

JPCOVID

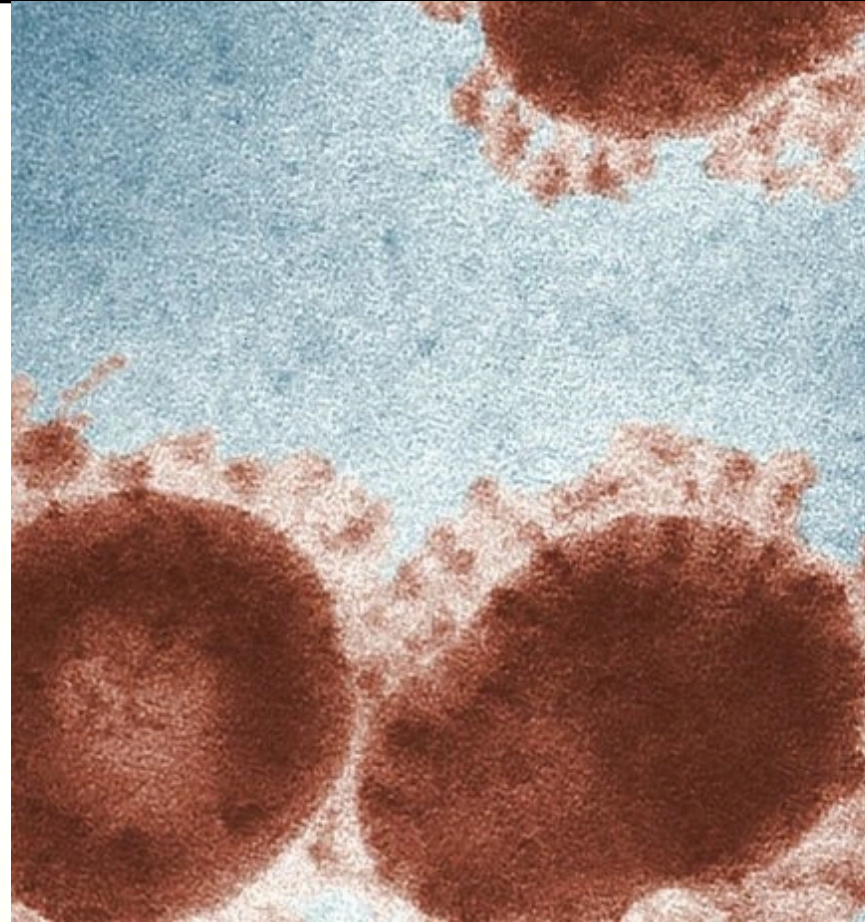
SMMAD

2 Mai 2020

COVID-19

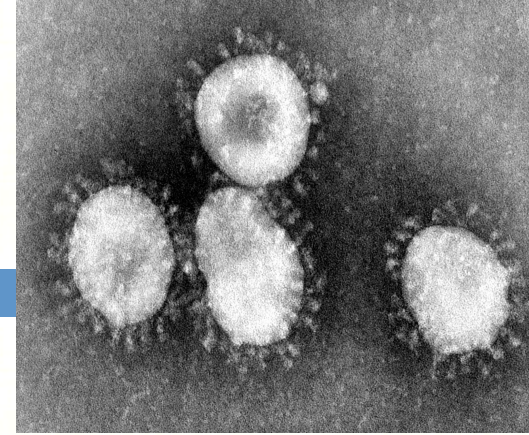
EPIDEMIOLOGIE ET VIROLOGIE

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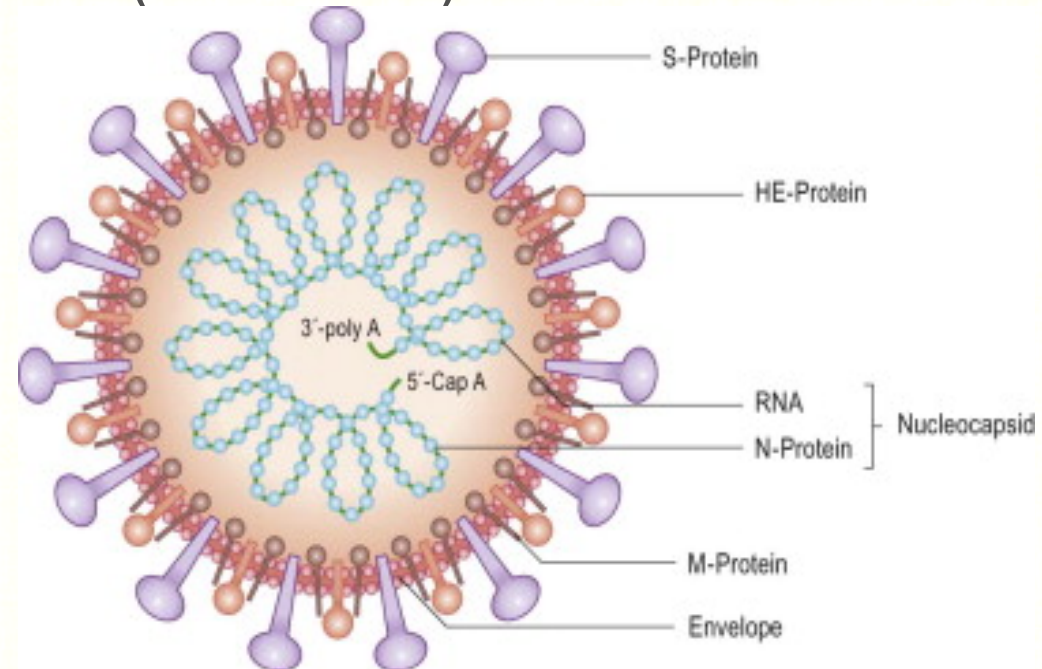


Les Coronavirus

2

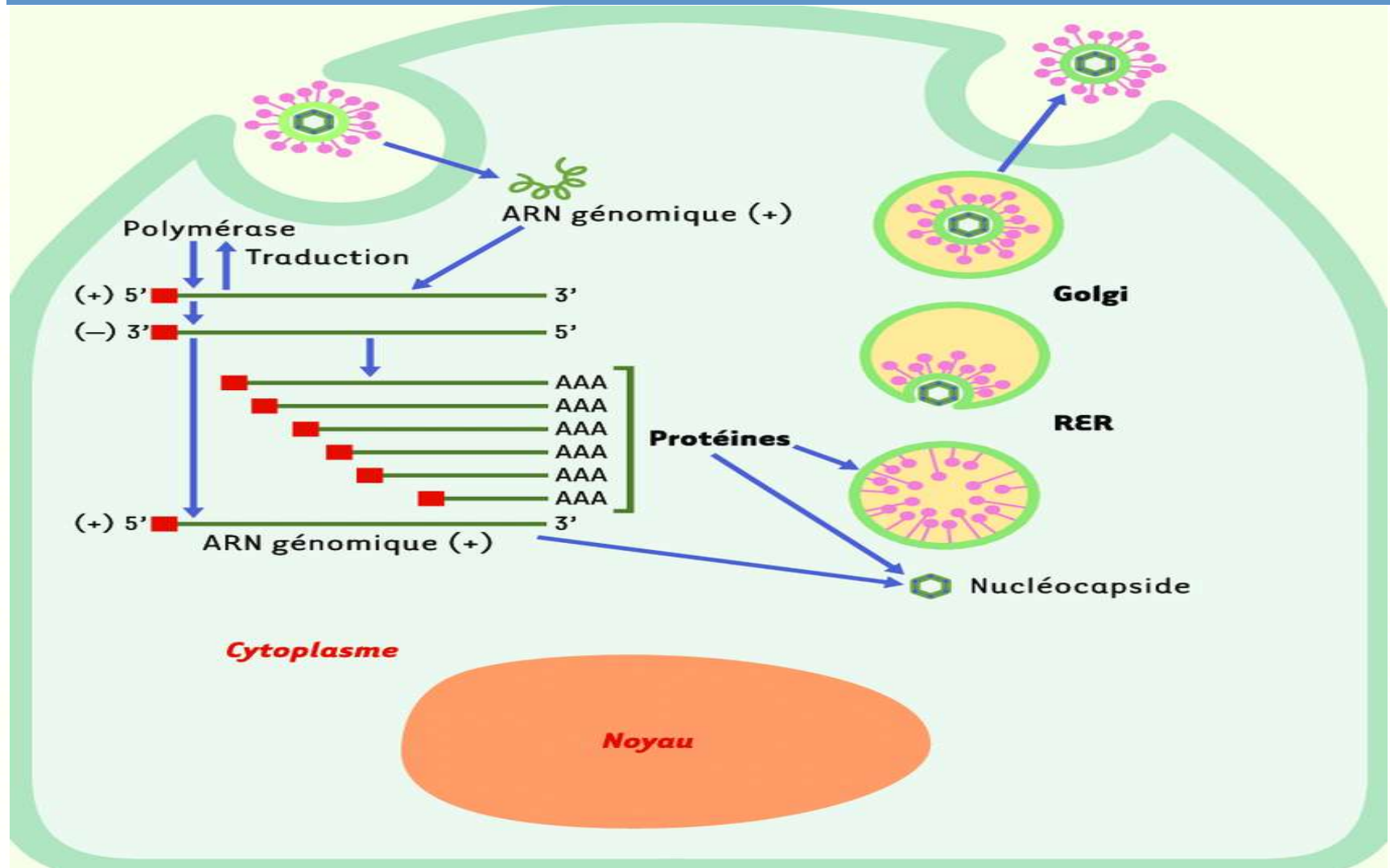


- Virus à ARN, un seul brin avec des spicules en couronne
- 80 × 160 nm de diamètre
- Avec des spicules en couronne (12–24 nm)
- Protéines majeurs :
 - S : spicule
 - E : enveloppe
 - M : membrane
 - N : nucléocapside



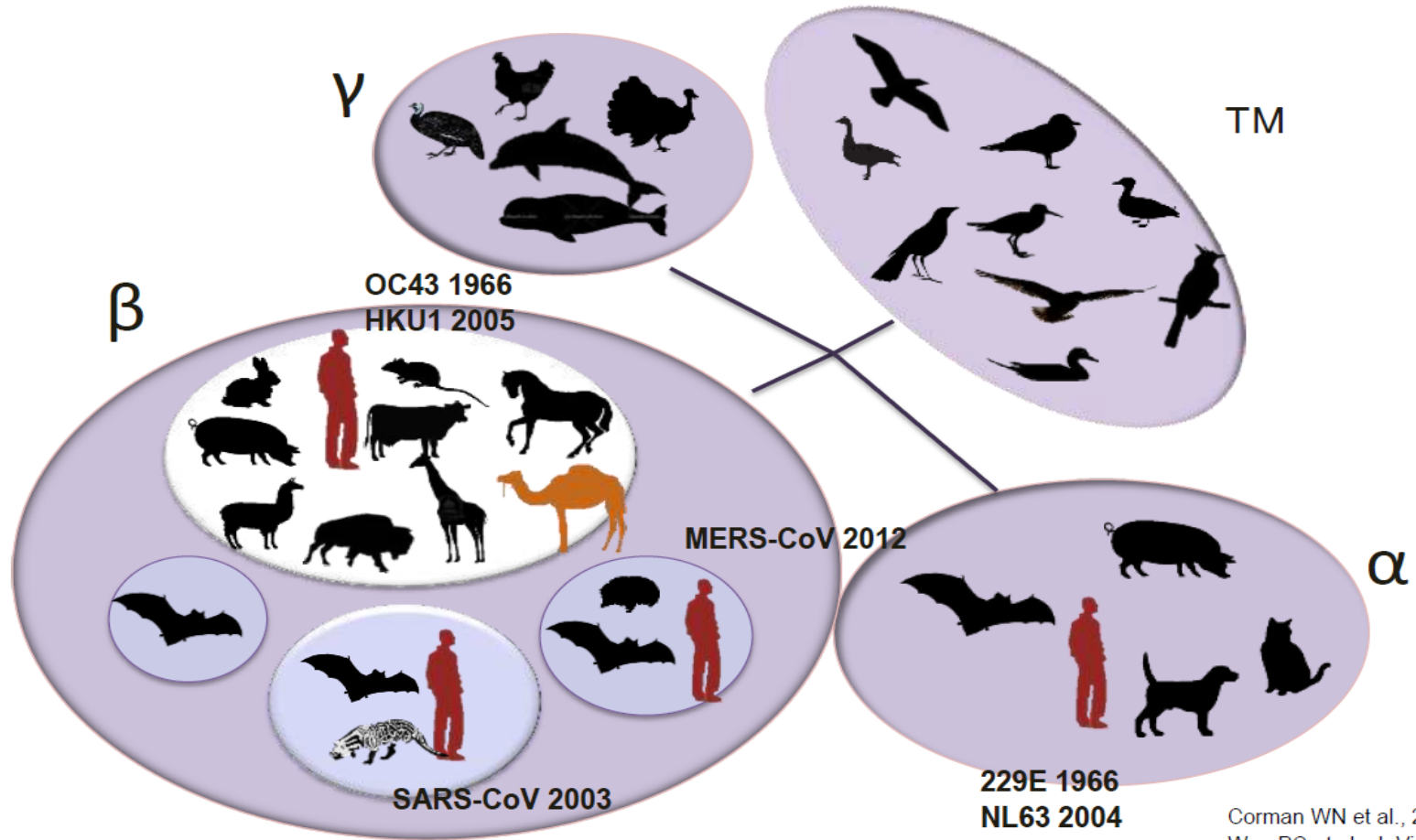
Multiplication virale

3



Très nombreux coronavirus dans le monde animal

4



Corman WN et al., 2014
Woo PC et al., J. Virol. 2014
Woo PC.. EID 2014

Infections à Coronavirus chez l'Homme

5

- Depuis 1966 :
HCoV-229E ; HCoV-OC43 sont communs dans le rhume
- 2004 – 2005 :
HCoV-NL63 ; HCoV-HKU1 (enfant : bronchiolite, pneumonie, croup)
- Infections respiratoires sévères :
 - SARS-CoV : Epidémie totalement terminée
 - MERS-CoV : Epidémie en cours
 - SARS-CoV-2 responsable de COVID-19

Décembre 2019 à Wuhan

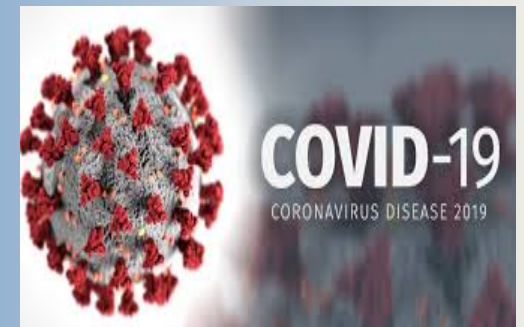
The NEW ENGLAND JOURNAL of MEDICINE

BRIEF REPORT

A Novel Coronavirus from Patients with Pneumonia in China, 2019

Na Zhu, Ph.D., Dingyu Zhang, M.D., Wenling Wang, Ph.D., Xingwang Li, M.D., Bo Yang, M.S., Jingdong Song, Ph.D., Xiang Zhao, Ph.D., Baoying Huang, Ph.D., Weifeng Shi, Ph.D., Roujian Lu, M.D., Peihua Niu, Ph.D., Faxian Zhan, Ph.D., Xuejun Ma, Ph.D., Dayan Wang, Ph.D., Wenbo Xu, M.D., Guizhen Wu, M.D., George F. Gao, D.Phil., and Wenjie Tan, M.D., Ph.D., for the China Novel Coronavirus Investigating and Research Team

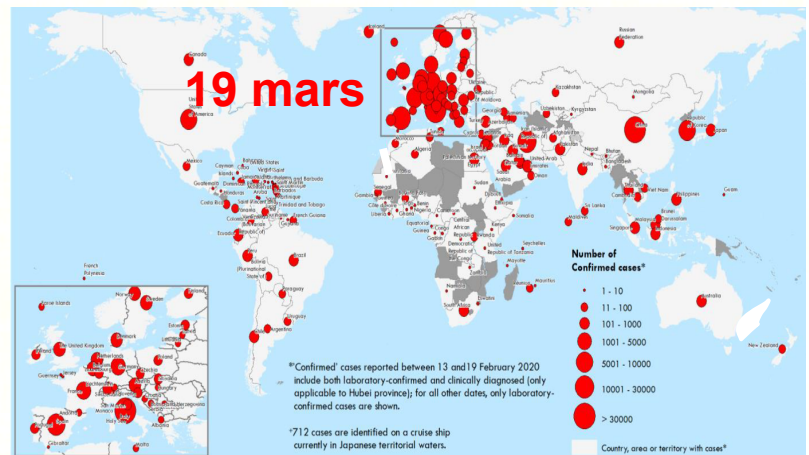
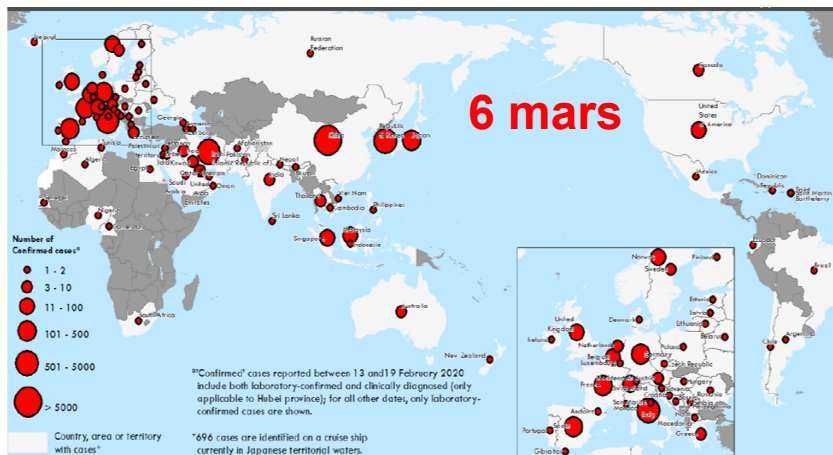
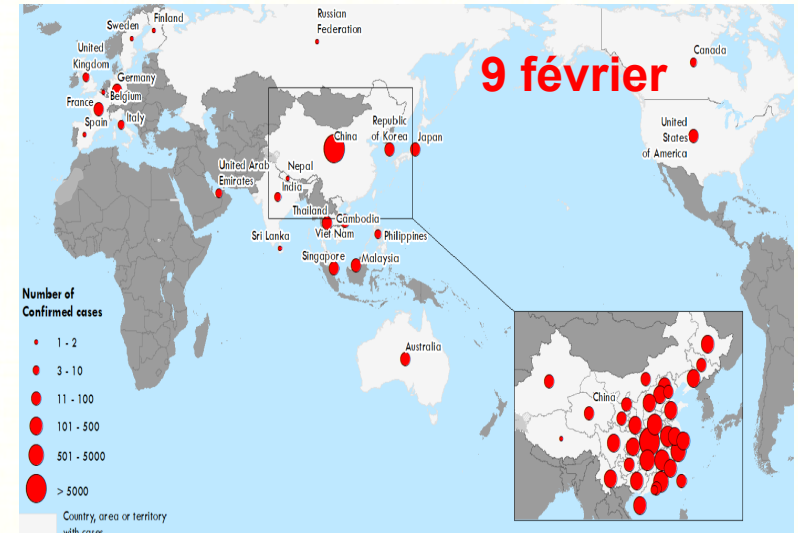
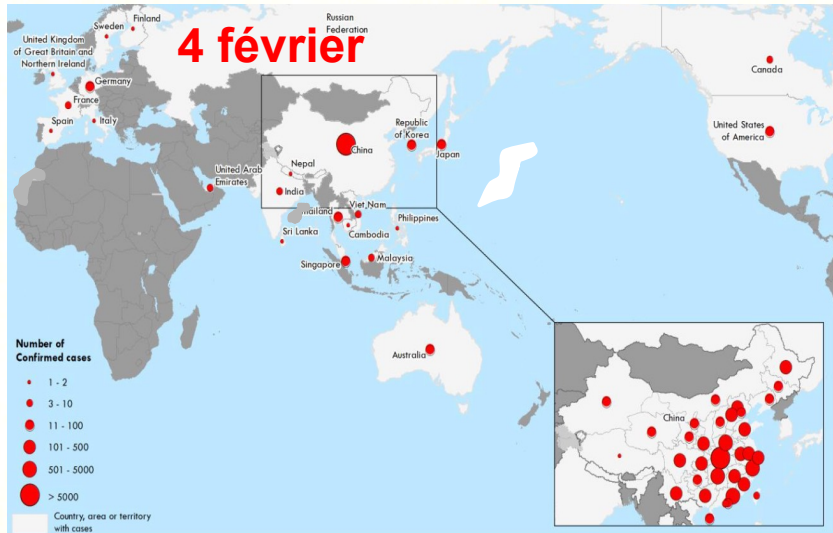
In December 2019, a cluster of patients with pneumonia of unknown cause was linked to a seafood wholesale market in Wuhan, China. A previously unknown betacoronavirus was discovered through the use of unbiased sequencing in samples from patients with pneumonia. Human airway epithelial cells were used to isolate a novel coronavirus, named 2019-nCoV, which formed a clade within the subgenus sarbecovirus, Orthocoronavirinae subfamily. Different from both MERS-CoV and SARS-CoV, 2019-nCoV is the seventh member of the family of coronaviruses that infect humans. Enhanced surveillance and further investigation are ongoing. (Funded by the National Key Research and Development Program of China and the National Major Project for Control and Prevention of Infectious Disease in China.)



Animal intermédiaire : le Pangolin



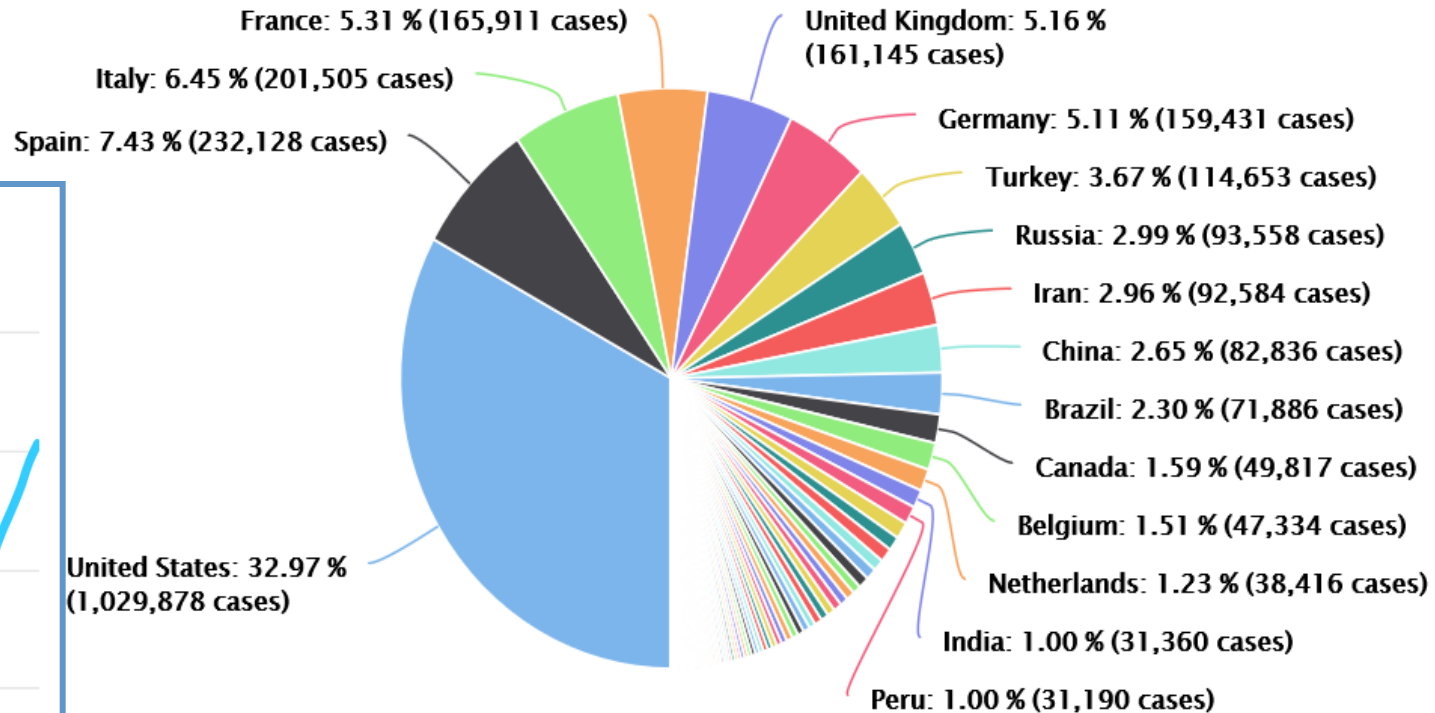
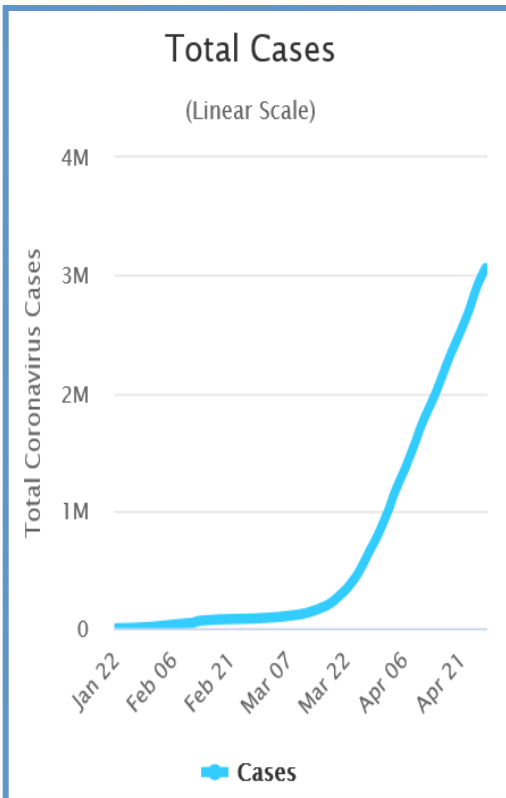
Extension géographique



Situation épidémiologique dans le monde

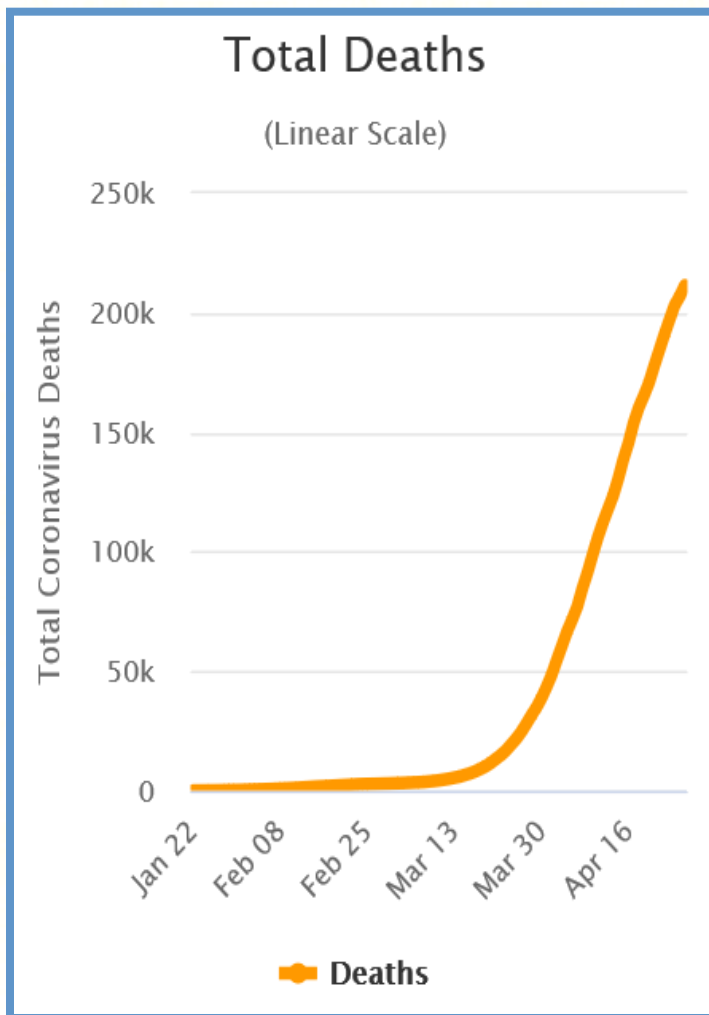
Au 28 avril 2020: **3 127 905** cas cumulés

9



Situation épidémiologique dans le monde

10



Au 28 avril 2020: **216 986** cas cumulés

<u>USA</u>	58,640
<u>Spain</u>	23,822
<u>Italy</u>	27,359
<u>France</u>	23,660
<u>UK</u>	21,678
<u>Germany</u>	6,215
<u>Turkey</u>	2,992
<u>Russia</u>	867
<u>Iran</u>	5,877
<u>China</u>	4,633
<u>Brazil</u>	5,017
<u>Canada</u>	2,852
<u>Belgium</u>	7,331

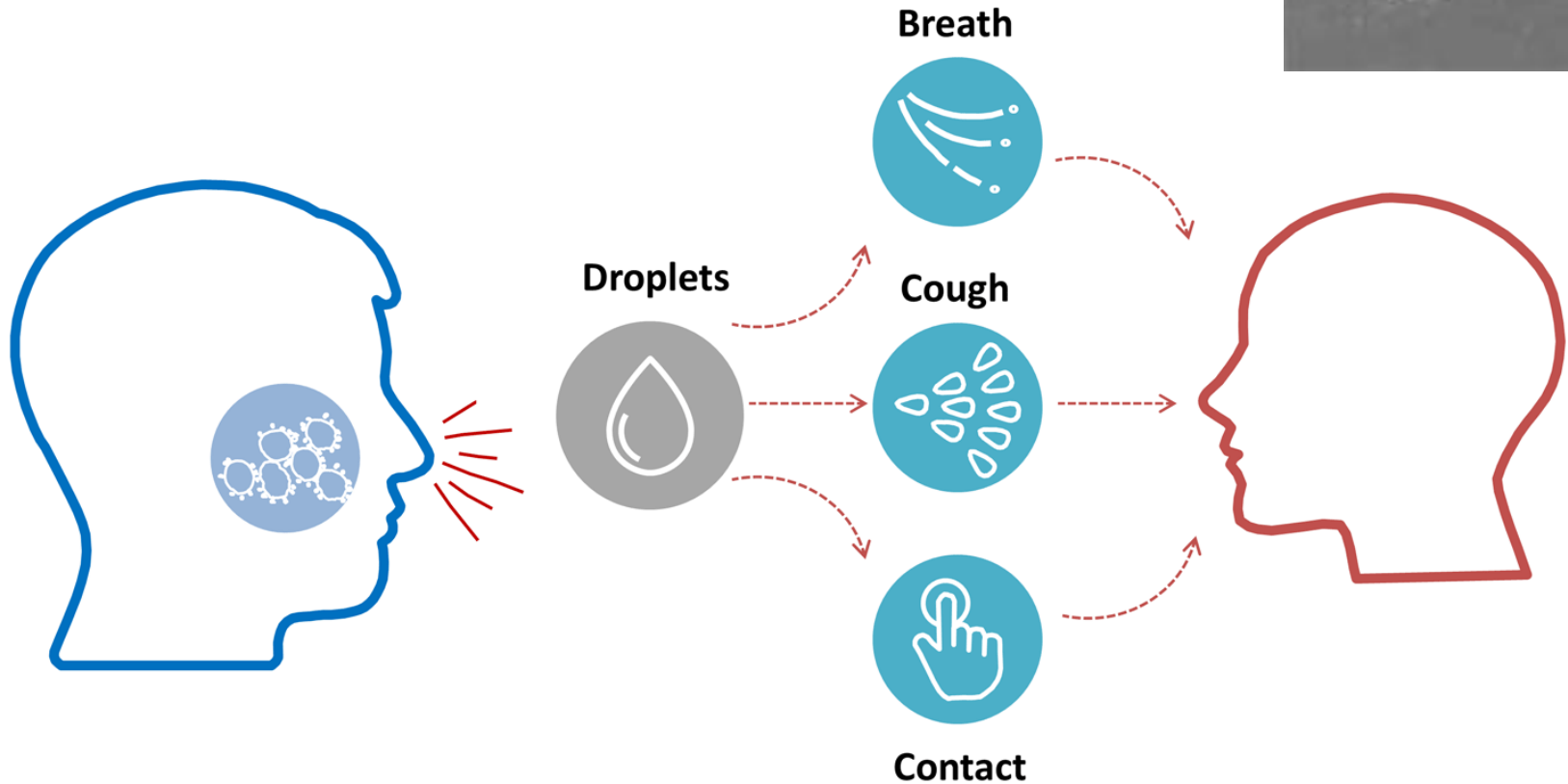
Décès en fonction de l'âge et des comorbidités (New York)

11

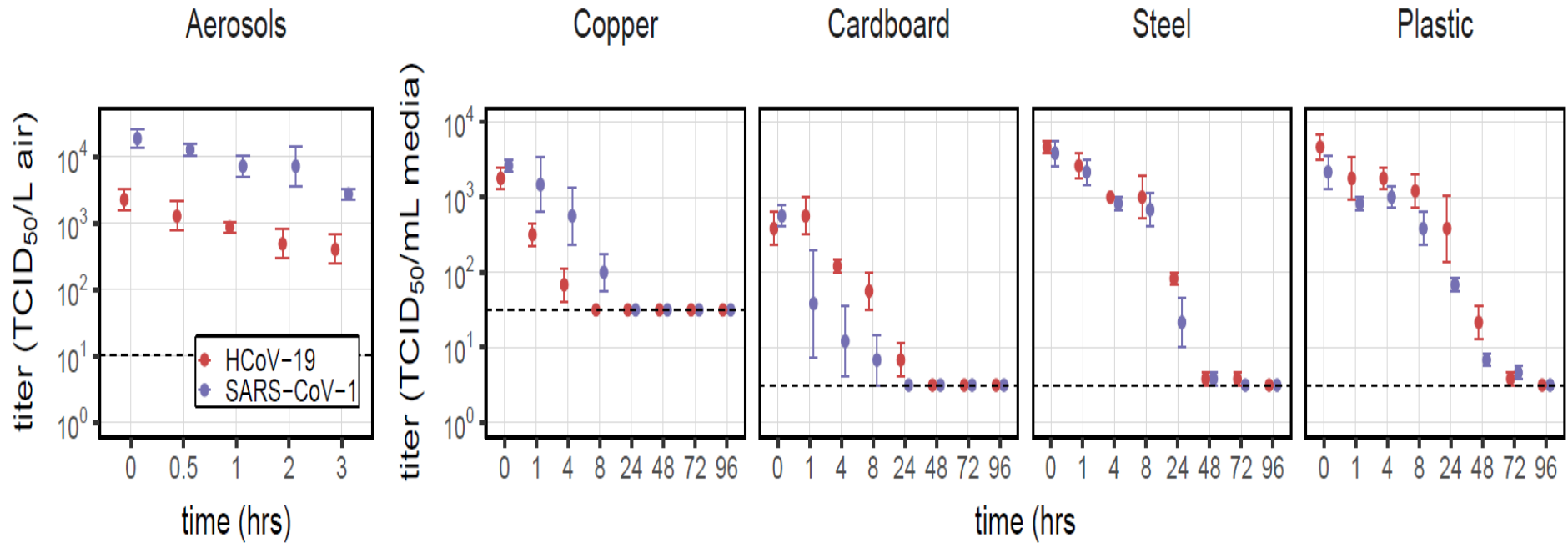
AGE	Number of Deaths	Share of deaths	With underlying conditions	Without underlying conditions	Unknown if with underlying cond.	Share of deaths of unknown + w/o cond.
0 - 17 years old	3	0.04%	3	0	0	0%
18 - 44 years old	309	4.5%	244	25	40	1.0%
45 - 64 years old	1,581	23.1%	1,343	59	179	3.5%
65 - 74 years old	1,683	24.6%	1,272	26	385	6.0%
75+ years old	3,263	47.7%	2,289	27	947	14.2%
TOTAL	6,839	100%	5,151	137	1,551	24.68%

<https://www1.nyc.gov/assets/doh/downloads/pdf/imm/covid-19-daily-data-summary-deaths-04152020-1.pdf>

Modes de transmission



Aerosol and surface stability of HCoV-19 (SARS-CoV-2) compared to SARS-CoV-1



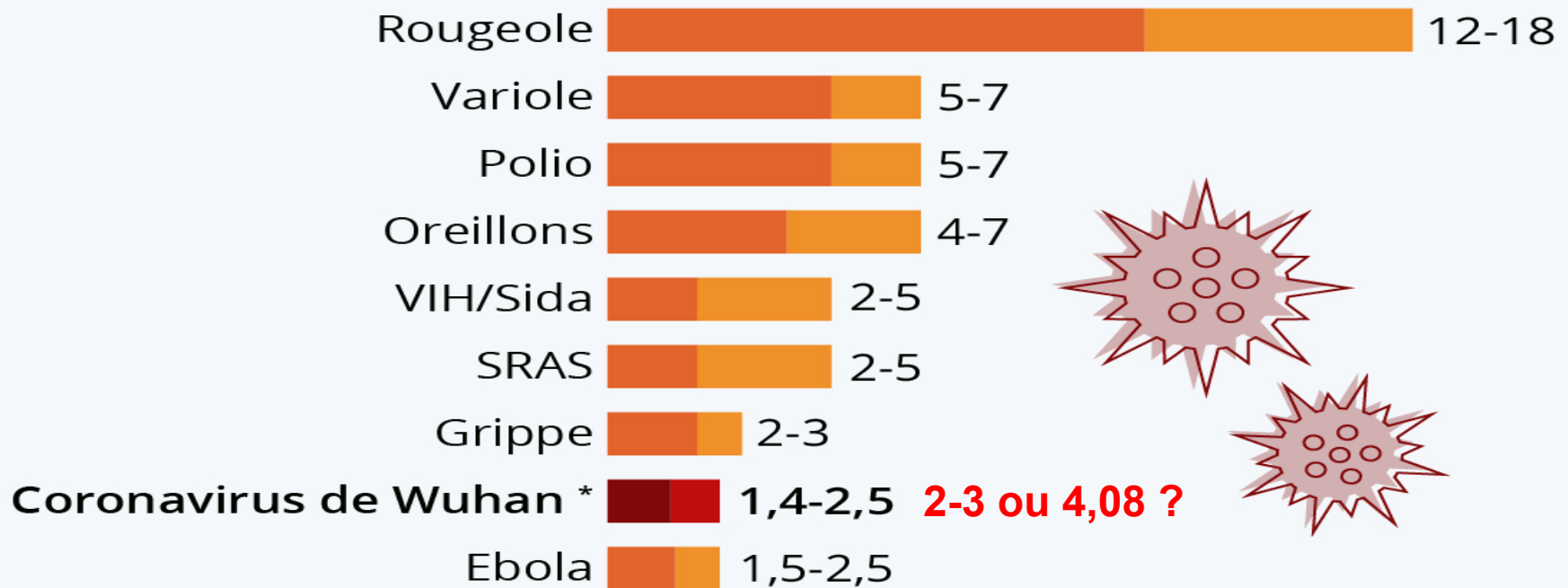
Air : 3 H
Cuivre : 4 H

Carton : 24 H
Plastique/Acier : 3 J

Bois : 4 J
Verre : 4 J

Quelle est la contagiosité du coronavirus ?

Nombre moyen de personnes auxquelles un malade risque de transmettre la maladie



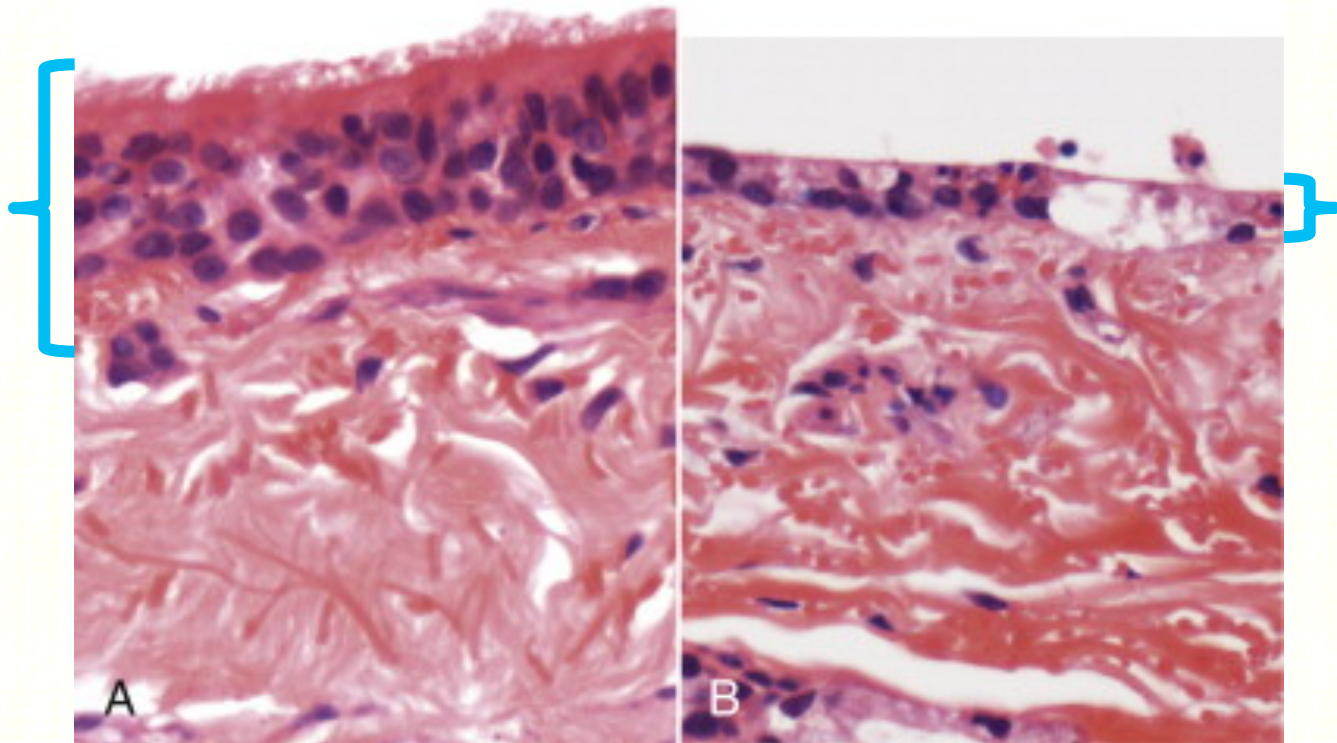
Sélection de maladies.

* Basé sur les dernières estimations de l'OMS (23 janvier 2019).

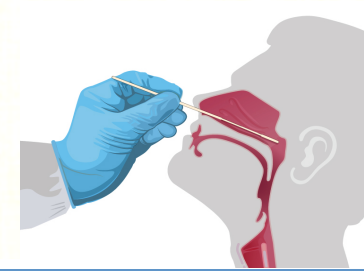
Source : OMS via Spiegel.de

Pouvoir pathogène

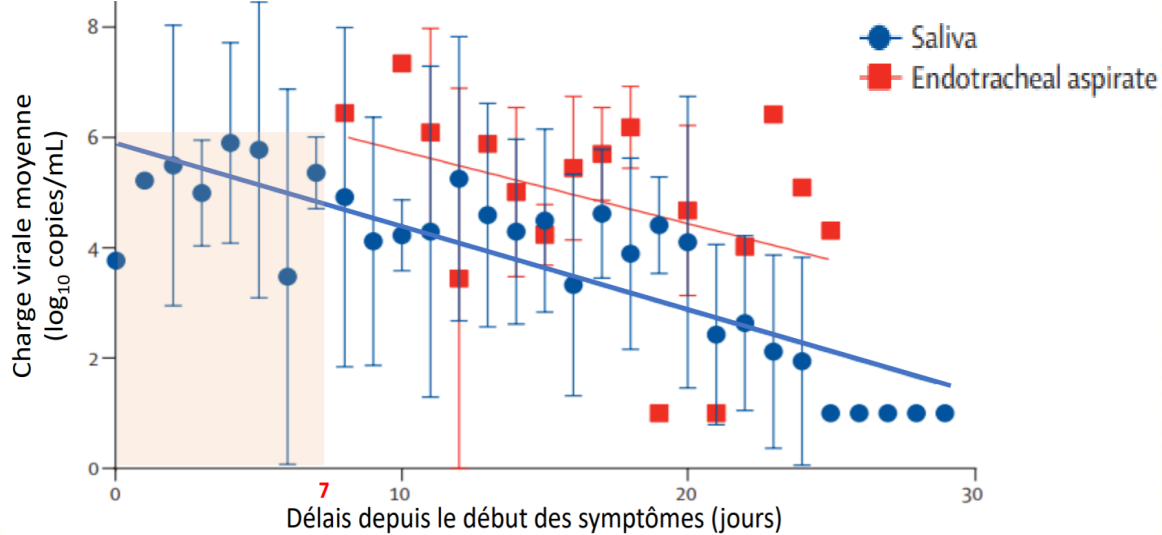
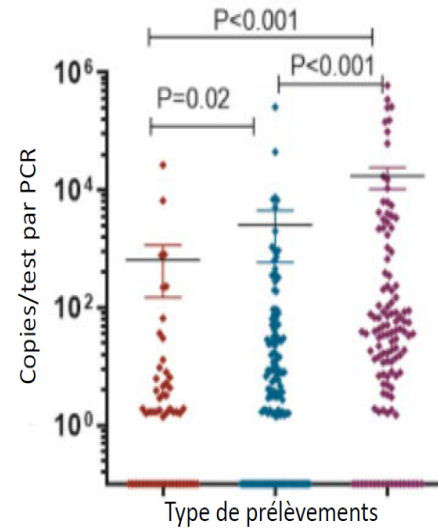
- Orage cytokinique : Inflammation, SDRA
- Vascularite



Diagnostic biologique

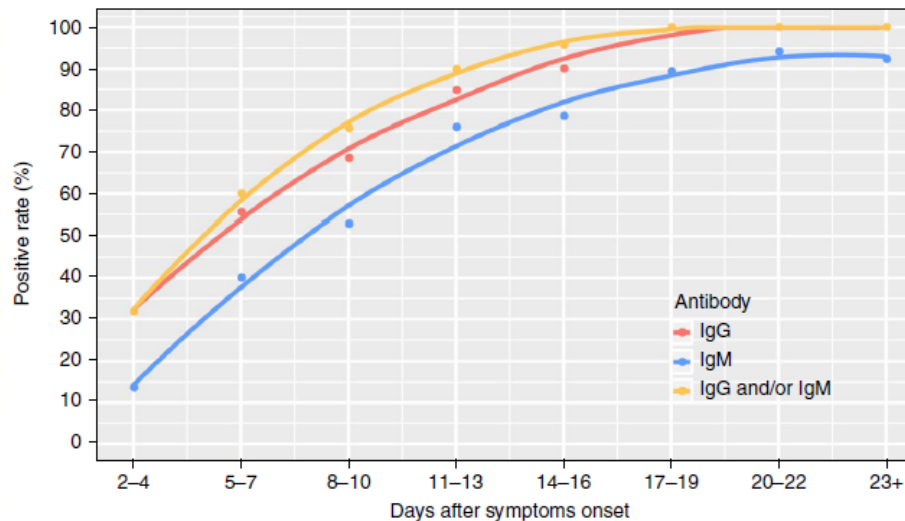


16



To KK, *Lancet Infect Dis.* 2020

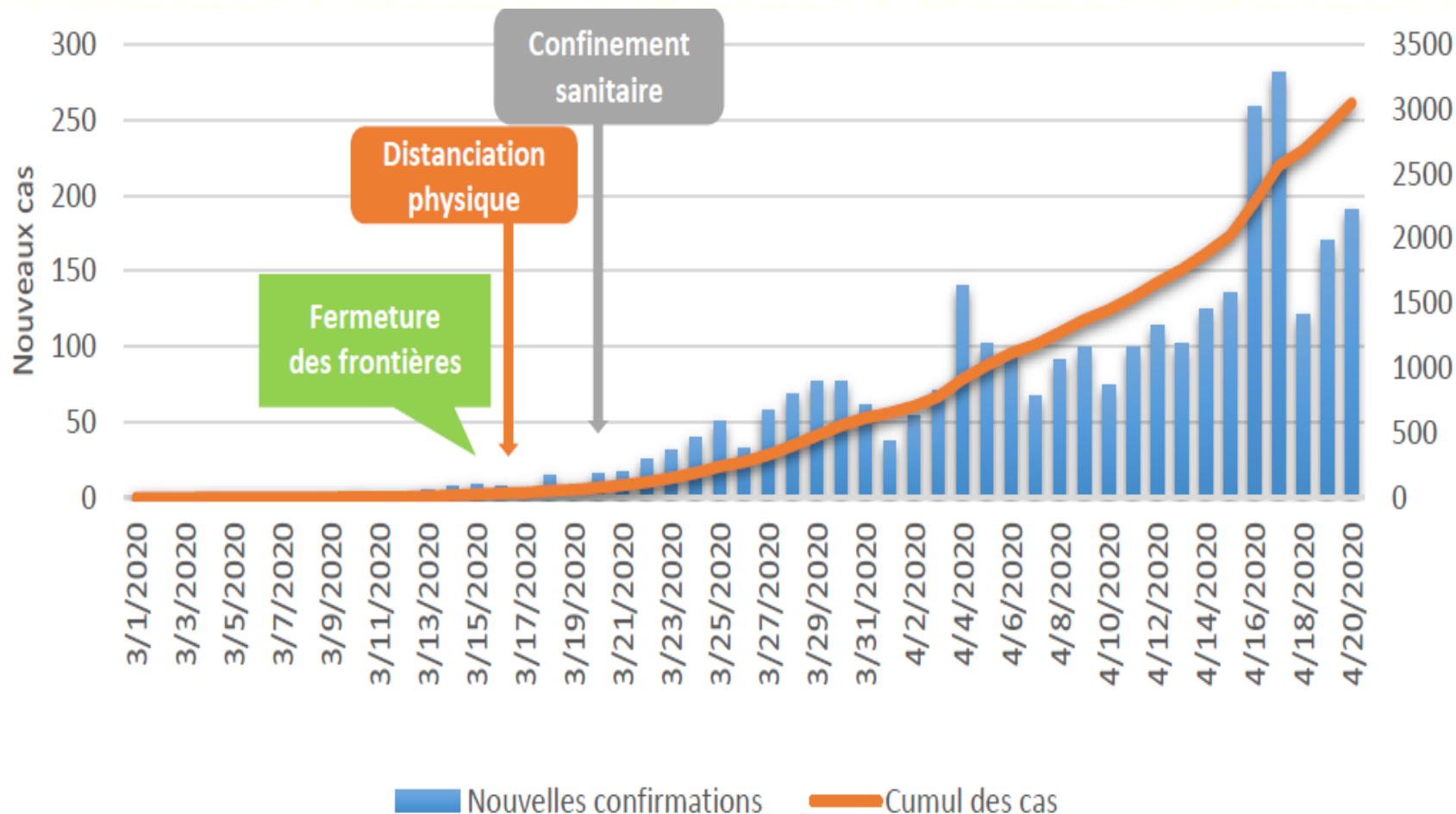
Yu F. *Clin Infect Dis.* 2020



Quan-Xin Long, *Nature Med* 2020

Situation épidémiologique au Maroc

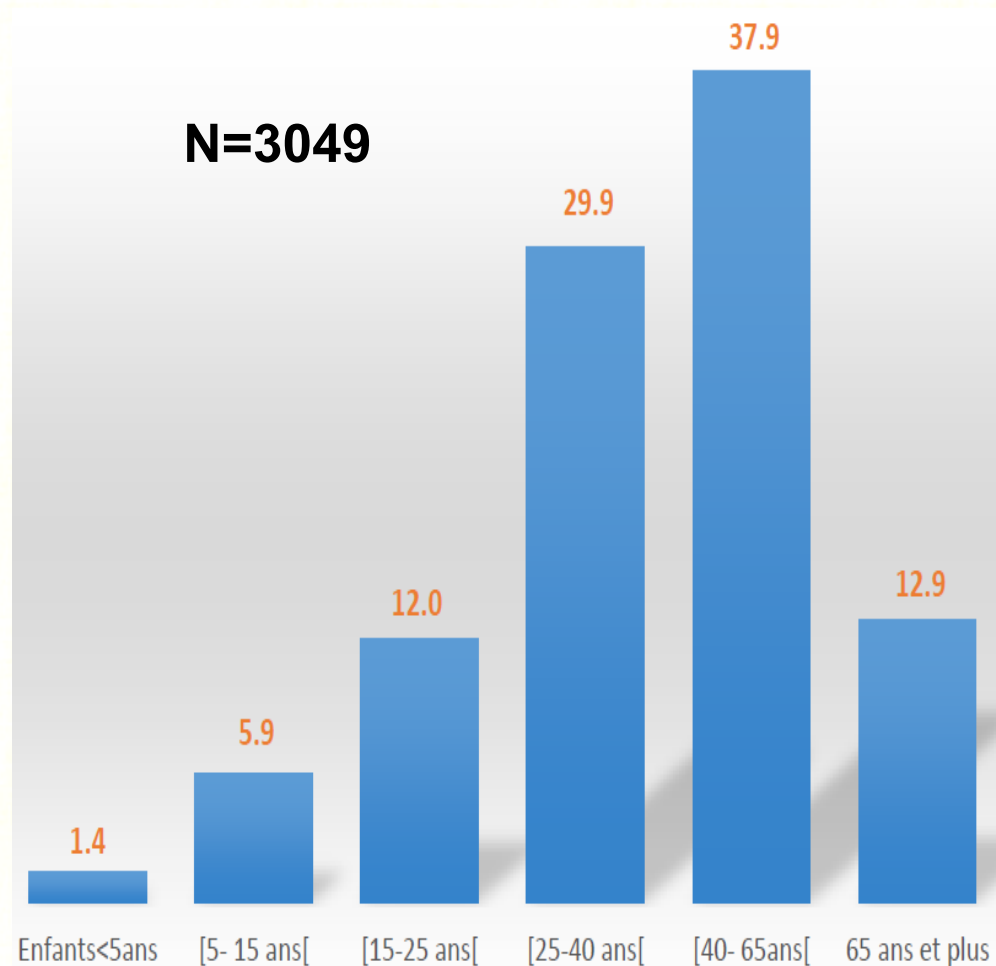
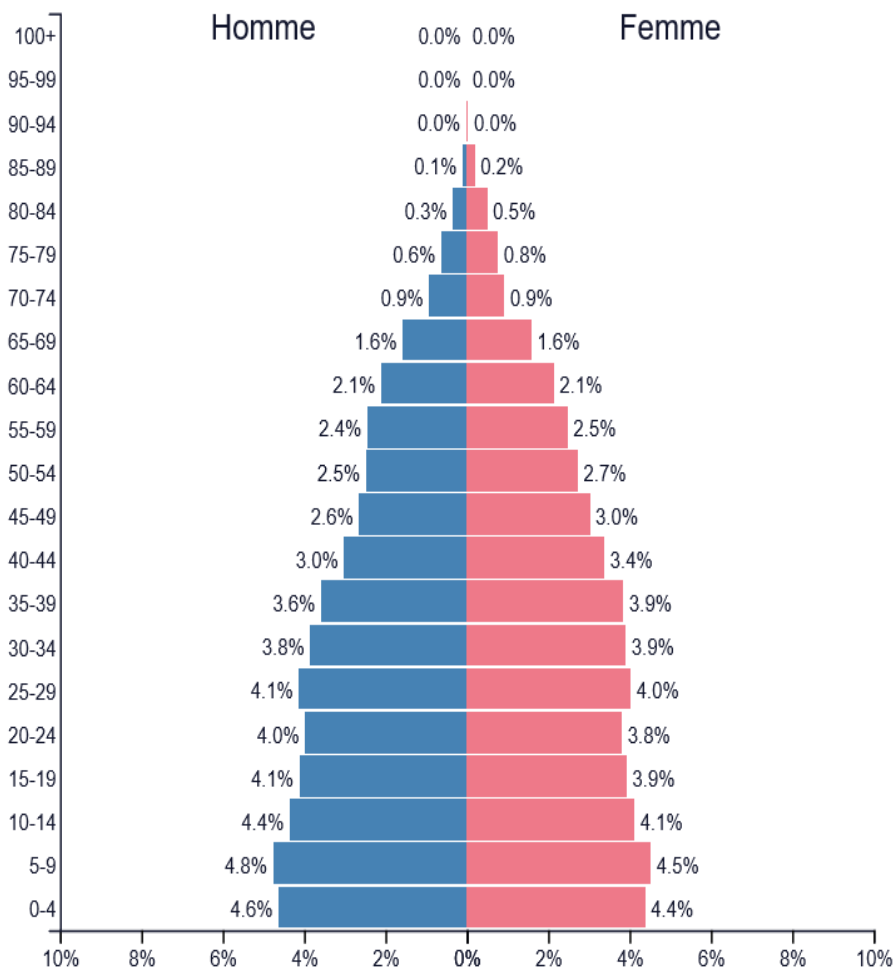
Evolution des cas confirmés (2 mars – 20 avril)



Répartition selon l'âge

(2 mars – 20 avril)

18



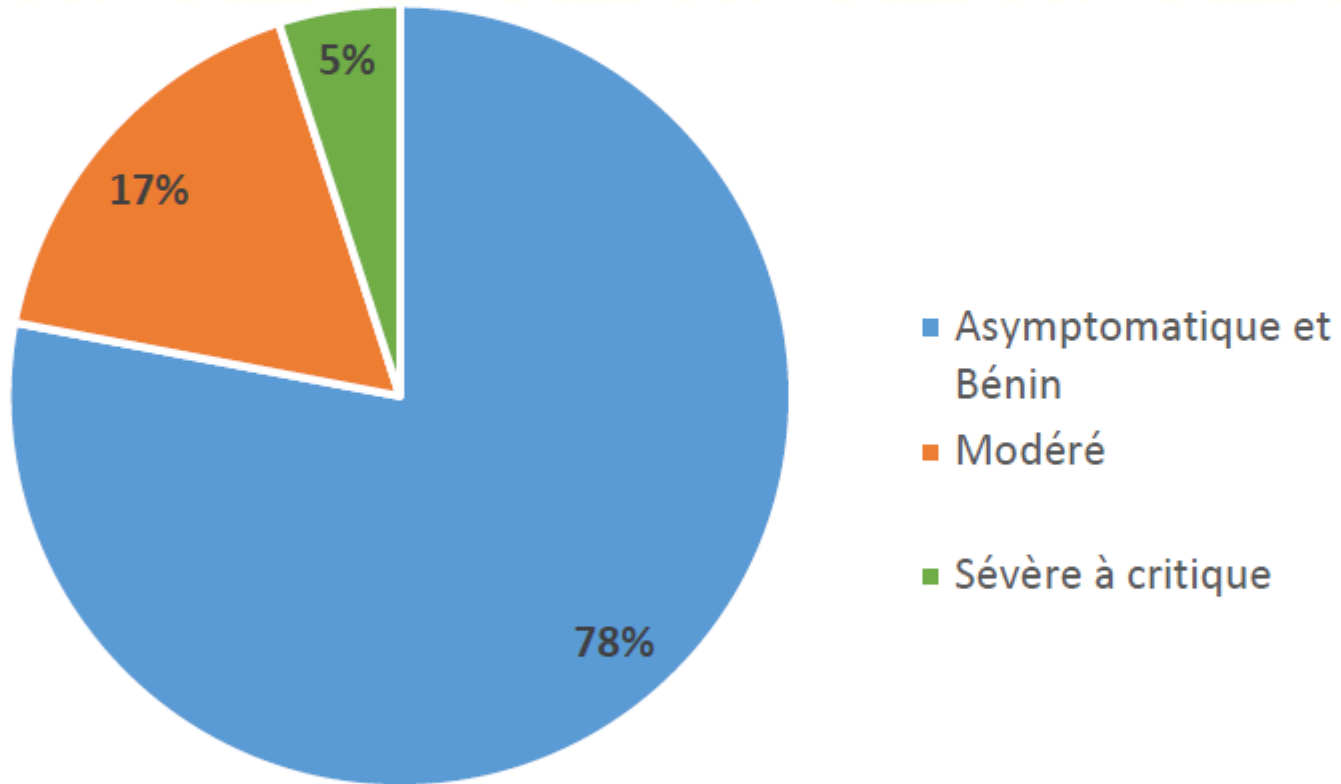
Répartition des cas Covid-19 par régions (N=4252)

19

Région	Nombre de cas confirmés
Beni Mellal-Khénifra	80
Casa Settat	1086
Daraa-tafilalet	522
Dakhla-Oued Ed Dahab	2
Fès meknes	534
Guelmim Oued Noun	29
Laâyoune-Sakia El Hamra	4
Marrakech Safi	917
Oriental	175
Rabat Salé Kenitra	309
Souss-Massa	50
Tanger Tetouan Al Hoceima	544

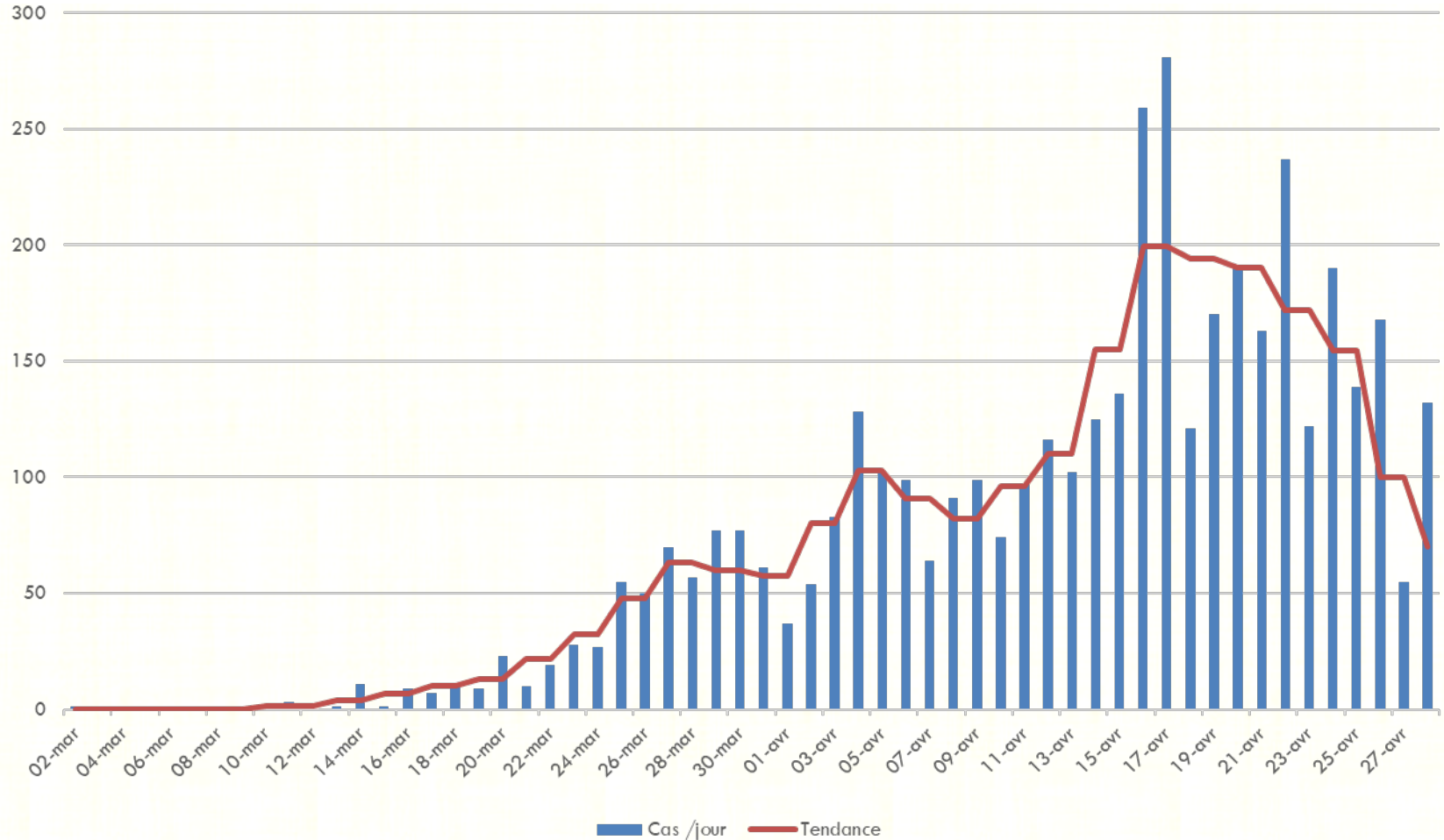
Etat clinique à l'admission (N=3049)

20



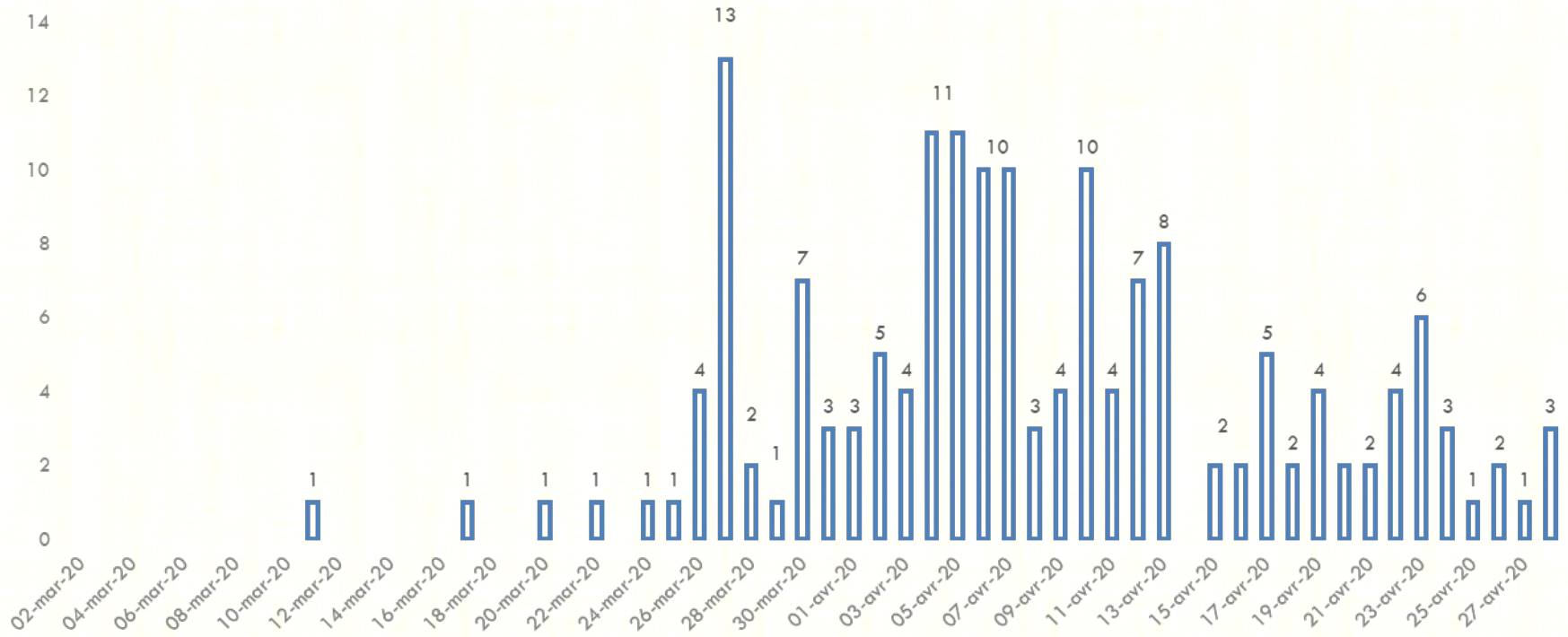
Nouveaux cas quotidiens et tendances

21



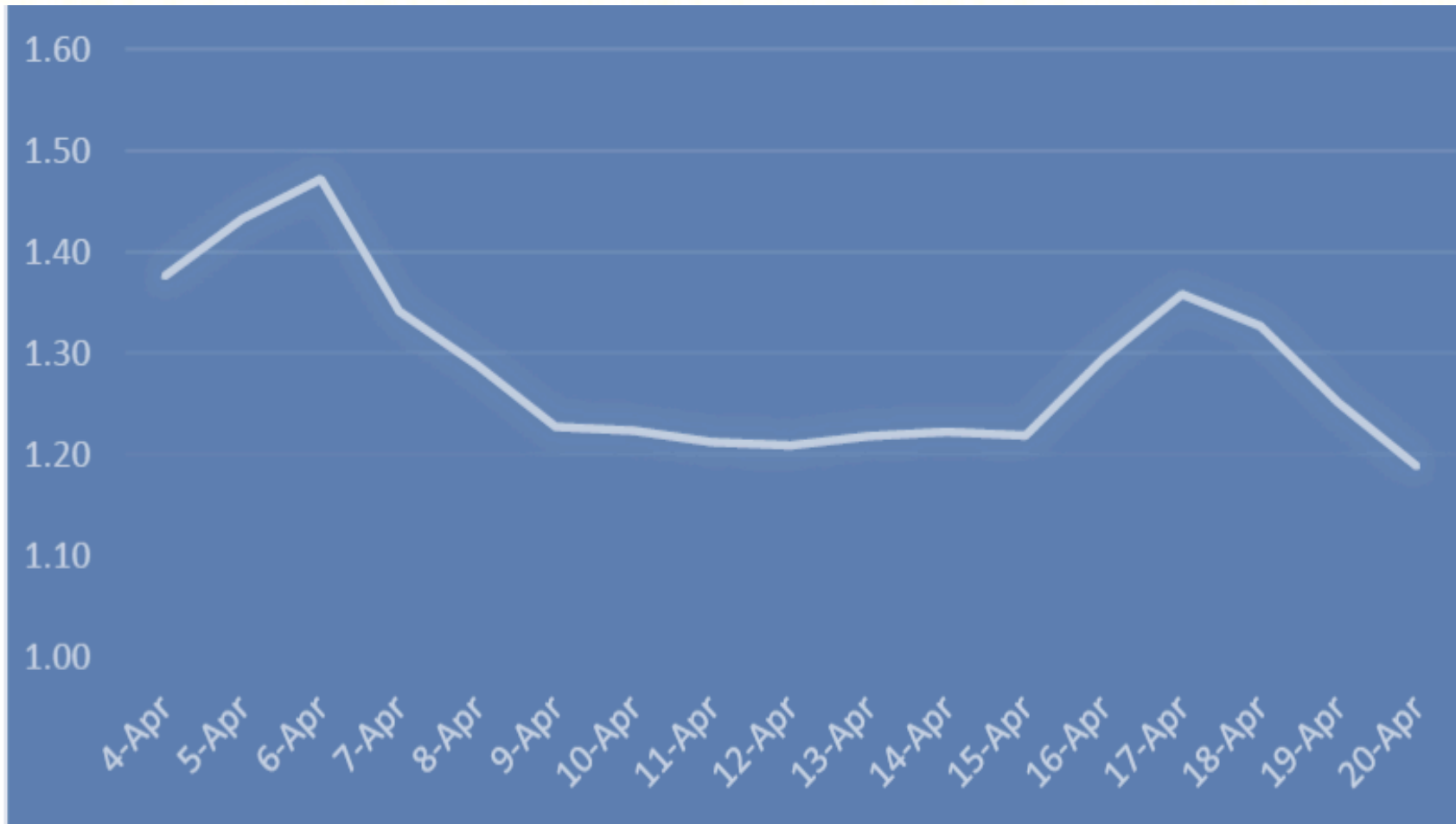
Evolution du nombre des décès (N=165 au 28 avril)

22



Evolution du R_0 de l'épidémie

23



Peut-on prédire la fin de l'épidémie ?

24

