 17 weeks of years 2012 to 2020
Compared with previous years and with the beginning of 2020, there was a surge in OHCA incidence starting week 12 of 2020, with a rapid return to normal by week 15. OHCA=out-of-hospital cardiac arrest.

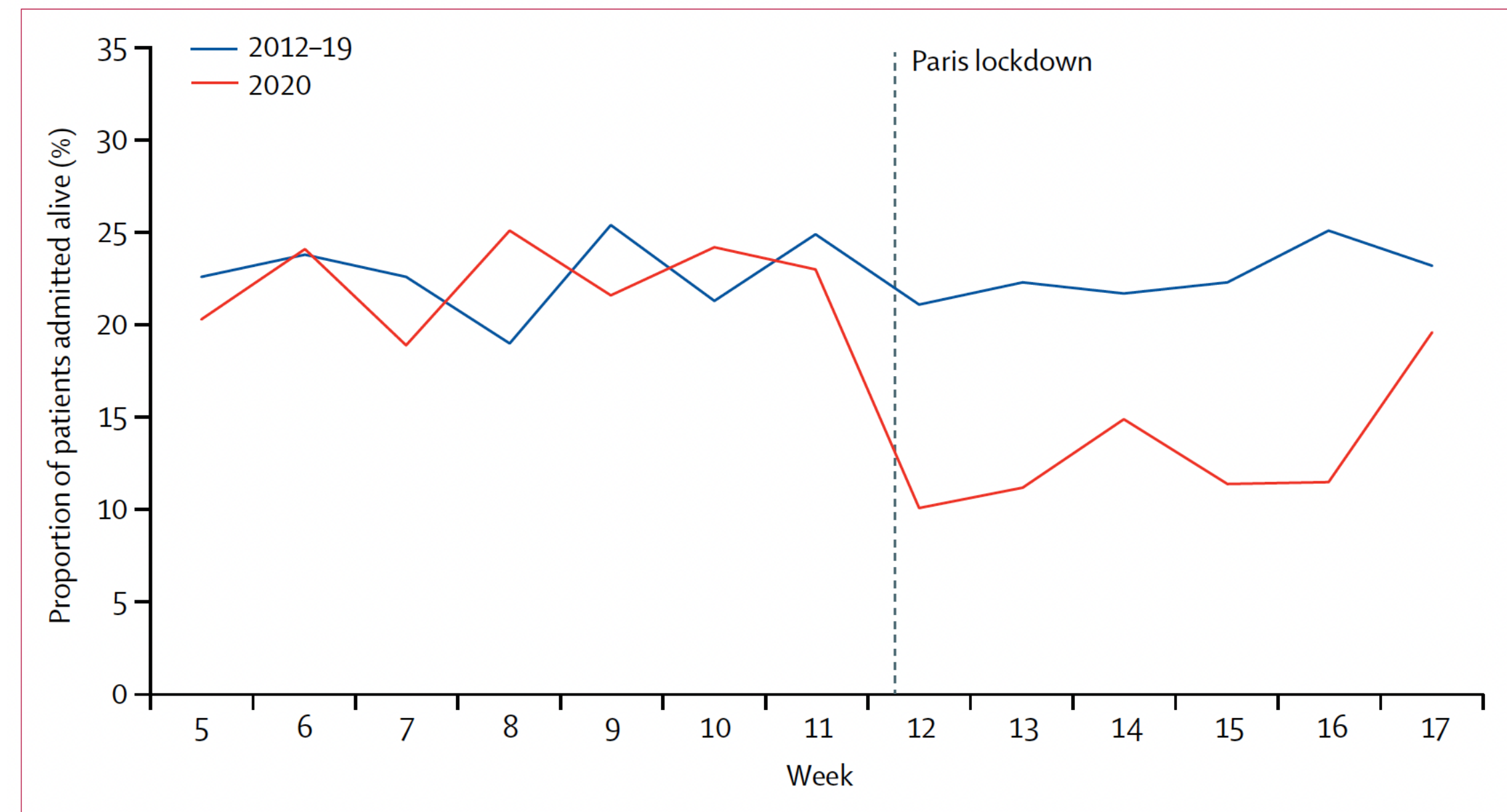
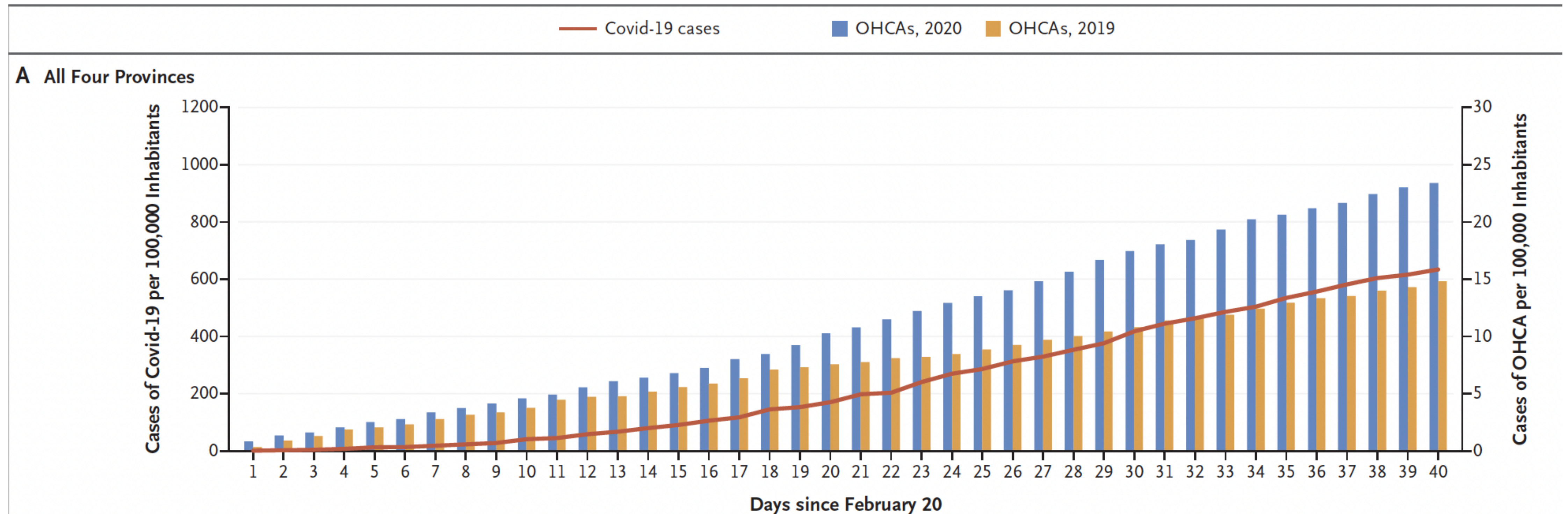


Figure 3: Proportion of patients admitted alive at hospital during weeks 5-17 of 2020 compared with the same period in previous years
Compared with similar periods in the previous years, there was a decrease in OHCA survival at hospital admission during the pandemic period of 2020. OHCA=out-of-hospital cardiac arrest.

Les SCA meurt il plus à domicile ?

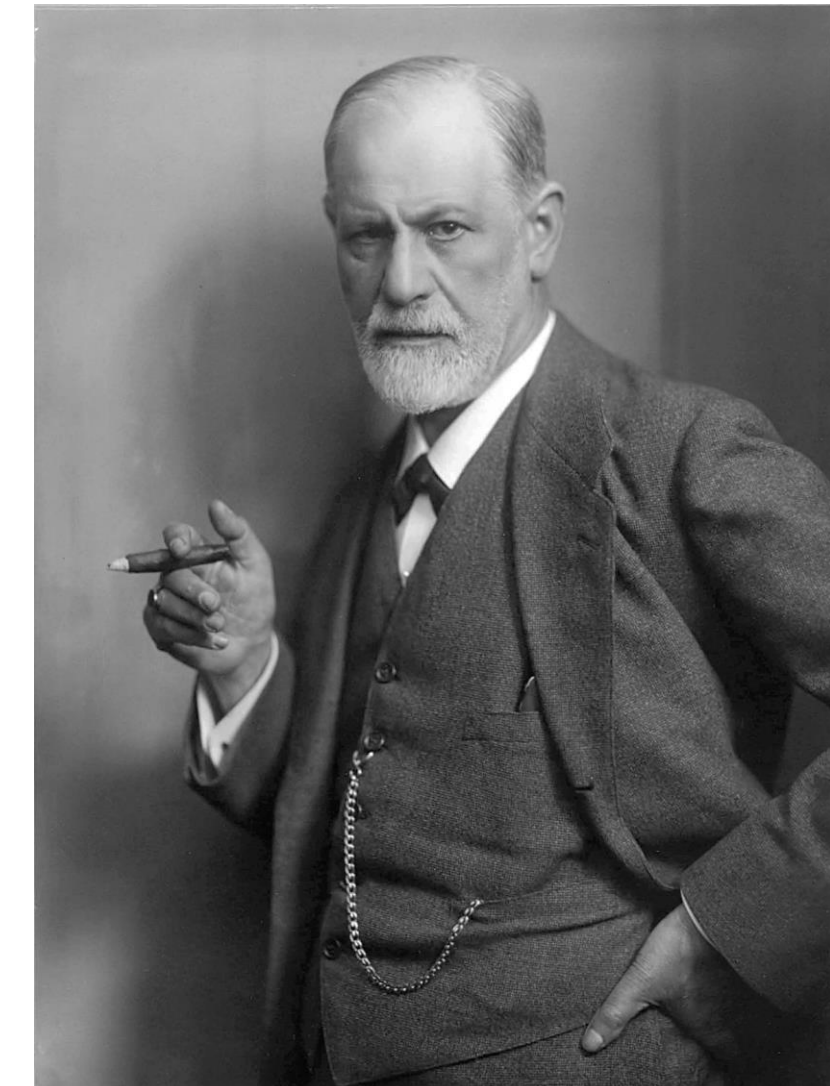


Lombardia cardiac arrest registry / NEJM May 2020

Pas d'augmentation nette d'ACR
adressé en coro
dans France PCI
3% (preCovid) vs 4,1% (Covid)

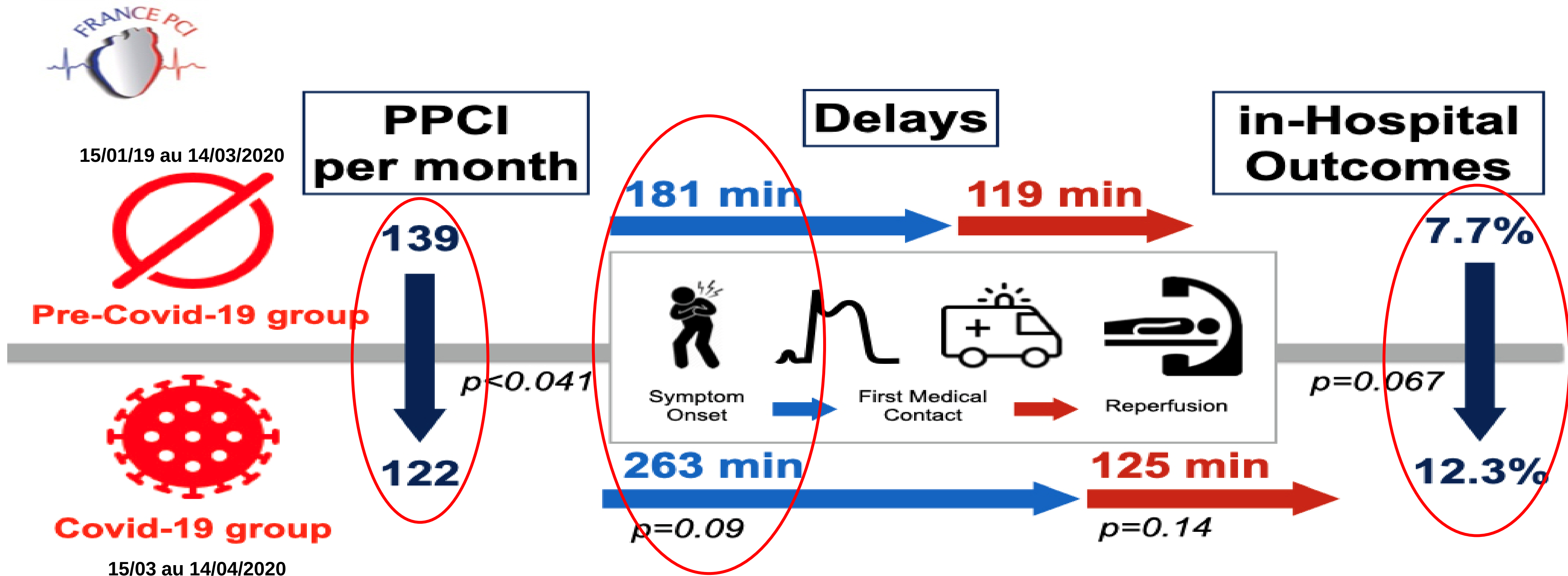
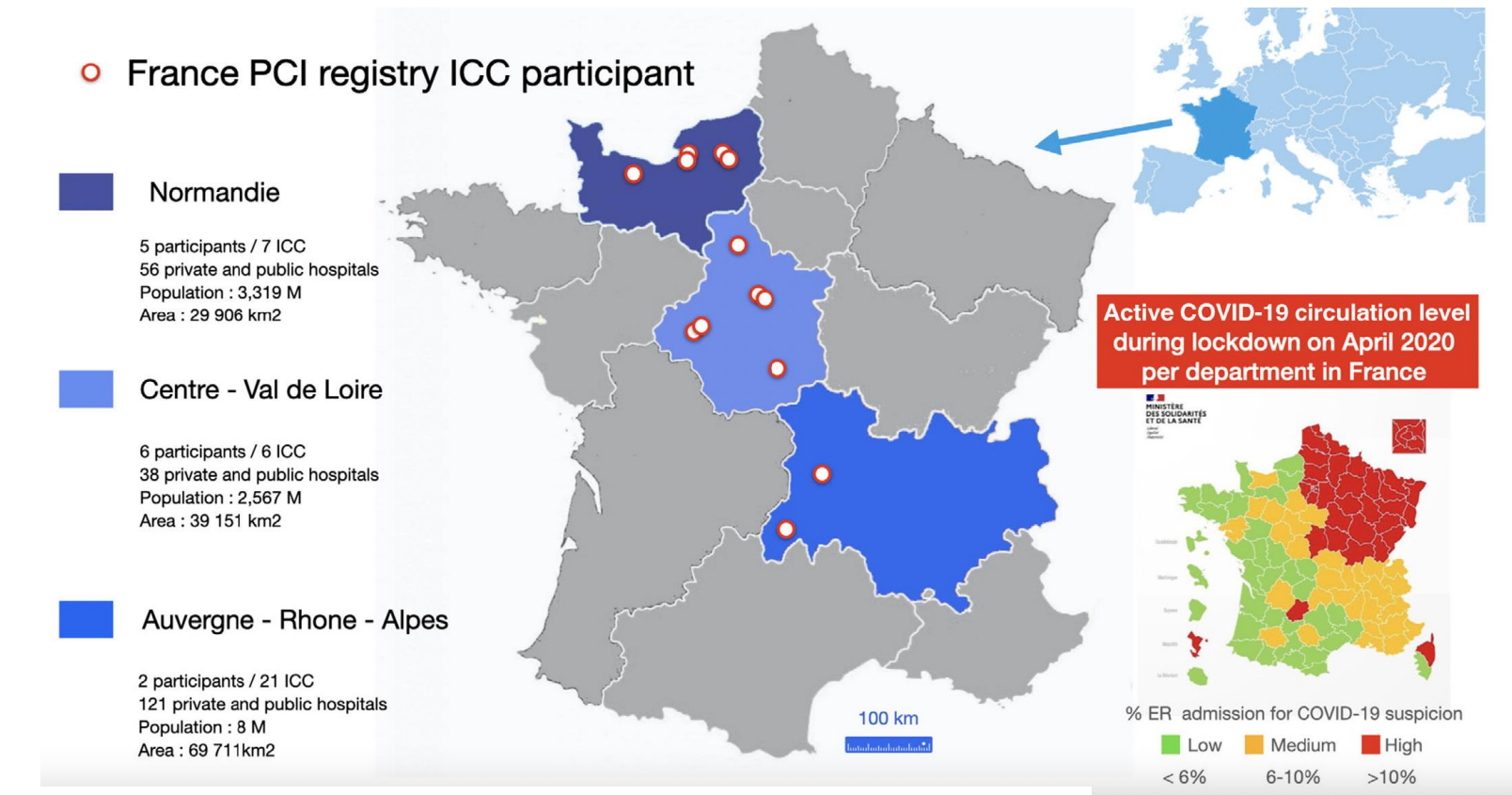


Patients consultant moins
en cas de D tho ?



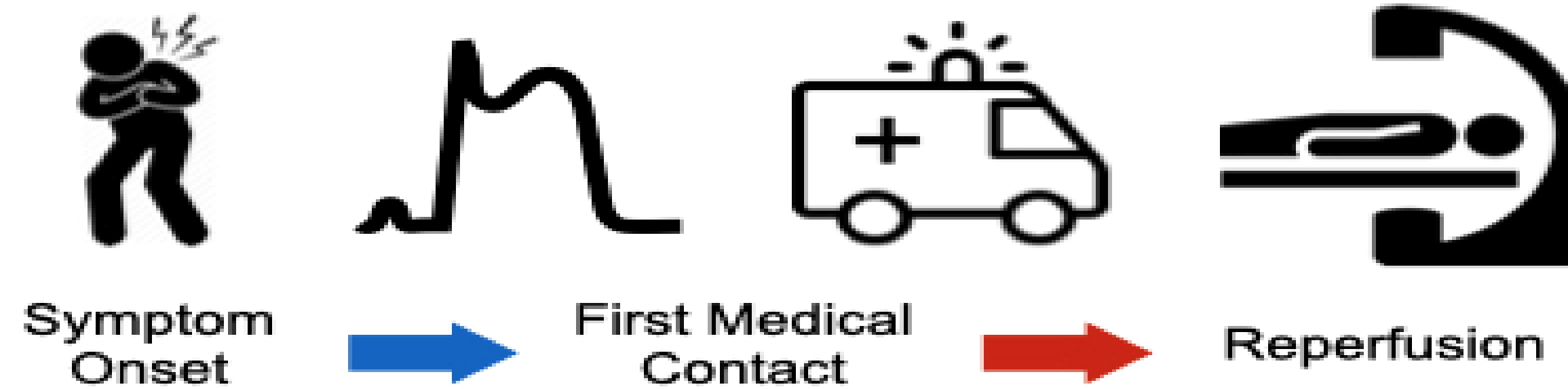
Etude STEMI COVID

11 centres France PCI



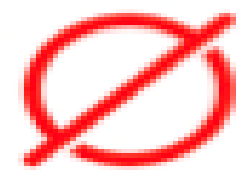
Si FMC = ER

if FMC = ER



238 min

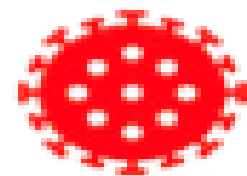
Pre-Covid-19 group



Symptom onset-FMC

450 min

Covid-19 group



Symptom onset-FMC

p=0.045

Profil des STEMI plus graves pendant confinement ?

TABLE 1 Characteristics of STEMI patients undergoing PPCI according to lockdown period January 15, 2019 to April 14, 2020

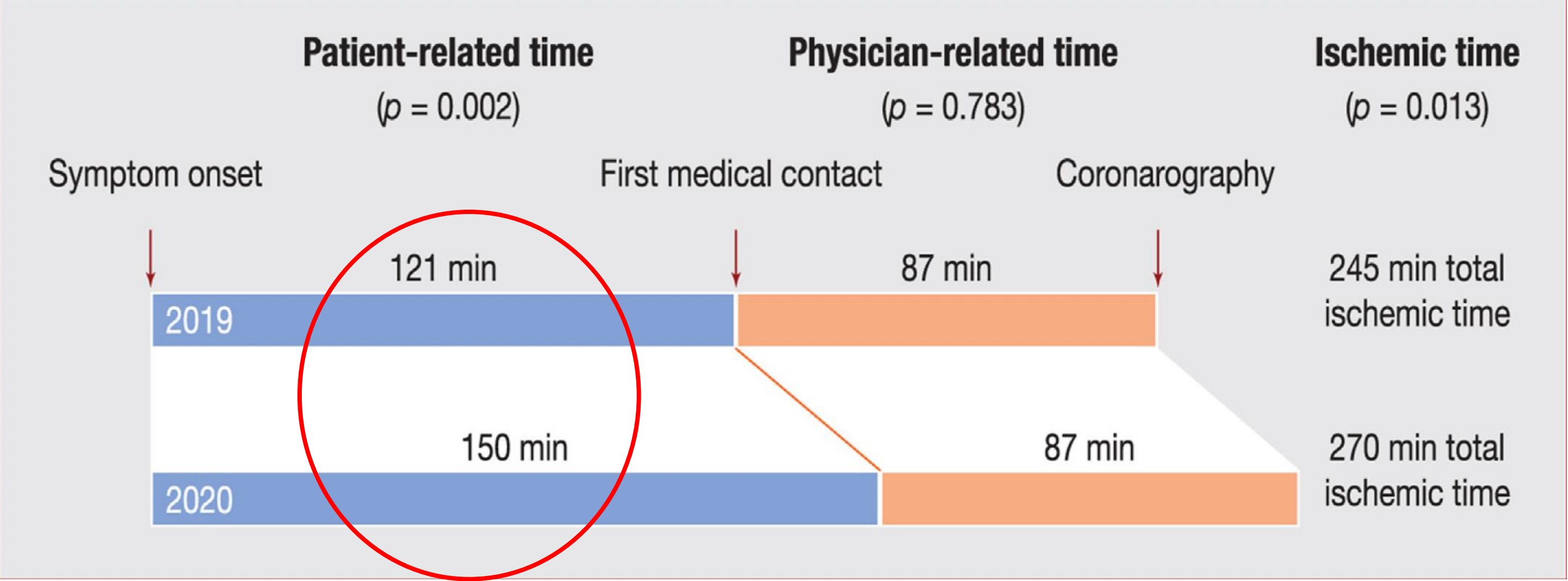
	Overall population (N = 2064)		Pre-lockdown group (N = 1942)		Lockdown group (N = 122)		P value
	N	%	N	%	N	%	
Clinical presentation							
COVID-19 status	2	0.1	0	0	2	1.6	/
Ischemia localization							
Anterior	859	42.5	802	42.3	57	46.7	0.33
Inferior or lateral	1161	57.5	1096	57.7	65	53.3	0.33
LVEF < 40%	220	22	204	21.9	16	23.9	0.70
Cardiogenic shock	63	3	56	2.9	7	5.7	0.07
Cardiac arrest	65	3.1	60	3.08	5	4.1	/

**ST-segment elevation myocardial infarction:
Management and association with prognosis
during the COVID-19 pandemic in France[☆]**

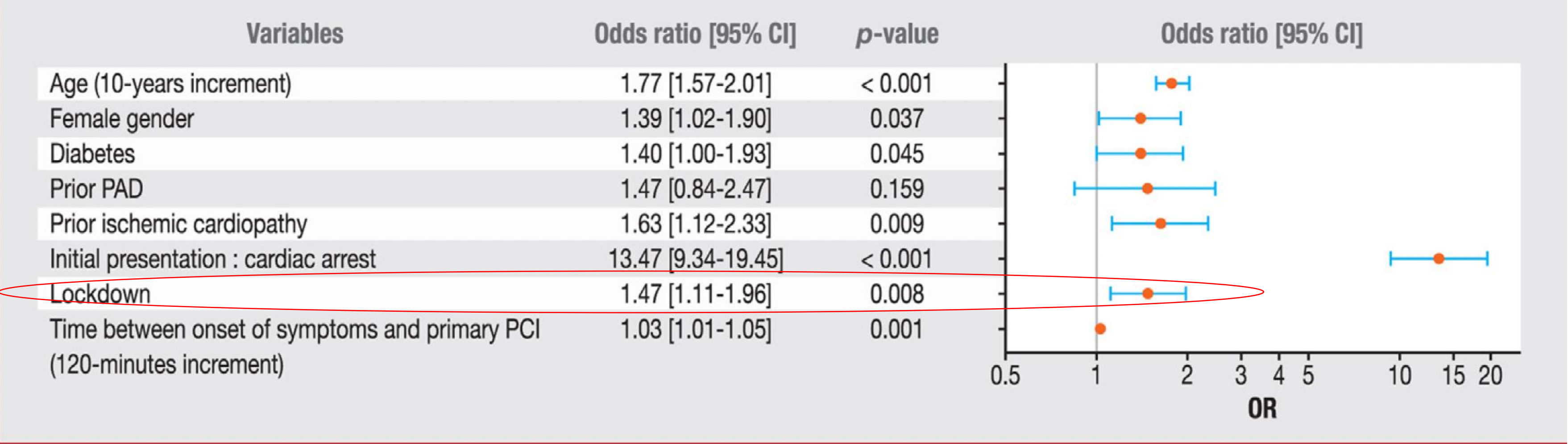
Infarctus du myocarde avec sus-décalage du segment ST : prise en charge et association au pronostic lors de la pandémie de COVID-19 en France



Enquête rétrospective 65 centres
01/03/20 au 30/05/20



In-H death or mechanical complication



Italie

Enquête / 54 centres / 1 semaine

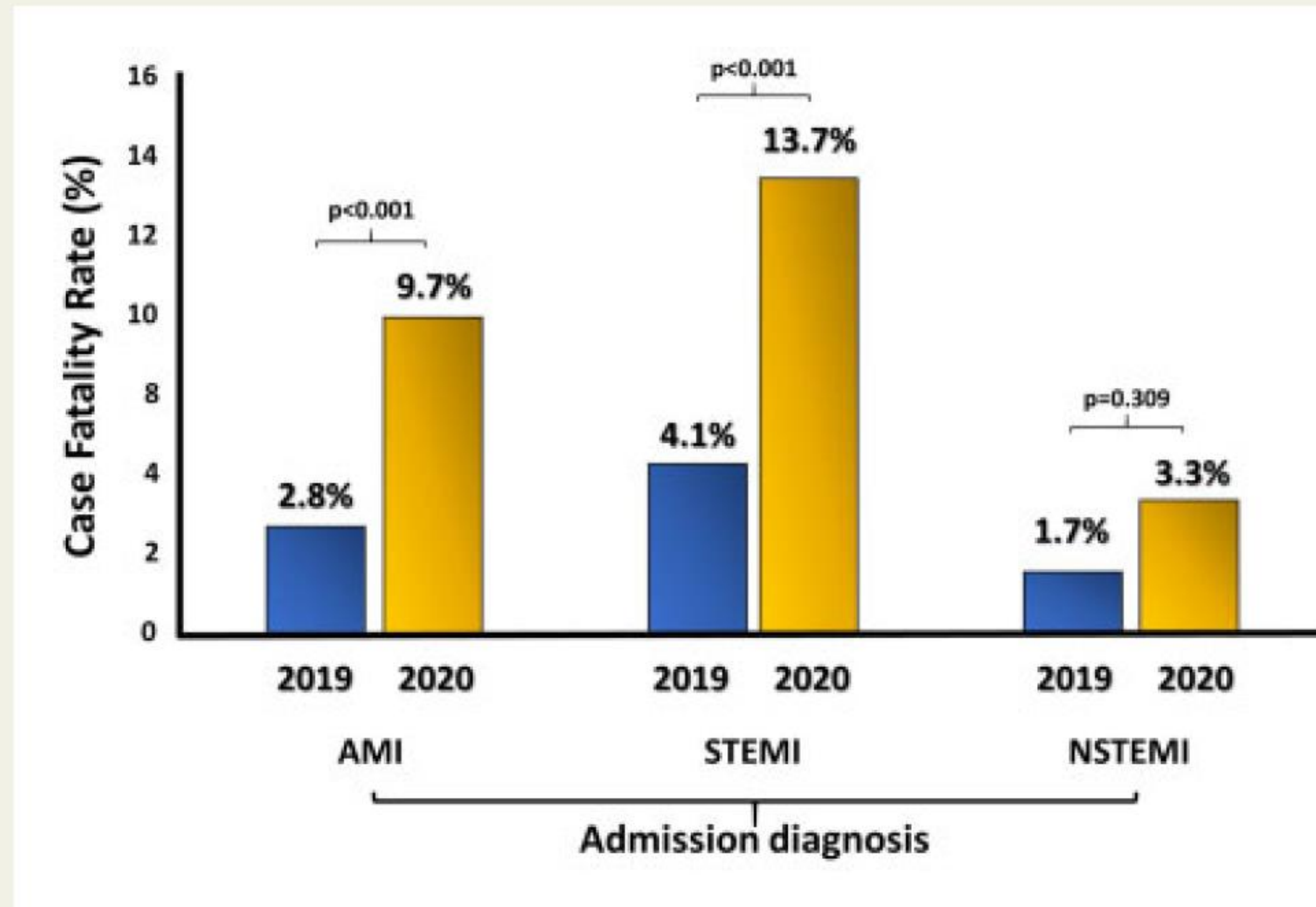
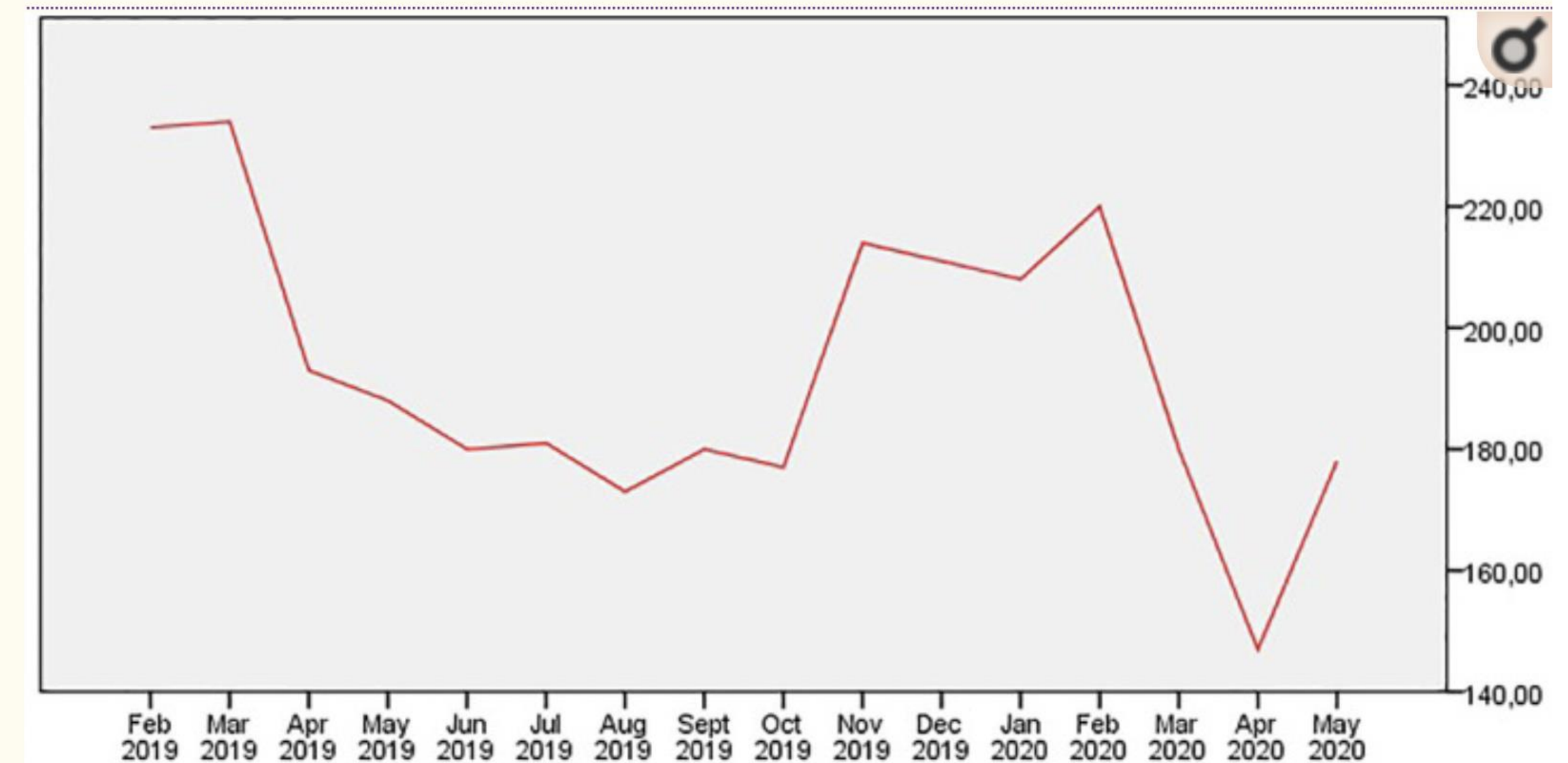
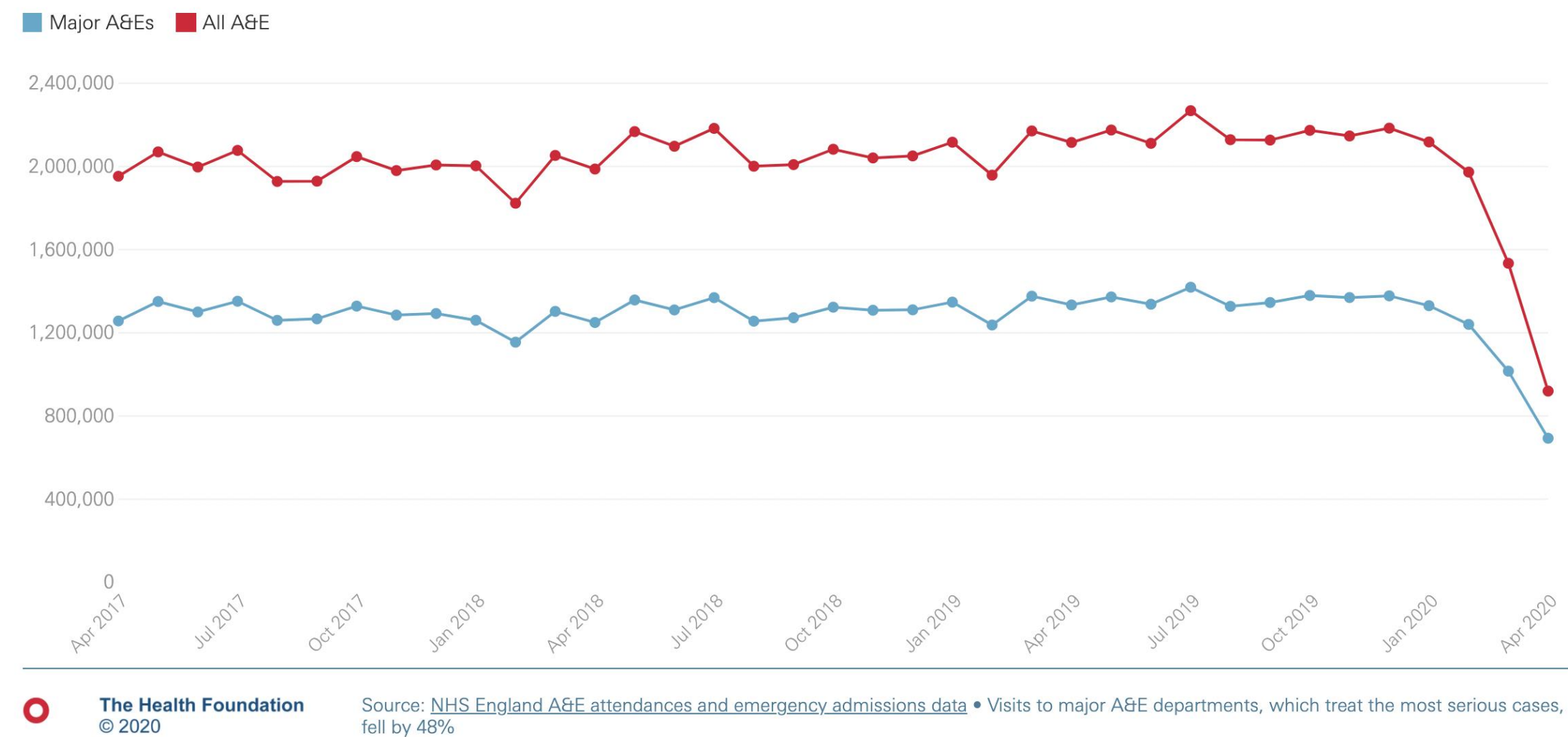


Figure 2 Case fatality rates for acute myocardial infarction. The figure reports case fatality rates among patients admitted for AMI during the week 12–19 March 2020, in the midst of the COVID-19 emergency (yellow bars) and during the same week of the previous year (blue bars).

Chute de toutes les urgences pendant confinement (dont AVC)

Patients with acute ischemic stroke admitted to the five Campania hub, since February 2019.

Total number of A&E attendances in England, April 2017 - April 2020



Prehospital delay 180 mn vs 275 mn P 0.019

J Stroke Cerebrovasc Dis. 2021 Jan; 30(1): 105448

Pourquoi les patients ont moins
consultés
ou plus tardivement ?

Peur d'être contaminés à
l'hôpital



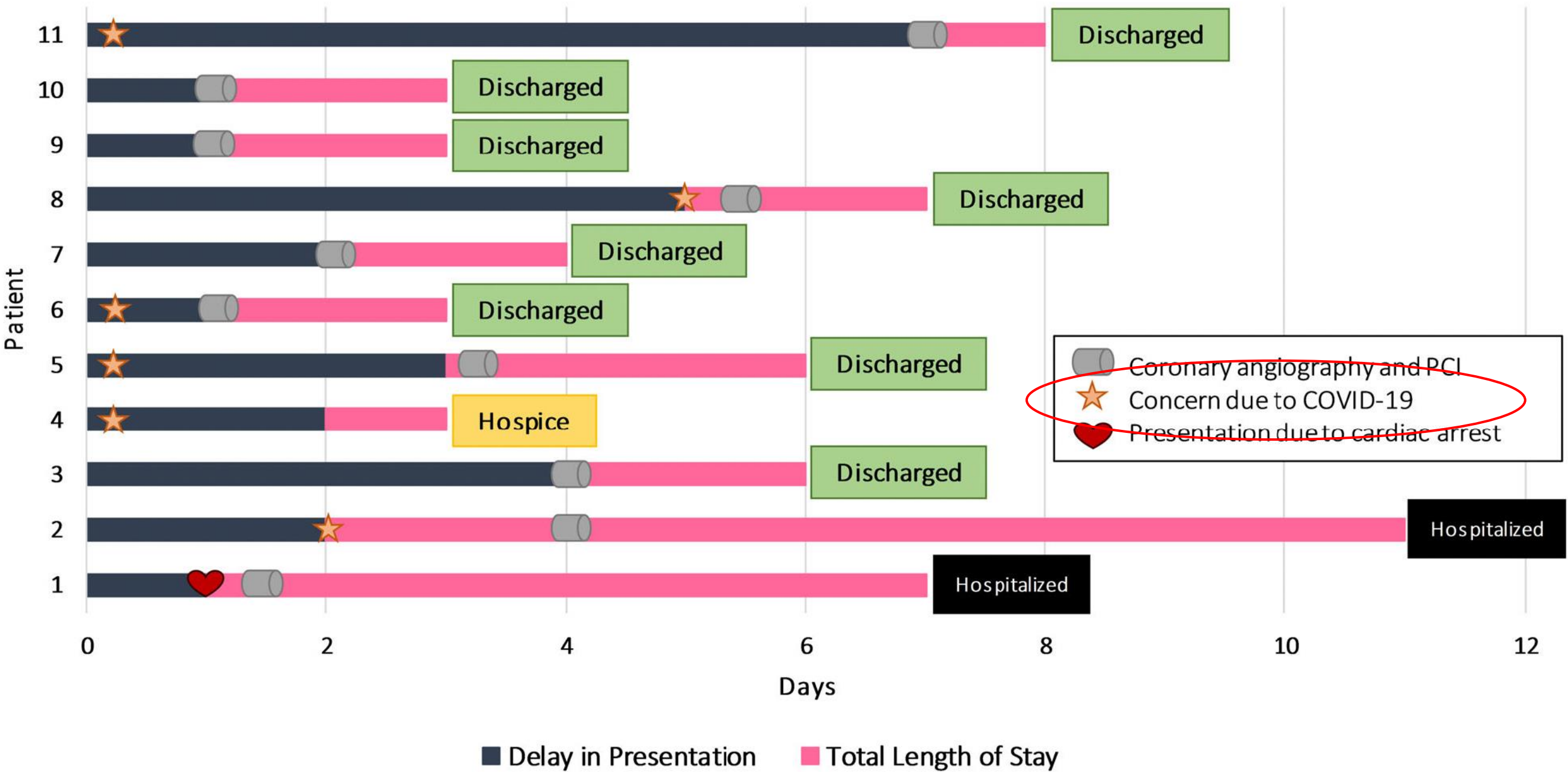
Peur de surcharger les
urgences



Causes de retard

Impact of COVID-19 pandemic on ST-elevation myocardial infarction in a non-COVID-19 epicenter

Tarek A. Hammad MD | Melanie Parikh MD | Nour Tashtish MD |
Cynthia M. Lowry RN, BSN, MBA | Diane Gorbey RN, CNS |
Farshad Forouzandeh MD, PhD | Steven J. Filby MD | William M. Wolf MD |
Marco A. Costa MD, PhD, MBA | Daniel I. Simon MD |
Mehdi H. Shishehbor DO, MPH, PhD 

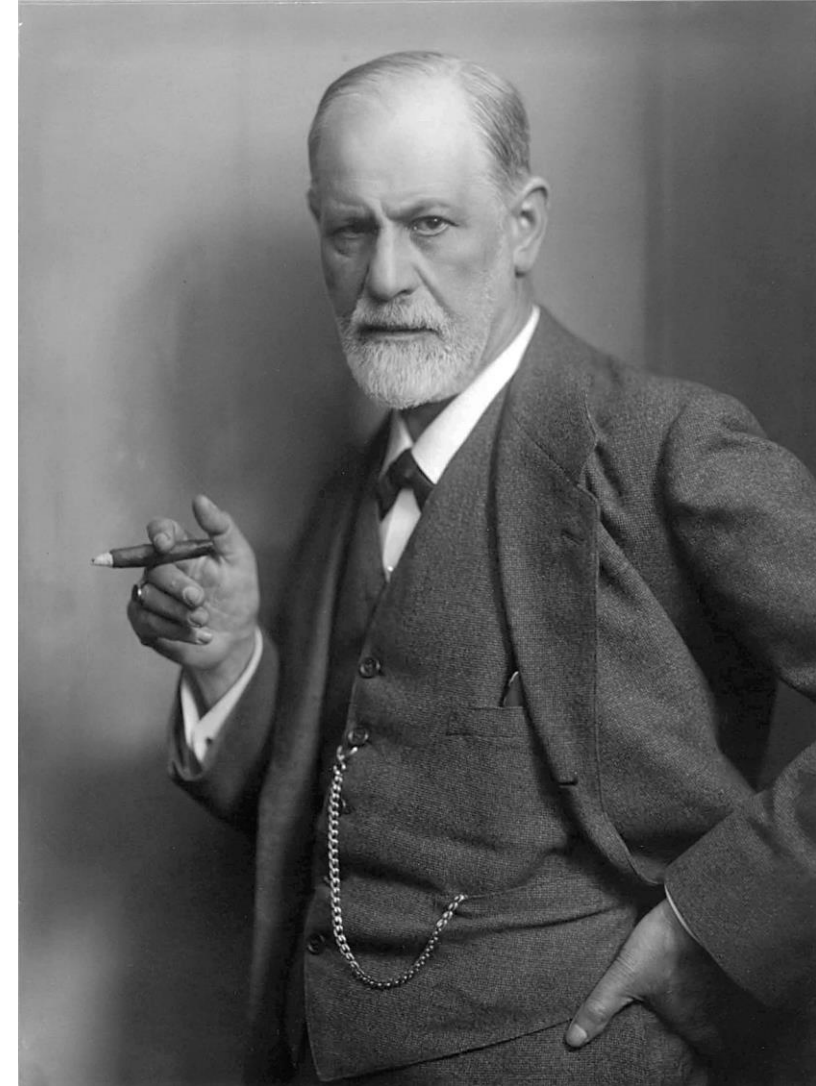


IDM moins douloureux pendant Covid ?

Explications neuro-hormonales



Explication psychanalytique



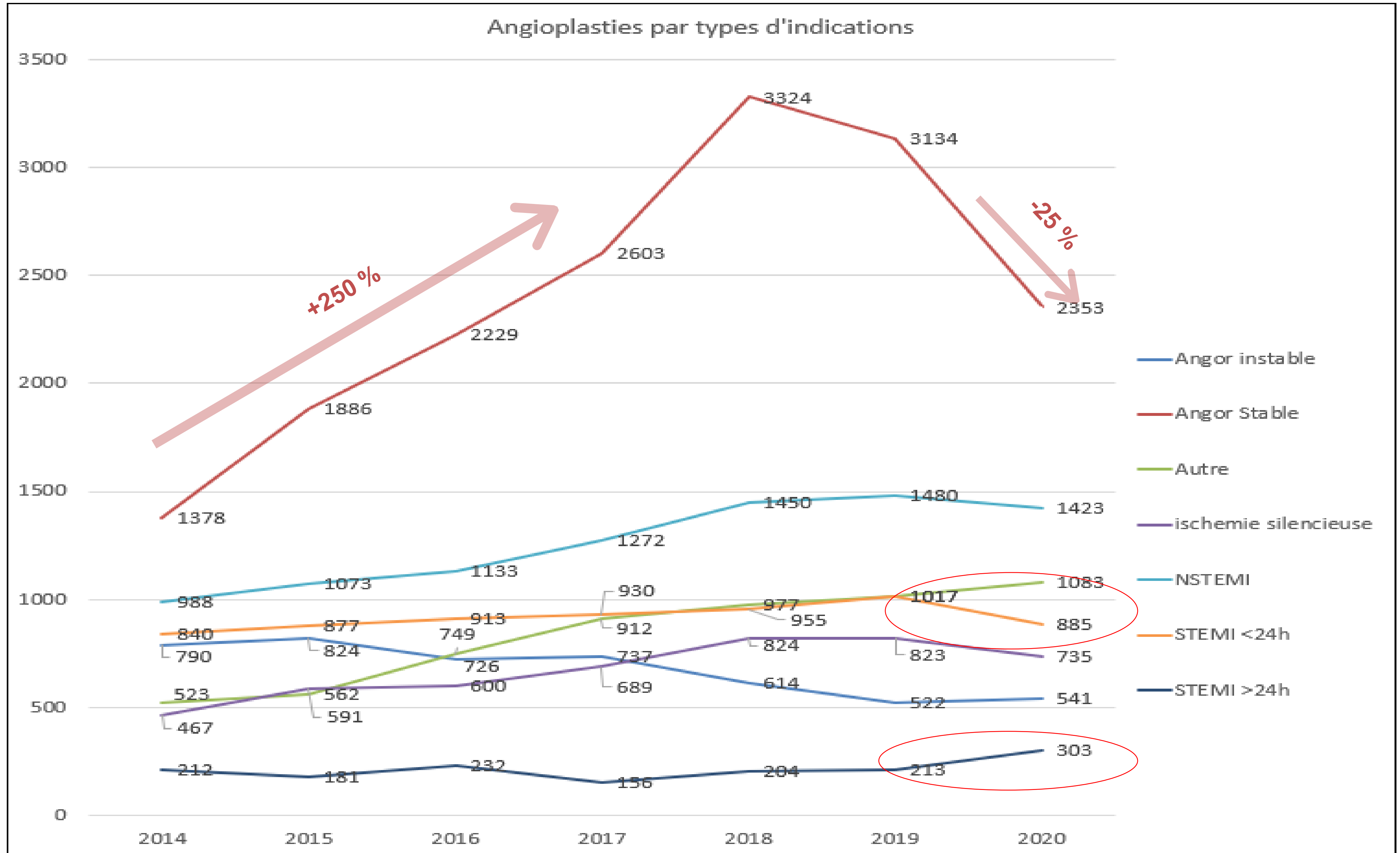
une situation « remarquable » où les douleurs les plus intenses ne se produisent pas quand un intérêt d'une autre espèce mobilise l'attention du sujet.

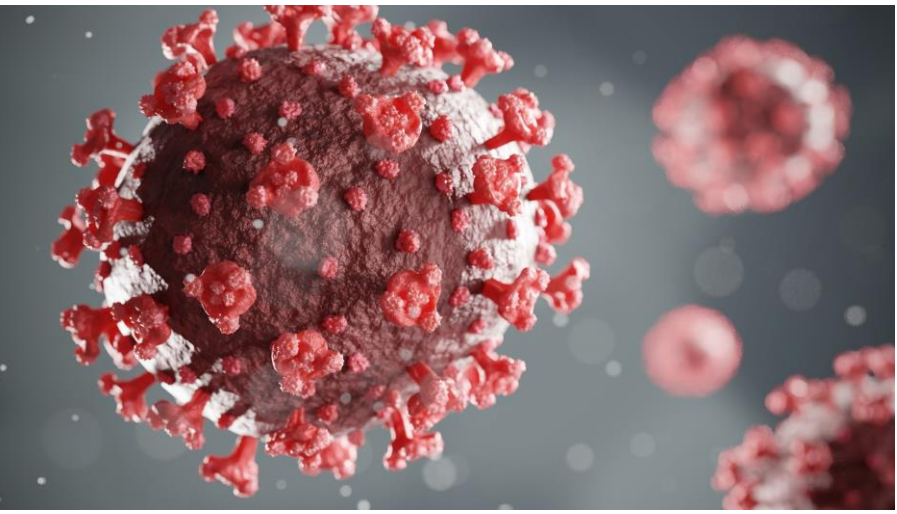
Freud (1926) Inhibition symptôme et angoisse

Impact de la pandémie sur les SCA

Analyse 2020 / 2019 dans FPCI

INDICATIONS DES ANGIOPLASTIES

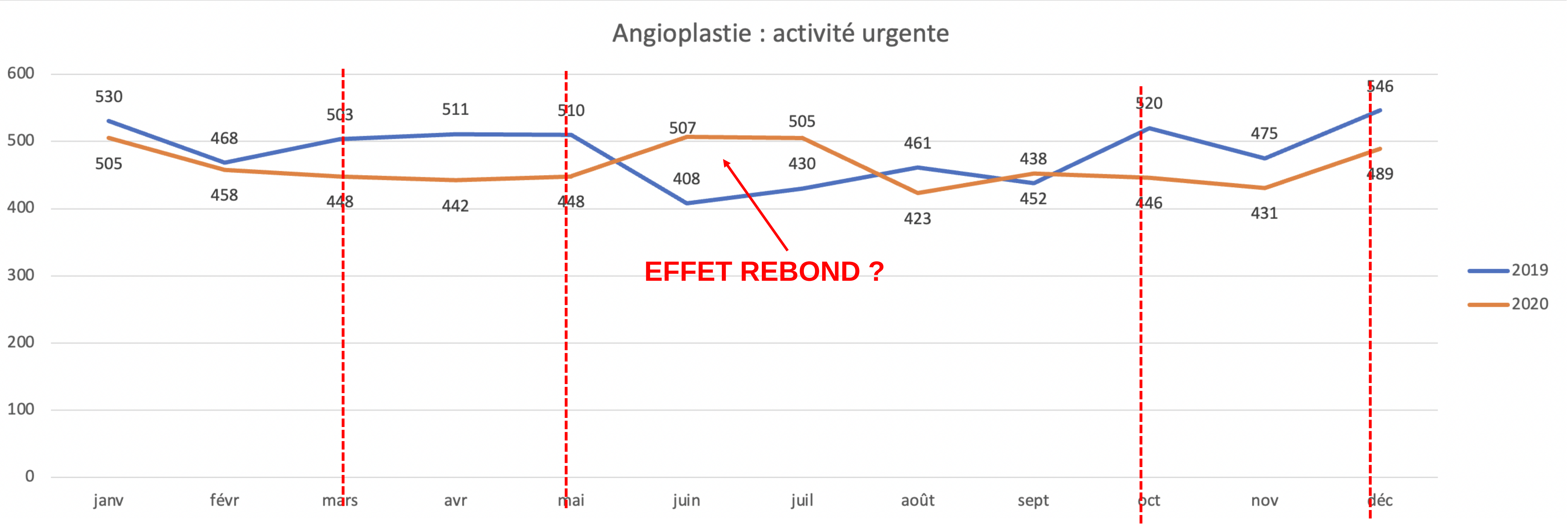




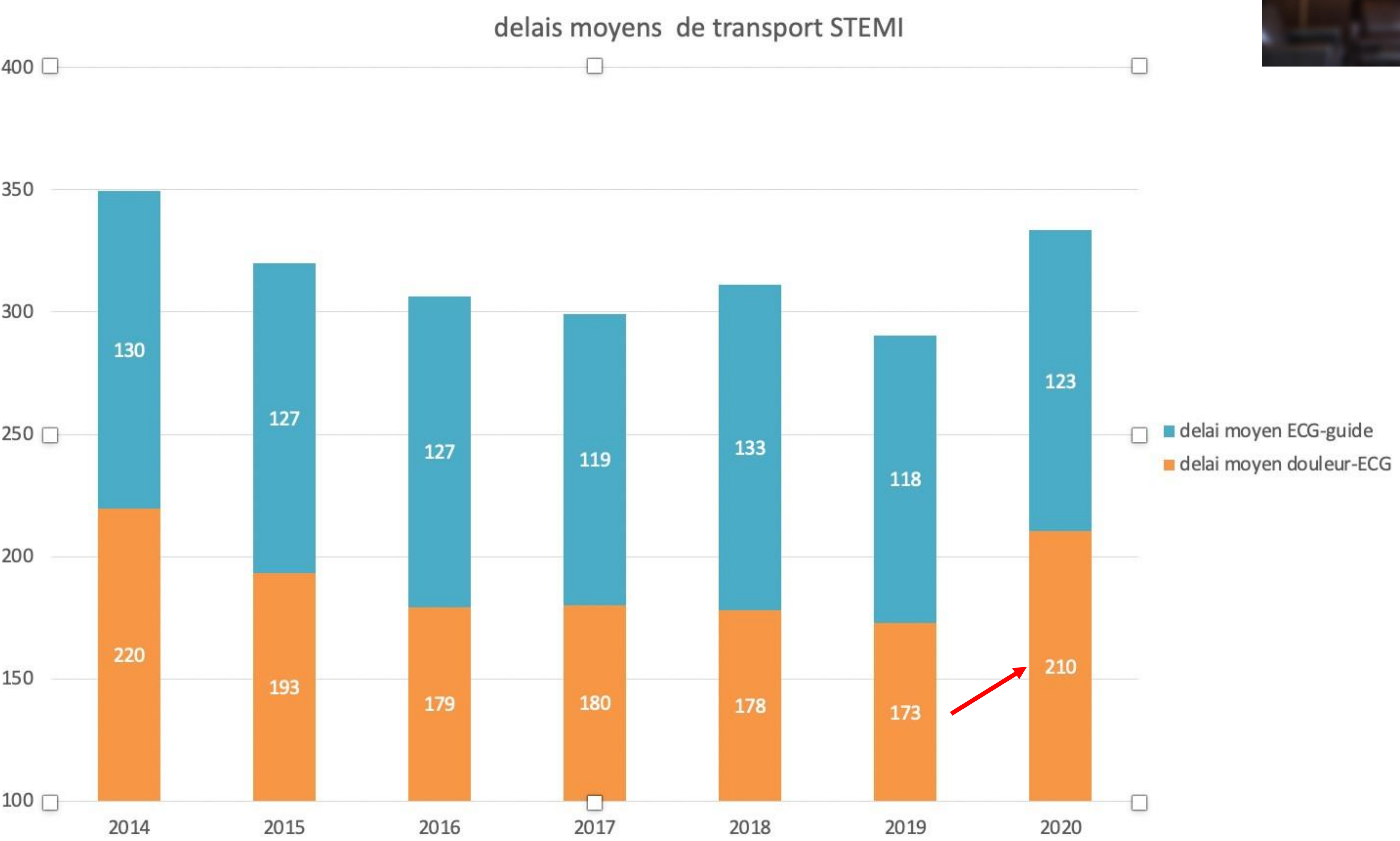
ACTIVITÉ MENSUELLE ATL URGENTE

COMPARAISON 2019-2020

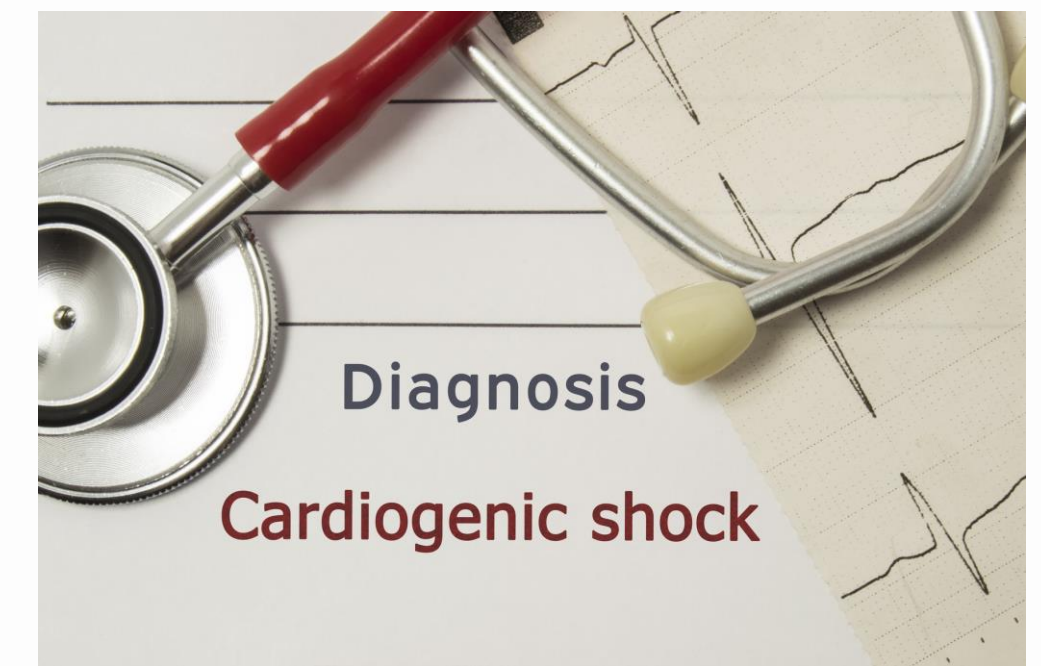
IMPACT DU CONFINEMENT



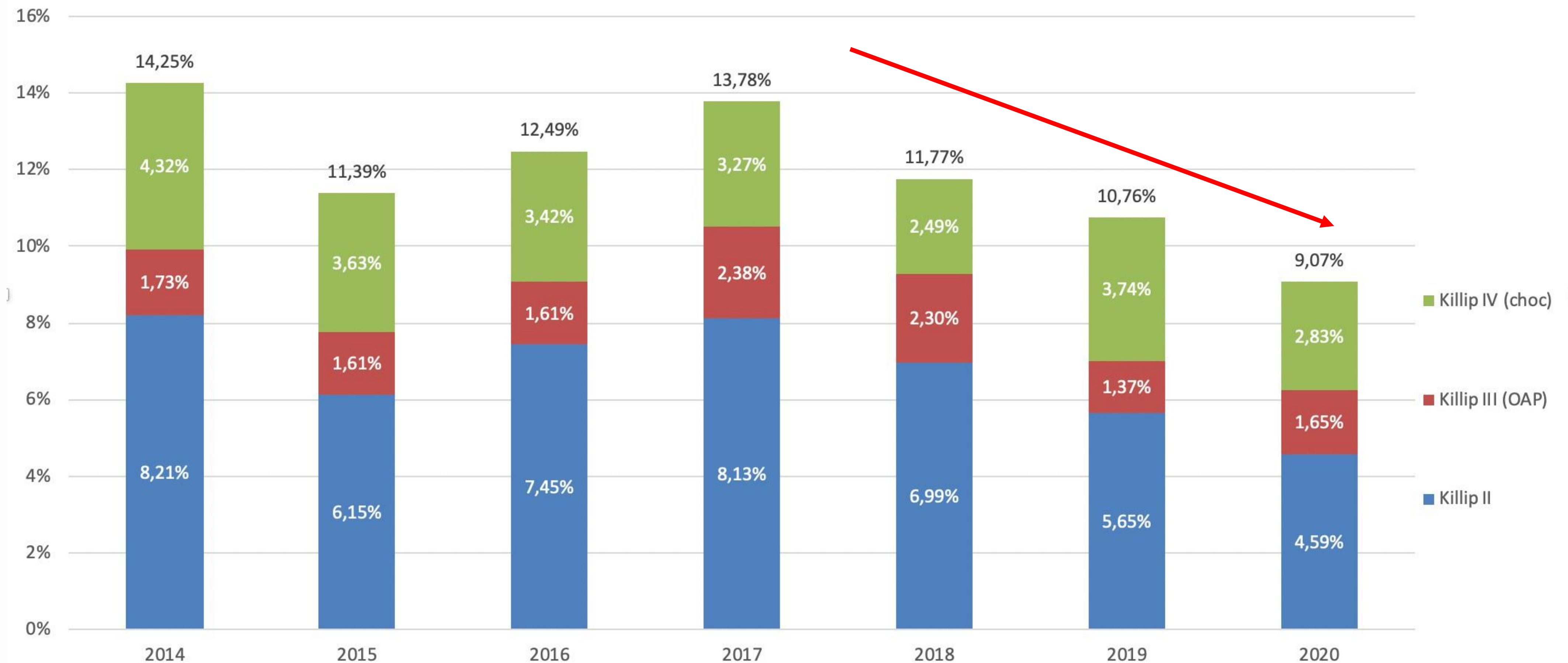
DELAIS PRE HOSPITALIERS / SCA ST+ < H24



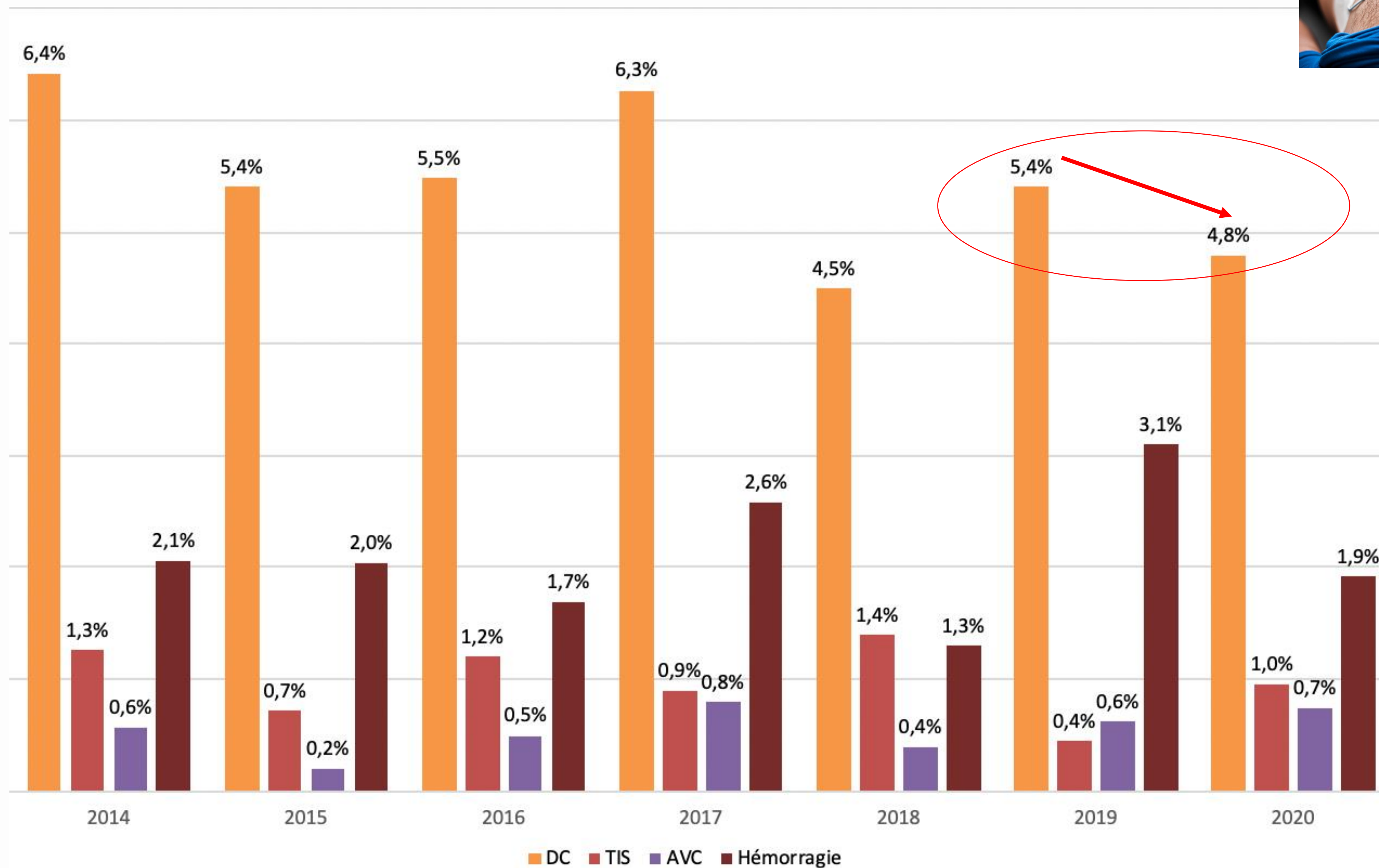
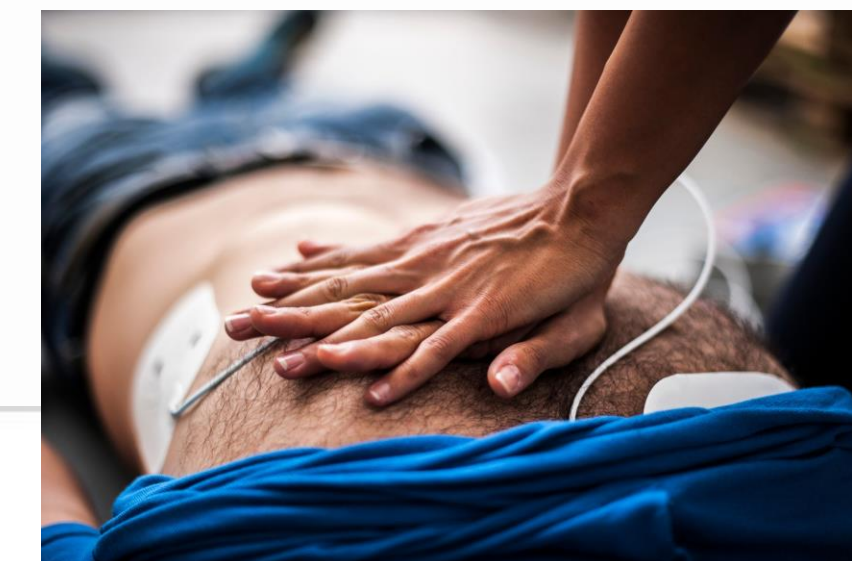
INSTABILITE HD / SCA ST+<H24



% et Répartition des KILLIP II / III / IV



ÉVÈNEMENTS HOSPITALIERS / STEMI < H24





Conclusions

- Chute brutale et générale de tout les SCA hospitalisés durant la période de confinement
- Plutôt liée à une crainte de consulter qu'à une réelle chute de l'incidence de IDM.
- Allongement de tout les délais pré-hospitaliers notamment les délais d'arrivée aux urgences et augmentation des IDM vus tardivement.
- Tendance à une augmentation des formes graves des STEMI avec des moins bons pronostics intra H pendant la période Covid-19 faisant suspecter que les formes les moins graves ou pauci-symptomatiques composent l'essentiel des infarctus manquants.
- Baisse limitée au période de confinement et non retrouvée sur l'ensemble de l'année 2020
- Effet rebond post confinement (effet post-sidération ?)
- Intérêt majeur des registres médicaux en ligne, comme France PCI, pour alerter, en cas de crise sanitaire imprévisible, le public, les professionnels et les autorités de santé d'un risque sanitaire en cours et permettre d'engager des actions correctives le plus rapidement possible