



UNIVERSITÉ
DE GENÈVE

FACULTÉ DE MÉDECINE
Institut de santé globale



ETH zürich EPFL



Hôpitaux
Universitaires
Genève

MÉDECINE TROPICALE ET HUMANITAIRE

FÉVR.
18

Jeudi d'Unisanté - Point situation COVID-19 :
vaccination et autres enjeux

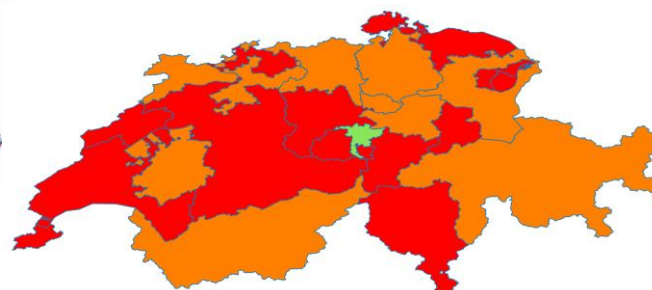
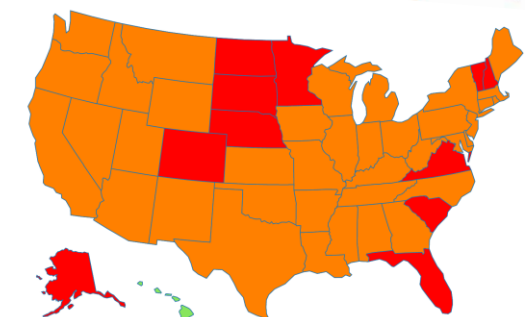
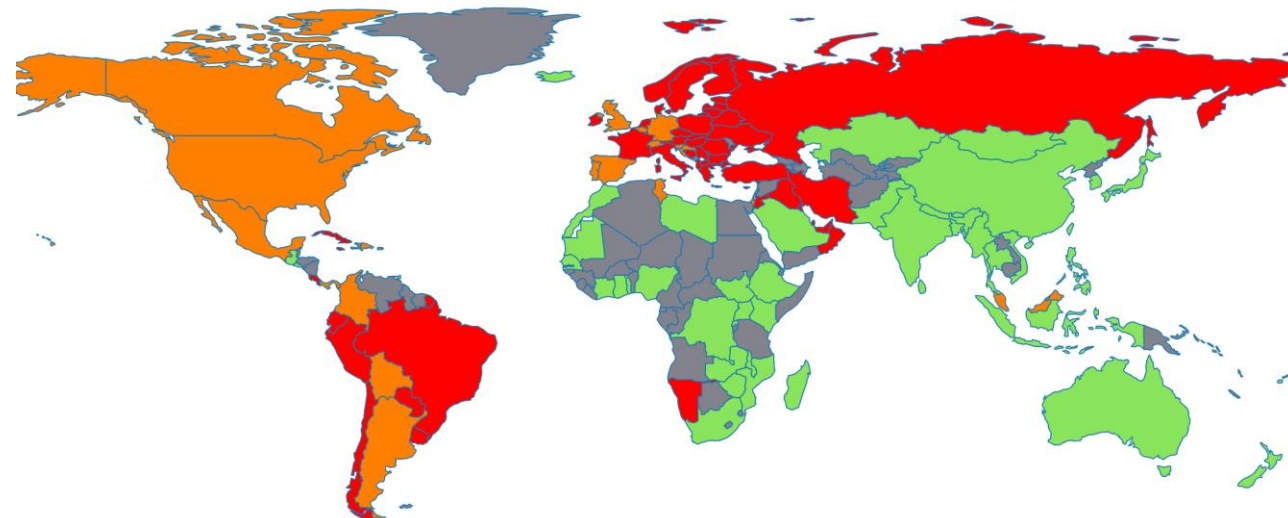
COVID-19

Que nous réserve le printemps ?

Antoine Flahault



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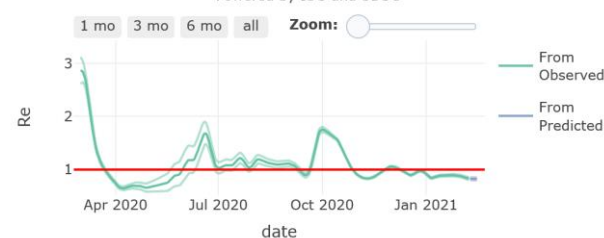


Suisse

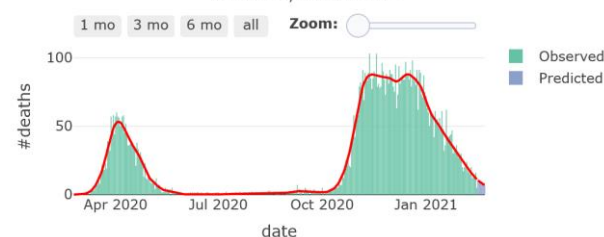
Daily cases for Switzerland on 2021-02-17
Powered by ISG and SDSC



R-effective for Switzerland on 2021-02-17
Powered by ISG and SDSC

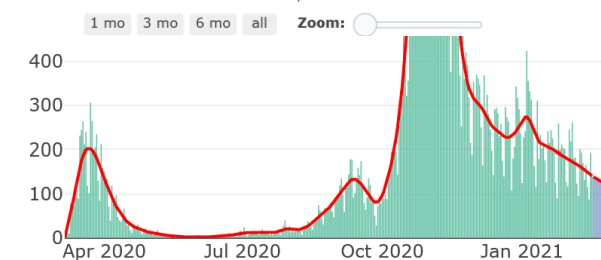


Daily deaths for Switzerland on 2021-02-17
Powered by ISG and SDSC

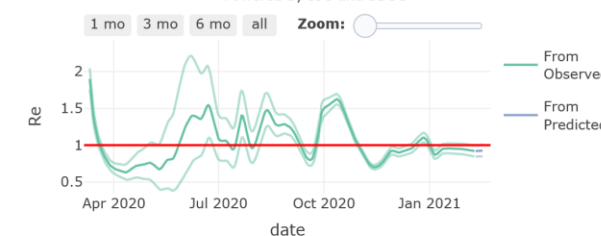


Vaud

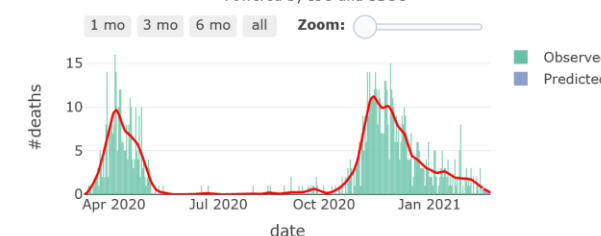
Daily cases for Vaud on 2021-02-17
Powered by ISG and SDSC



R-effective for Vaud on 2021-02-17
Powered by ISG and SDSC



Daily deaths for Vaud on 2021-02-17
Powered by ISG and SDSC



Norvège

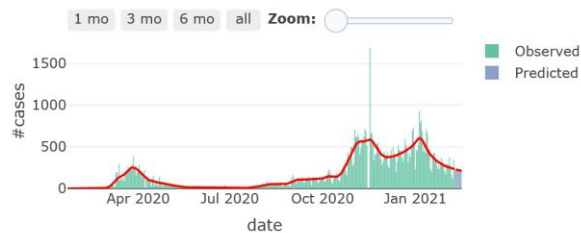
Nouvelle-Zélande

Chine

Japon

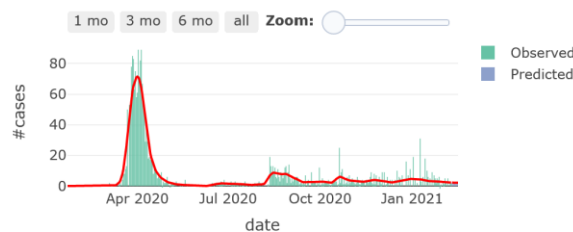
Daily cases for Norway on 2021-02-10

Powered by ISG and SDSC



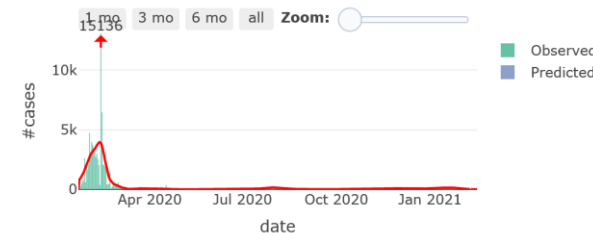
Daily cases for New Zealand on 2021-02-10

Powered by ISG and SDSC



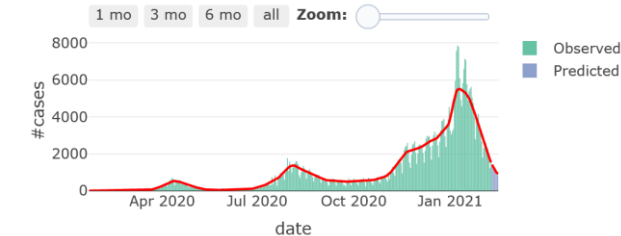
Daily cases for China on 2021-02-10

Powered by ISG and SDSC



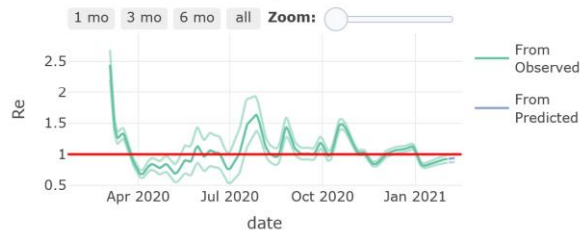
Daily cases for Japan on 2021-02-10

Powered by ISG and SDSC



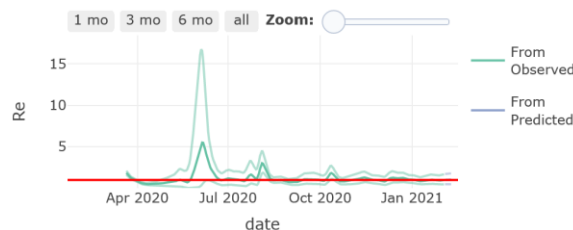
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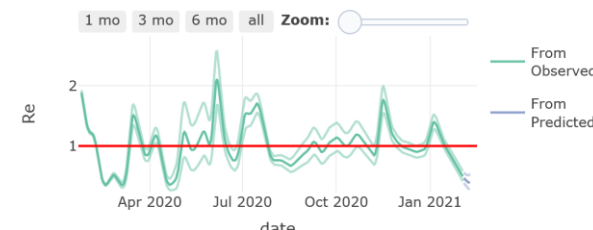
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R-effective for China on 2021-02-10

Powered by ISG and SDSC



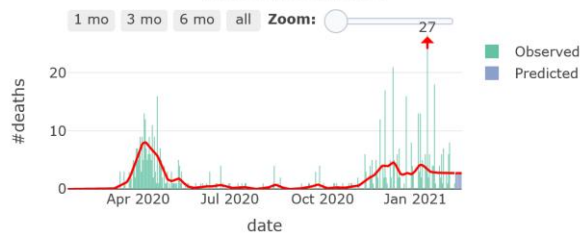
R-effective for Japan on 2021-02-10

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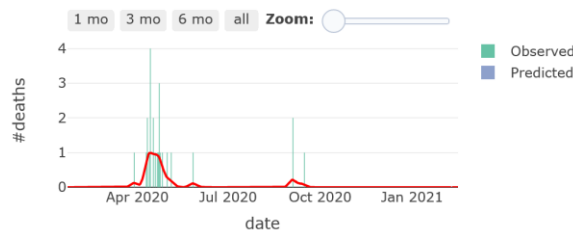
Daily deaths for Norway on 2021-02-10

Powered by ISG and SDSC



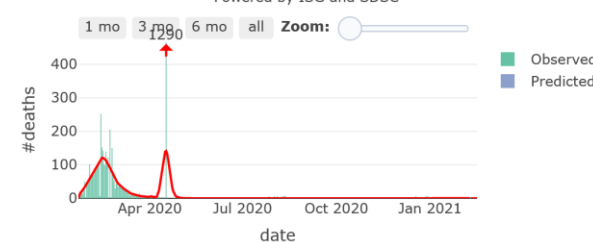
Daily deaths for New Zealand on 2021-02-10

Powered by ISG and SDSC



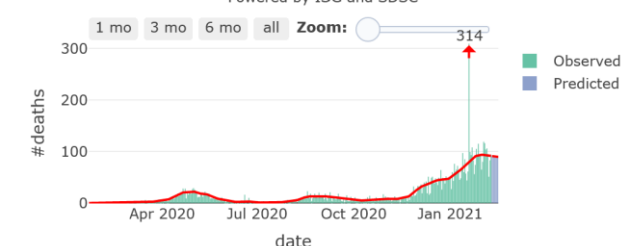
Daily deaths for China on 2021-02-10

Powered by ISG and SDSC



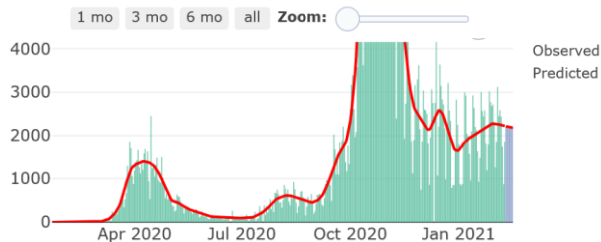
Daily deaths for Japan on 2021-02-10

Powered by ISG and SDSC

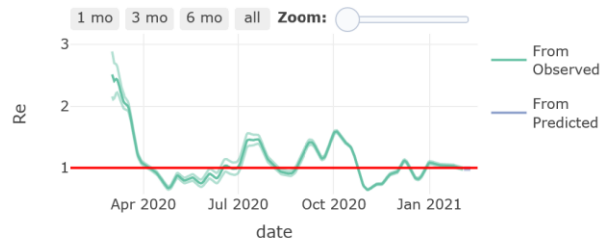


Belgique

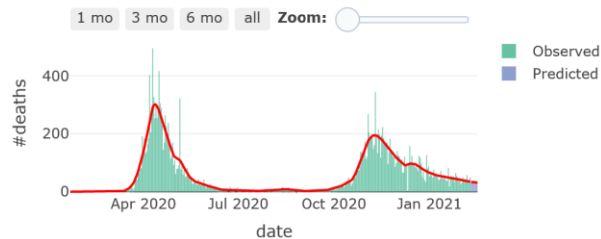
Daily cases for Belgium on 2021-02-10
Powered by ISG and SDSC



R-effective for Belgium on 2021-02-10
Powered by ISG and SDSC

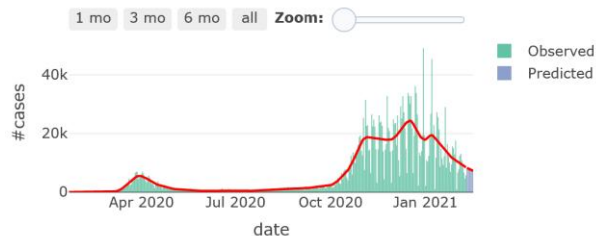


Daily deaths for Belgium on 2021-02-10
Powered by ISG and SDSC



Allemagne

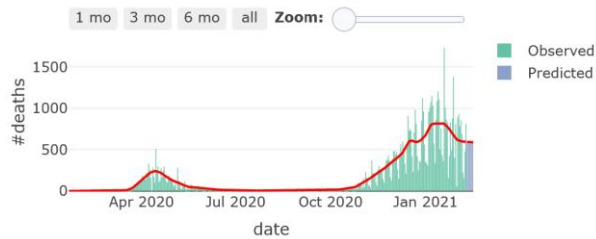
Daily cases for Germany on 2021-02-10
Powered by ISG and SDSC



R-effective for Germany on 2021-02-10
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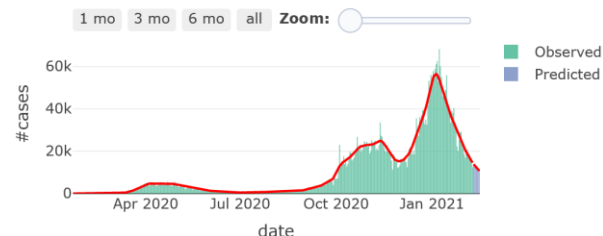


Daily deaths for Germany on 2021-02-10
Powered by ISG and SDSC

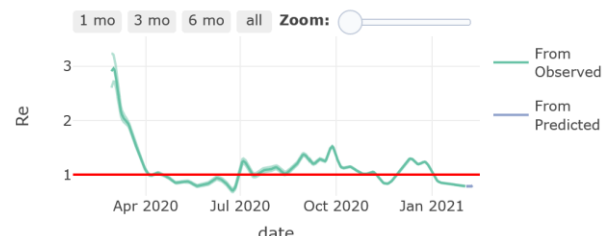


Royaume-Uni

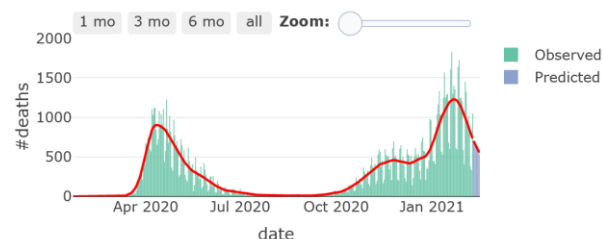
Daily cases for United Kingdom on 2021-02-10
Powered by ISG and SDSC



R-effective for United Kingdom on 2021-02-10
Powered by ISG and SDSC



Daily deaths for United Kingdom on 2021-02-10
Powered by ISG and SDSC

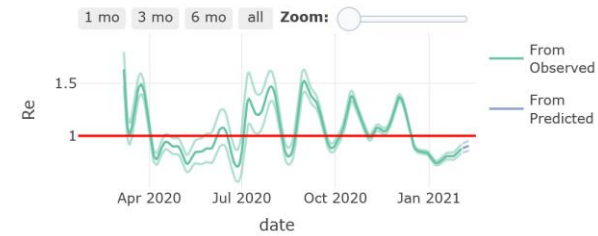


Danemark

Daily cases for Denmark on 2021-02-10
Powered by ISG and SDSC



R-effective for Denmark on 2021-02-10
Powered by ISG and SDSC

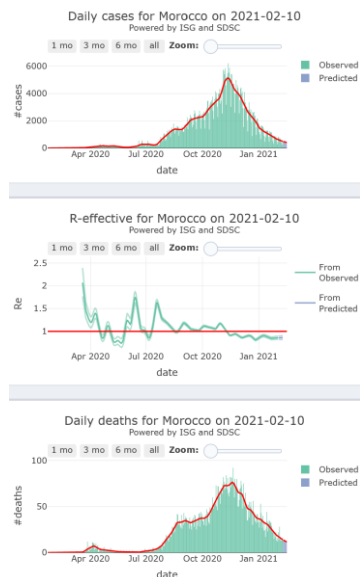


Daily deaths for Denmark on 2021-02-10
Powered by ISG and SDSC

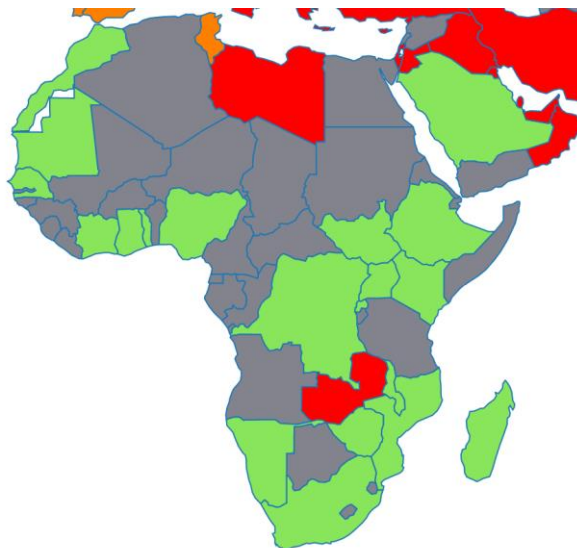
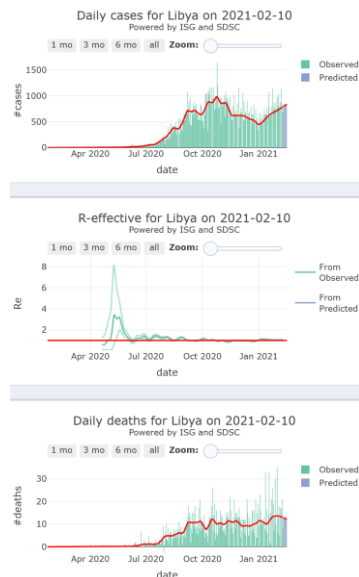


Afrique : trois profils épidémiologiques

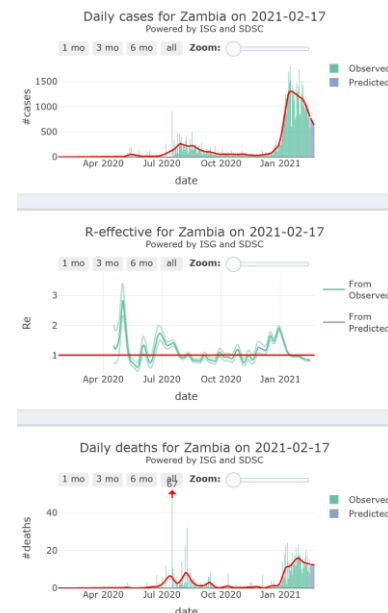
Maroc



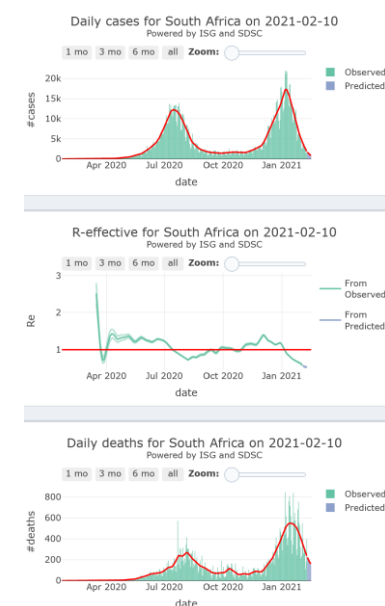
Libye



Zambie



Afrique du Sud



- **Afrique du Nord** : reprise automno-hivernale de l'activité épidémique
- **Afrique sub-saharienne** : peu de tests, mais peu d'activité épidémique
 - Influence du climat (pas d'hiver) ?
 - Rôle de la démographie ? âge médian = 18 ans
 - Immunité croisée ?
 - Prédisposition génétique protectrice ?
 - Faible interconnexion ? Sous-notification ?
- **Afrique australe**: Vague hivernale (juin-septembre) et puis rebond, nouveau variant

Nouveaux variants du SARS-CoV-2

The New York Times



The Coronavirus Is Mutating. What Does That Mean for Us?



FINANCIAL TIMES

Hancock warns of tough restrictions for months amid new Covid strain

UK health secretary says latest fast-spreading variant of virus is 'out of control'



INTERNATIONAL 19/12/2020 17:43 CET | Actualisé il y a 11 heures

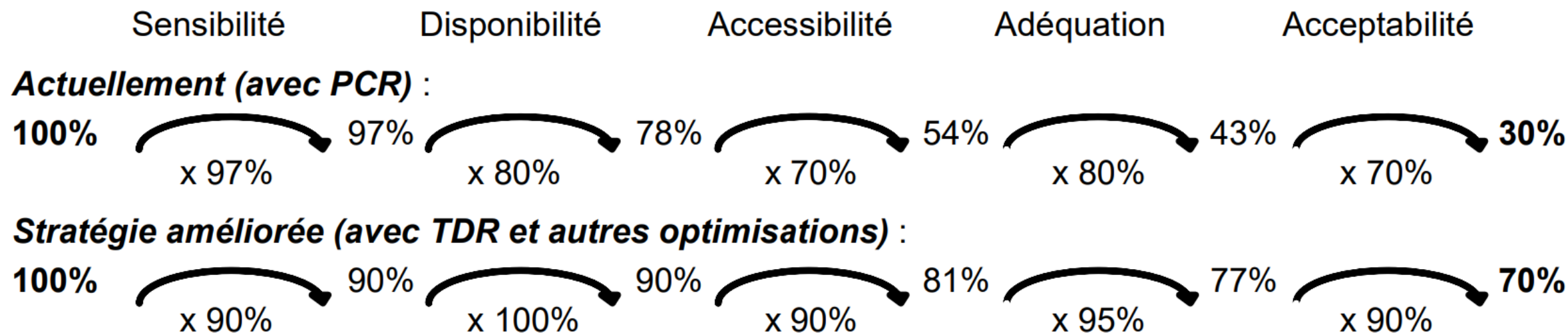
Face à une nouvelle souche du Covid, le Royaume-Uni reconfiné en partie

Londres, l'est, et le sud-est de l'Angleterre sont reconfinés alors que Boris Johnson et le Royaume-Uni s'inquiètent d'une nouvelle souche de coronavirus.

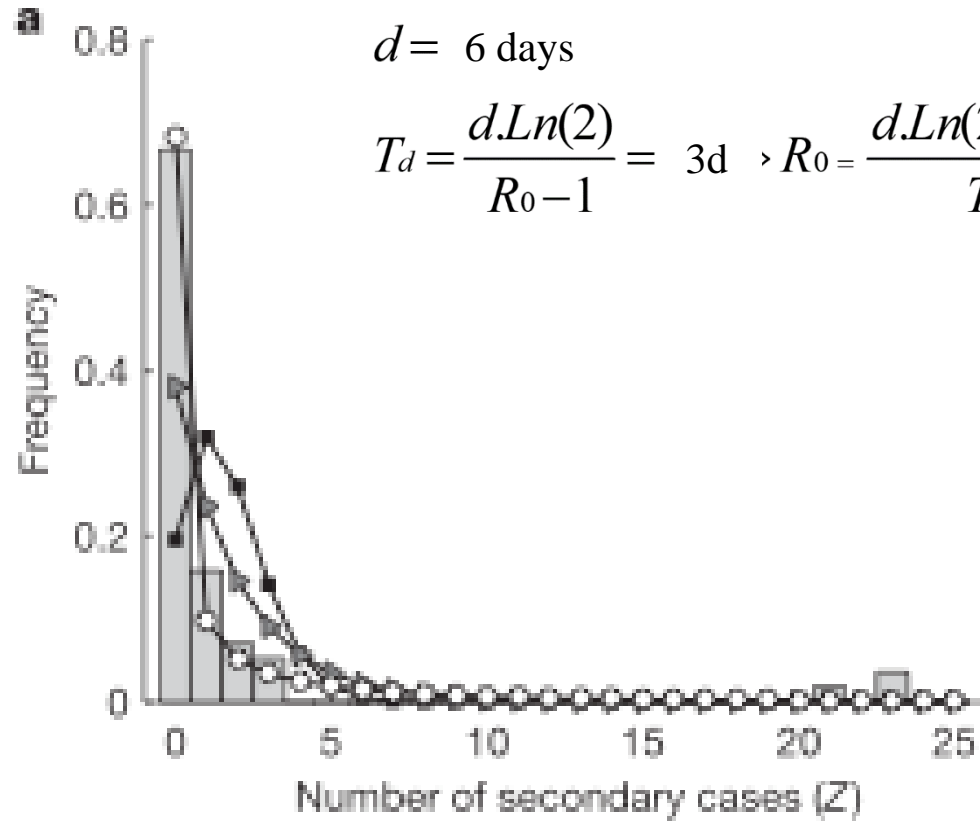
Le HuffPost avec AFP

Health secretary Matt Hancock said the new variant of the virus — which is estimated to spread 70 per cent faster than previous strains — was “out of control”, as he justified the government’s new restrictions in the south-east of England.

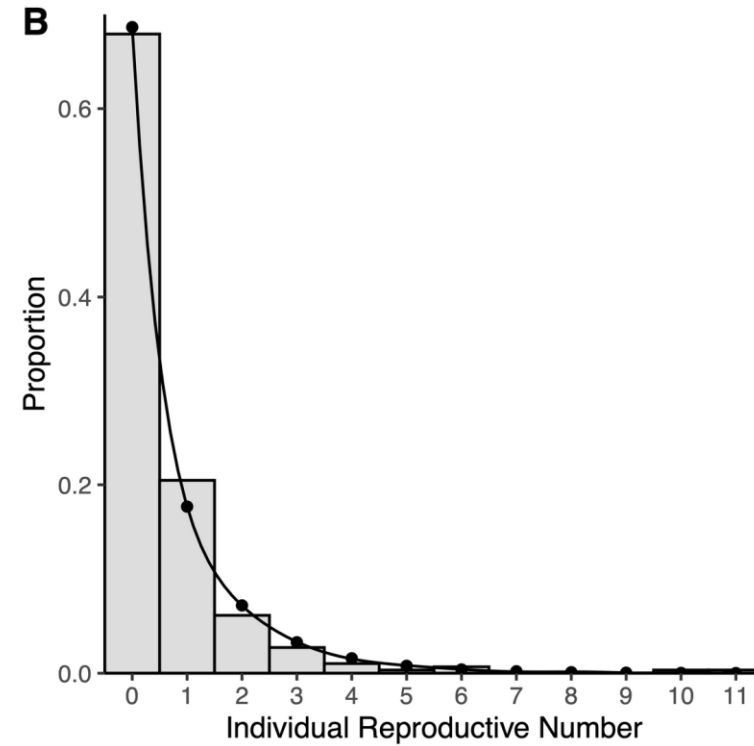
Stratégies de testing



La surdispersion



Ro du SRAS à Singapour (Lloyd-Smith, 2005)



Ro du COVID-19 à Hong-Kong (Adam D, 2020)

Stratégies de tracing

1. **La méthode prospective**, classique, occidentale : on recherche les contacts du cas rapporté
2. **La méthode rétrospective**, japonaise : on recherche les contacts du cas (= parent) qui a contaminé le cas rapporté

Quatre freins disponibles

1. Les gestes barrières



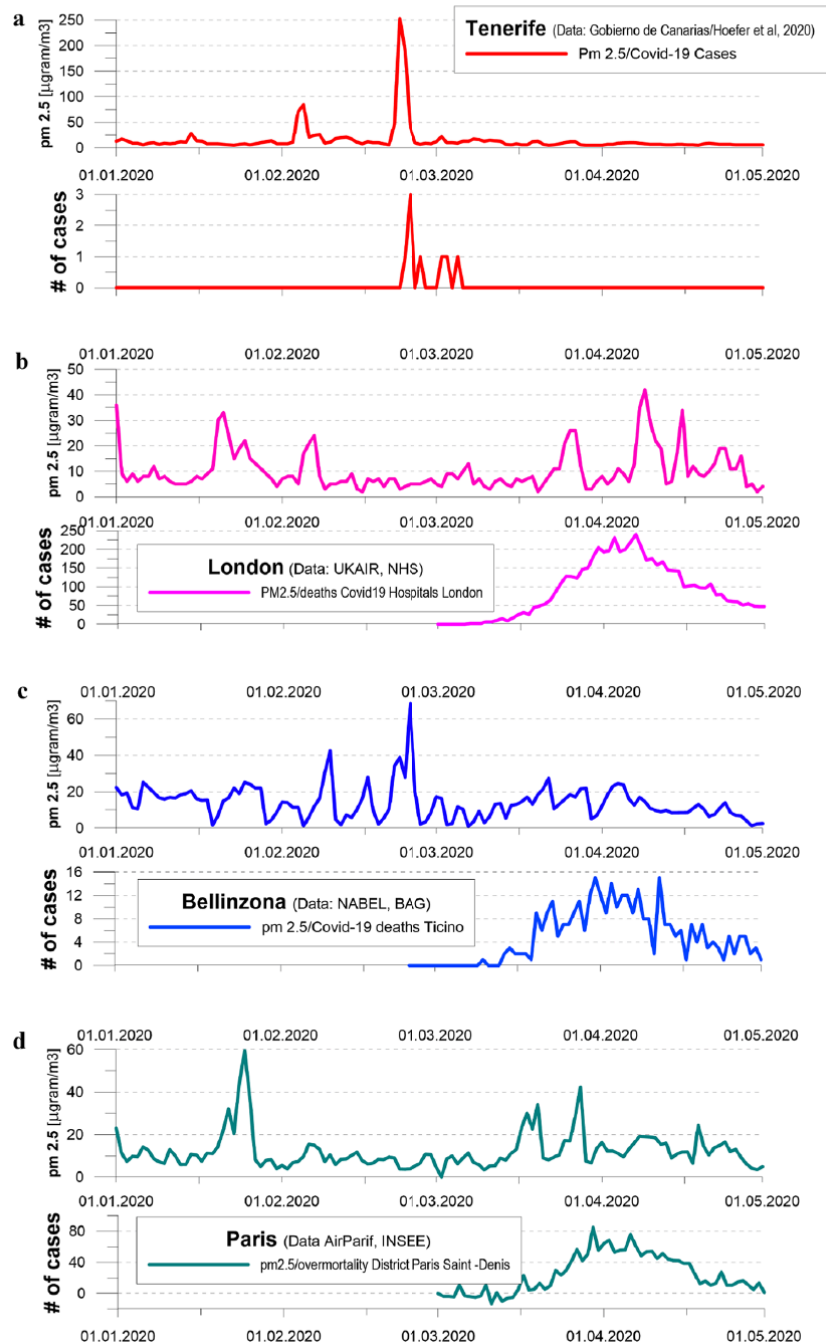
2. Le confinement

**4. L'immunité/
traitements**

3. Le frein estival/l'environnement

Saison, climat, pollution, environnement et COVID-19 ?

Des pics de particules fines (PM 2.5) survenant
avant des pics épidémiques de COVID-19



Source : Rohrer M, Flahault A, Stoffel M.
Earth Systems and Environment, 2020

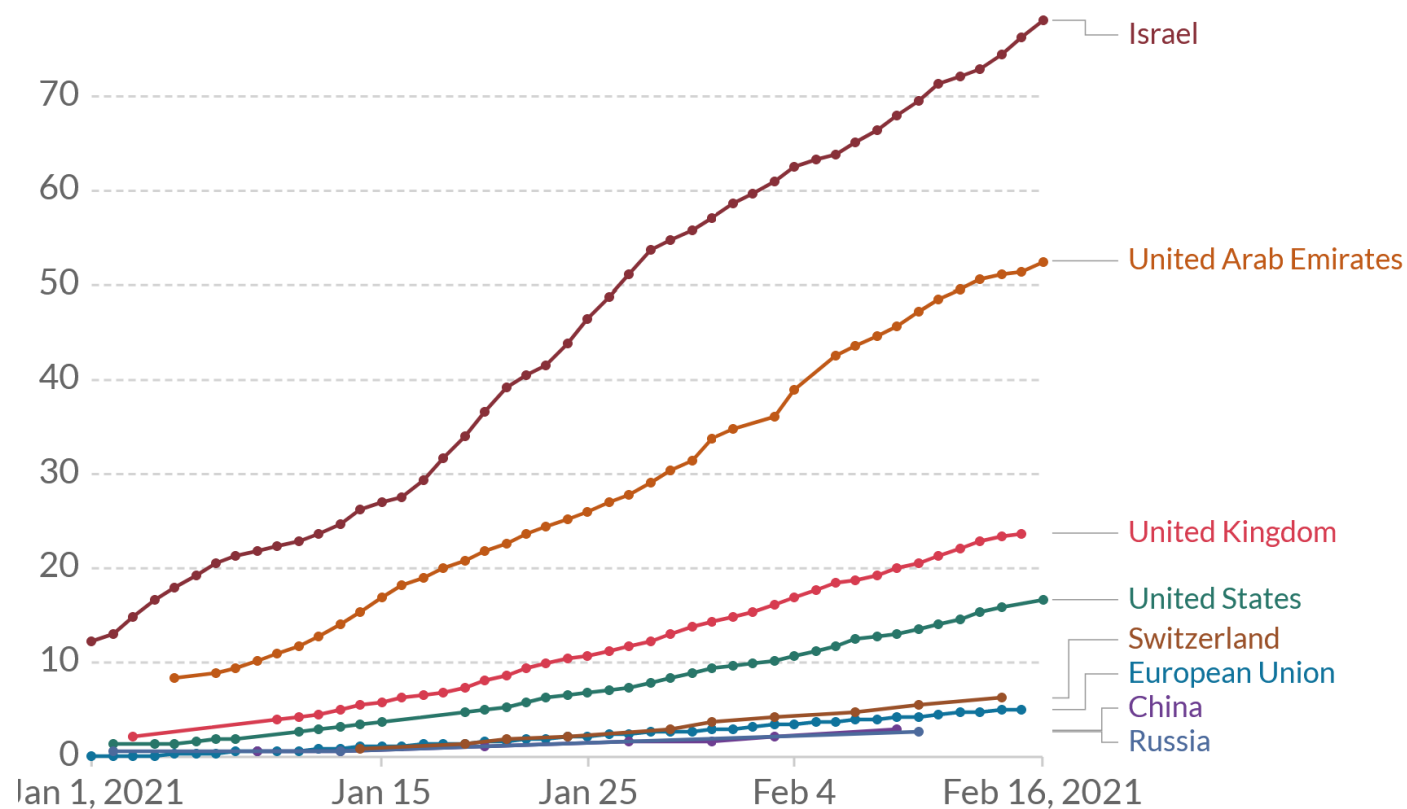
Vaccins, où en sommes-nous ?

Cumulative COVID-19 vaccination doses administered per 100 people

Our World
in Data

This is counted as a single dose, and may not equal the total number of people vaccinated, depending on the specific dose regime (e.g. people receive multiple doses).

LINEAR LOG

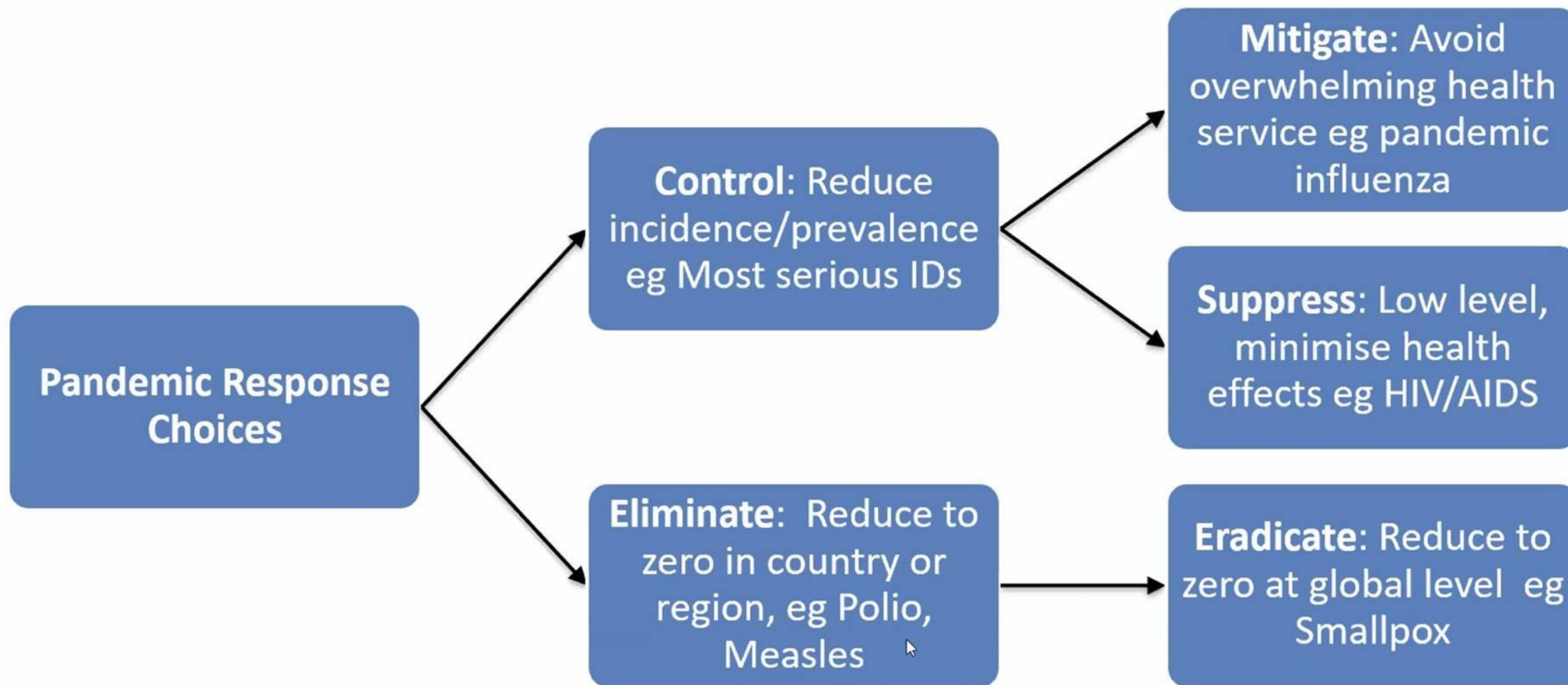


Source: Official data collated by Our World in Data – Last updated 17 February, 15:00 (London time)

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Quelles stratégies pour ce printemps ?

Strategic Choices for Pandemic Response



Source: Dowdle, MMWR Supple. December 1999 / 48 (SU01);23-7

1. Stratégie occidentale (réactive)

- **Trois scénarios**

1. Baisse de la pression du virus sur l'épidémie ($R < 1$)
 - Relâchement progressif des mesures
2. Poursuite d'un plateau ($R = 1$, nouvelles infections constantes)
 - Poursuite des mesures actuelles
3. Augmentation de l'incidence et $R > 1$ (croissance exponentielle)
 - En cas de saturation des lits de soins intensifs
 - Renforcement des mesures de confinement
 - En dernier recours
 - Fermeture des écoles

2. Stratégie Asie-Pacifique : proactive (= zéro Covid)

- **Zones vertes**

- Circulation du virus (< 1 cas/100K hab./jour)
- Déconfinement avec réouverture des bars, restaurants, écoles, spectacles, commerces non-essentiels, libre circulation intra zones vertes
- Réorganisation de la stratégie de Testing/Tracing/Isolating :
 - **Backward tracing**
 - **Hôtels de confinement**
- Usage (plus intrusif) des **traces digitales**
- Sécurisation des espaces clos (**ventilation**, capteurs CO2)
- **Cordons sanitaires**, reconfinements localisés
- Contrôle strict aux **frontières** des zones vertes
 - Coordination européenne

- **Zones rouges**

- Appelées à devenir vertes !



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Oui, mais ce sont des îles...

