

Centre universitaire de médecine générale et santé publique Lausanne

# Jeudi d'Unisanté Pandémie: premiers enseignements

Pr J. Cornuz / 19.11.2020

- Le corpus de connaissance s'étoffe
- Les enjeux du processus décisionnel se complexifient
- Un quizz
- Un hommage



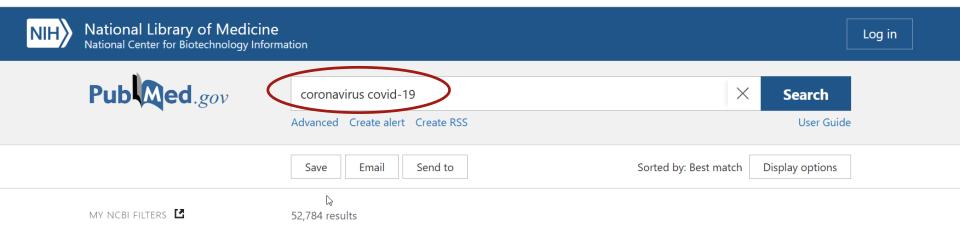
- Le corpus de connaissance s'étoffe
- Les enjeux du processus décisionnel se complexifient
- Un quizz
- Un hommage



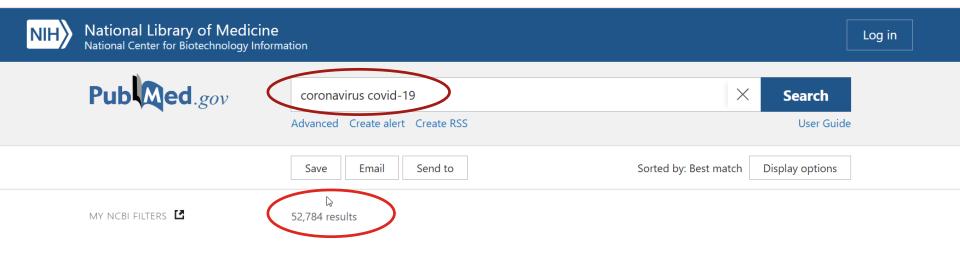
- A la fin de la 1<sup>e</sup> vague: corpus de connaissance fragile, beaucoup d'incertitudes
- Qu'en est-il en cours de la 2<sup>e</sup> vague?



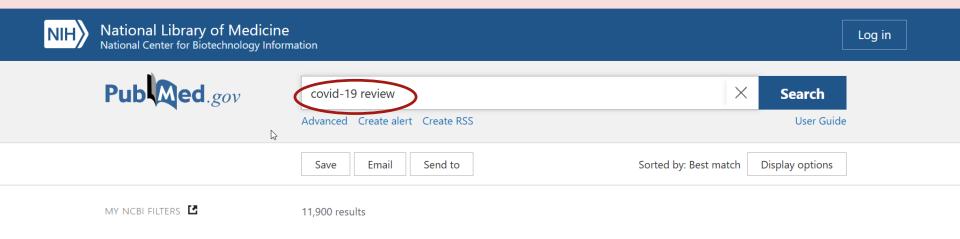
### Quid de Pubmed?



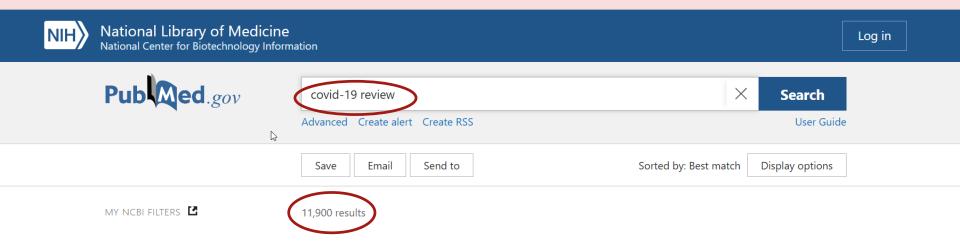




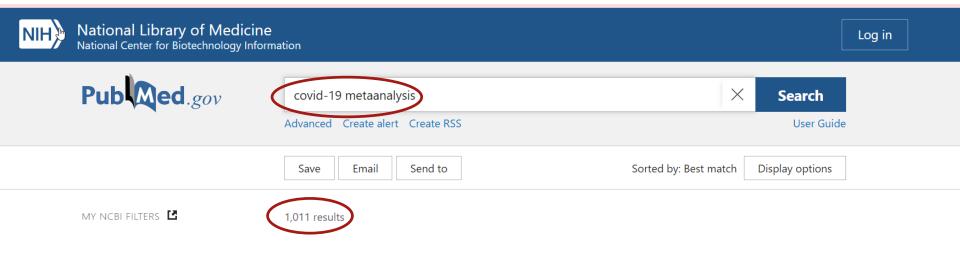














### Et Cochrane



Des données probantes. Des décisions éclairées. Une meilleure santé.

Search...

Q

A propos

Ressources

Nos formations

S'impliquer

Actualités

### Cochrane Covid-19 Actualités

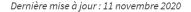
Cochrane fournit des données probantes issues de la recherche de haute qualité, pertinentes et actuelles afin d'éclairer la prise de décision en matière de santé. Cette page résume les diverses activités que Cochrane entreprend pour faire face à la pandémie de coronavirus (COVID-19).

Vous les trouverez ci-dessous par ordre chronologique. Une mise à jour sera effectuée régulièrement.

Pour plus d'informations, vous pouvez également consulter la page web de Cochrane

### Principales activités:

- 8 Special Collections
- 20 Nouvelles revues Cochrane ou leurs mise à jour
- Création du registre d'étude COVID-19







2

### 5 novembre

Une nouvelle revue systématique - Interventions so support the resilience and mental health of frontline health and social care professionals during and after a disease outbreak, epidemic or pandemic – a été publiée. Lisez la revue complète ici.

### 4 novembre

Publication d'une nouvelle collection spéciale Coronavirus (COVID-19)- Coronavirus (COVID-19): evidence relevant to clinical rehabilitation - Cette collection va être actualisée en permanence.

### 27 octobre

Un résumé visuel pour une Cochrane Rapid Review actualisée **Quarantine alone or in combination with other public health measures to control COVID-19** - a été publiée. Trouvez le **résumé** et la **vidéo** ou **la revue complète actualisée**.

### 13 octobre

Publication d'une revue Cochrane - Interventions to reduce contaminated aerosols produced during dental procedures for preventin infections diseases (Interventions visant à réduire les aérosols contaminés produits lors des procédures dentaires pour prévenir la transmission des maladies infectieuses)

### 12 octobre

Mise à jour de la revue systématique dynamique (Living Cochrane review) - Plasma de convalescents ou immunoglobuline hyperimmune pour les personnes attentes de la COVID-19.



### **Cochrane Database of Systematic Reviews**

# Plasma de convalescents ou immunoglobuline hyperimmune pour les personnes atteintes de COVID-19: une revue systématique dynamique

Cochrane Systematic Review - Intervention | Version published: 10 July 2020 | see what's new

https://doi.org/10.1002/14651858.CD013600.pub2 ☐

### Conclusions des auteurs

Nous ne savons pas très bien si le plasma de convalescents est bénéfique pour les personnes atteintes de la COVID-19 admises à l'hôpital.

Il y a 98 études en cours qui évaluent le plasma de convalescents et les immunoglobulines hyperimmunes, dont 50 sont des ECR.



### EDITORIAL

### Covid-19 mass testing programmes

Should be modelled on successful screening programmes

ass testing programmes for covid-19 should be drawing on the JK's considerable track record in delivering high quality screening programmes for communicable and noncommunicable disease.1-4 Testing of people with no signs or symptoms is different from testing that aims to reach a diagnosis when someone has sought help. In diagnostic testing, the clinician knows the person, gives explanation and advice, explains the limitations of tests, and obtains implicit or explicit consent. For tests performed outside this context-such as screening, surveillance, or case finding-these safeguards are missing and the pitfalls are numerous.

Mass testing for covid-19 aims to



A good test in a diagnostic setting can be less good when used for screening of people with positive test results genuinely have active infection, what proportion of people with negative results are genuinely free from active infection) are influenced by the revalence of active infection in the group being tested. most need testing will not be reached. Local primary care and public health teams must be involved in supporting participants, ensuring that test results are understood and can be acted on.

Data for the programme need careful analysis and presentation. For covid-19, this means separating diagnostic tests from screening tests, recording clearly the indications for testing (such as employment, contacts of known case, community versus institutional residence), and using area based denominators. If denominators are ignored, apparent spikes in cases caused by ascertainment bias could trigger unhelpful lockdowns.

Ethical standards require that participants be informed about the purpose, limitations, and uncertainties, whether testing is an

BMJ July,2020



### 10 MINUTE CONSULTATION

# Anosmia and loss of smell during the covid-19 pandemic



Abigail Walker, 1 Gillian Pottinger, 2 Andrew Scott, 3 Claire Hopkins 4

A 46 year old ophthalmologist presents with a two week history of loss of sense of smell and taste. He believes he may have been exposed to covid-19 but, at the time, did not meet the criteria for testing.

With the discovery of covid-19 and as the clinical syndromes associated with this virus have been defined, many areas of practice require updating. This article is a guide to assessment and management of patients with loss of smell based on review of the current literature and guidelines from the British Rhinology Society and ENT UK, the professional membership body representing ear, nose, and throat surgery in the UK.<sup>1</sup>







Department of Otolaryngology, University Hospital Lewisham, London, UK

<sup>&</sup>lt;sup>2</sup>Garforth Medical Centre, Leeds, UK

<sup>&</sup>lt;sup>3</sup>Patient author

<sup>\*</sup>Department of Otolaryngology, Guy's and St Thomas' NHS Foundation Trust Correspondence to: A Walker abiwalker@doctors.org.uk

- Le corpus de connaissance s'étoffe
- Les enjeux du processus décisionnel se complexifient
- Un quizz
- Un hommage



Suppression may seem the most economical approach. However, societal costs in the onger term need to be considered

Andrew Lee, reader in global public health. School of Health and Related Research, Sheffield University andrew.lee@sheffield.ac.uk

Independent SAGE, a group of scientists providing independent scientific advice on covid-19, has called on the government to work has been achieved in New Zealand.9 Vietnam. towards a "zero covid UK"1-in other words, the Brunei, and island states in the Caribbean. 10 elimination of covid-19.

Elimination is usually pursued for diseases that cause serious illness or death such as smallpox, polio, measles, and Ebola. The alternative approach is suppression, which attempts to reduce disease incidence to acceptable levels. This normally applies to low consequence infections, such as diarrhoeal diseases2-the risk of death is low, and the disease continues to circulate in the population can work, 11 but they come at a cost, at low levels.

It could be argued that pursuing elimination with intensive control measures, including societal lockdowns, is too costly. Indeed, in some major economies, gross domestic product (GDP) could fall by 20-25% because of control measures implemented so far in the pandemic.3 Against the backdrop of rising unemployment and economic recession, suppression may seem the most economical approach, However, this is a short term perspective. Societal costs in the longer term need to be considered.

#### Failure to eliminate

Take influenza, for example. The 1918 flu pandemic is estimated to have killed 40 million people worldwide and caused a 6% decline in GDP, similar in magnitude to the 2008-09 recession.4 Each year a billion people are infected with flu, and as many as 650 000 die from it.5 The costs of immunising, treating, and controlling flu are substantial.

The US alone spends over \$8bn (£6.03bn) a year in medical costs directly related to flu.6 Lost productivity and national economic growth cost tens of billions more. Extrapolate this worldwide over decades, and the total costs are staggering. Seasonal flu epidemics also contribute to many excess winter deaths. Failure to achieve elimination is a lose-lose solution, for both health and economic outcomes.

Furthermore, covid-19 is not a low consequence infection. It is more contagious than flu and has high fatality rates, especially among elderly people and those with comorbidities.7 Treatment can be costly.

especially if intensive care is needed. and survivors may have long term health consequences.4 A suppression approach means tolerating thousands of excess deaths each year, especially in vulnerable populations.

Is elimination possible? "Zero covid" status We know what works: consistent adherence to physical distancing, hygiene practices, and ubiquitous use of face coverings, as well as the early detection, testing, tracing, and isolation of cases-plus timely, targeted lockdowns to deal with local outbreaks. If and when a vaccine becomes available, mass immunisation programmes could help to boost population immunity. All of these measures taken together

With large epidemics occurring worldwide. some people may consider elimination futile. In a globalised world, infections travel across continents within days. Travel restrictions and border control measures may stem the spread of infections.12 Once the local disease incidence is low, health protection resources can be targeted at tackling imported cases. Indeed, over the years, health protection teams nationally have kept imported diseases such as typhoid fever, Ebola, and MERS-CoV at bay. Ultimately, global eradication is desirableeliminating covid-19 everywhere, permanently. But this is challenging, and it will require global leadership and coordination.13

#### Driving infections down

Even if elimination is not achieved, the measures taken will drive infection numbers down to levels that make it more easily contained. The risk of community spread then becomes low, and normality can be restored for schools, businesses, and social life. Moreover, elimination measures are similar to suppression measures except that they are applied with greater force and rigour. These measures may also have the co-benefit of reducing other infections.16

This pandemic could still get worse. We do not know yet whether its spread will be enhanced by other winter infections15 or whether mutations are increasing its infectiousness.16 Unless elimination is achieved, covid-19 will become endemic:17 recurrent outbreaks and seasonal epidemics will become the norm, with a grim toll in the human lives and wealth lost.



Pursuing this means permanently restricted borders, with relaxation contingent on an effective vaccine coming in less than 3-4 years

Simon Thomley, epidemiologist, University of Auckland, New Zealand s.thornley@auckland.

Arthur I Morris, clinical microbiologist, Auckland District Health Board, New Zealand Gerhard Sundborn, senior lecturer, University of Auckland

We would all like to eradicate covid-19 from the globe. However, closer scrutiny shows that the odds are heavily stacked against this as a sustainable, cost effective, long term strategy. New Zealand's apparent three month success has recently been broken by a cluster with no known link to overseas travel. Ongoing lockdowns have now occurred in Auckland, and the country is still focusing on elimination.

To consider the case of covid-19, and the notion of elimination itself, poses several questions. By prioritising elimination, do we believe that it is an important health issue, many times more deadly than other respiratory viruses? What is elimination, and how will we know that it's been achieved? Where does elimination lead? What are the long term consequences of pursuing it, and what are the costs versus the benefits?

First, how deadly is covid-19? Initially, the estimated infection fatality ratio was high when polymerase chain reaction tests were used to detect cases, and the denominator of this calculation was low. With the development of antibody assays it's now clear that infection spread is much wider, and fatality ratio estimates now range from 0.02% to 0.86%, with a median of 0.26%, 18 similar to that for seasonal flu.19

The ratio of deaths to the number of infections is also strongly age correlated: the age distribution of covid-19 deaths in New Zealand is similar to that from the same period in 201920 (Fisher test P=0.93). This indicates that SARS-CoV-2 is not dramatically shortening life when compared with background survival.

#### What is elimination?

For measles, the World Health Organization defines regional elimination as no community transmission for more than 36 months, in the presence of good surveillance.21 Genotyping evidence is also recommended to assess the interruption of endemic spread. After elimination

is thought to have been achieved, the molecular information from new cases should be compared to ensure that these are different genotypes. To date, the only globally eradicated human disease is smallpox, which took 30 years to achieve and was dependent on an effective vaccine.

Such a definition sets a very high bar. borne out by previous programmes. It also means that what New Zealand had achieved with no locally acquired cases in three months, although impressive, is far from the generally accepted definition of elimination. Pursuing this goal means permanently restricted borders, with relaxation contingent on an effective vaccine coming in less than 3-4 years as a best case scenario.

How realistic are such time frames? Byram Bridle, a Canadian immunologist charged with developing such a vaccine, has said that the fastest historical development of a vaccine was four years (Merck: mumps),22 while most take 10 years. However, vaccines for many viruses, such as HIV, may never arrive. And immuno-senescence in elderly people may blunt vaccine efficacy in this high risk age group.23

#### A heavy cost

With the virus now widespread globally and vaccines a distant possibility, a more sustainable strategy is for nations to learn to live with it. Heavily restricting borders indefinitely will severely damage economies and translate to unemployment, with strong relations to other illnesses and suicide.24

Seeking elimination comes with a heavy cost. The New Zealand government's estimates, translated to quality adjusted life years, indicate that the costs outweighed the benefits of extended lockdowns designed to eliminate the virus, by a factor of 96:1.25 A similar comparison in the UK estimated the costs of lockdown outweighing the benefits by 10:1.26

Instead, we must protect our elderly people and should closely monitor-and increase if needed-the capacity of our hospitals and public health services. Chasing an unrealistic goal comes with an unacceptably high price to our country that will take decades to repay. Cite this as: BM/ 2020; 370:m3410

BMJ 12.9.2020





### yes

The usual "essential" of full data transparency before prescription should become a "nice to have" in this urgent, fraught emergency

Raymond M Johnson, associate professor of medicine (infectious diseases), Yale School of Medicine, New Haven, Connecticut Raymond Johnson@yale.edu

In normal circumstances, insisting on full data transparency and limiting decision making to published data alone is rightly paramount. But a pandemic is far from normal, and to insist on normal practice adds delay to interventions that could cost lives. A pandemic gives us little choice other than unpublished manuscripts (preprints) to guide therapeutic decision making. They should be used, thoughtfully.

Of course, physicians would prefer to prescribe treatments and vaccines that have been thoroughly tested and scrutinised in peer reviewed, randomly controlled trials with full data transparency. But this first Jaways possible, when we dort know how much data collection is enough and we lack the understanding of a disease to know how to interpret the findings. The usual "essential" of full data transparency before prescription should become a "nice to have" or an "as much as possible" in the urgent, fraught emergency circumstances we find ourselves in.

#### Preprint data and adaptive trials

Beyond surge capacity, our medical systems need prepositioned, randomised, adaptive cascading trials to evaluate treatments. Quality preprints can identify therapeutics, or inform study arms, during adaptive clinical trials. This applies especially to repurposed or off-label drug use where prescribing them on the basis of unpublished data has a lower threshold than adopting newer treatments or vaccines, because the treatment and its effects and side effects are to some extent known, and the infected patients are acutely and specifically at risk for harm.

Hypothetically, back in March, the first iteration of a covid-19 randomised trial could have included standard of care versus hydroxychloroquine (HQ)2 versus lopinavir/ ritonavir,3 on the basis of published SARS-CoV-2 in vitro and MERS case-control data. In April, when a 150 subject randomised control trial preprint was released showing no HQ virologic or clinical benefit,4 hypothetical investigators could have closed the hydroxychloroguine arm and substituted steroids based on experience in China.5 When lopinavir/ritonavir was subsequently found ineffective,6 the lopinavir/ritonavir arm could have closed and an alternative arm opened, such as convalescent plasma.

Unlike conventional clinical trials, adaptive cascading trials are not intended to answer a prespecified question to garner approval an publication; they are intended to rapidly of timise medical treatment during a pandemic.

Adaptive clinical trials are not a new ic a, ' but, formulated through existing health bure acracies reliant on publication and peer review, they are likely ineffective. Public health agencies are the antithesis of nimble and adaptable.

Academic medical centres can contri ute to pandemic responses by scrutinising pri any published data and preprints to design and perform adaptive clinical trials. Therape utics can evolve during pandemics, or we can use what we have and hope to do better next time.

#### **RECOVERY trial**

We have one real life example already. The RECOVERY tall is an adaptive clinical trial rost argues for using unpublished data to shape medical practice during a pandemic. The trial structure incorporates several critical features for research in such a situation. Pirst, it identified a limited number of treatment arms to allow definitive comparisons between them. Second, it intentionally focused on clinical outcomes, rather than mechanistic investigations, to reach clinical efficacy endpoints. An independent data to identify benefit and harm early, to "adapt" the trial as it moves forward.

RECOVERY was designed to close and add treatment arms over time. Unpublished data were released as a press release (though this is not without its problems), and then as a preprint, 11 showing a mortality benefit for steroid treatment in covid-19 patients developing hypoxemia.

Because RECOVERY is a high quality trial its unpublished data should be guiding decisions now. Because pandemics are temporally and geographically dynamic, limiting decision making to full published data adds a delay that adversely affects the design of adaptive trials and, potentially, pandemic outcomes.

The critical part in using unpublished data is content review and ensuring as much as possible that preprint data contain key information—the protocol, summary data tables, and the statistical analysis used, Jualified parties should review preprints, pharmacodynamics, and toxicities to assess biologic plausibility and risk before incorporating therapeutics into adaptive trials or practice. Thus, unpublished results can deliver crucial interventions without sacrificing integrity.

Should
With knowledge of the new coronavirus less than a year old, treatment

remains fraught with

uncertainty. Preprint

trials are imperfect

but can guide active

death situations, says

But Peter Doshi and

that without complete

transparency, products

should not be endorsed

as being based on science

David Healy argue

Raymond M Johnson.

data and adaptive clinical

decision making in life-or

doctors recommend covid-19 treatments and vaccines when full data are not publicly available? Peter Doshi, associate profe of Pharmaceutical Health Se

This is about a chain of trust that stems from knowing that judgments have been scrutinised and challenged

Peter Doshi, associate professor, Department of Pharmaceutical Health Services Research, University of Maryland School of Pharmacy, Baltimore, Maryland Godol of Pharmacy, Baltimore, Maryland pdoshi@nz.umaryland.edu David Healy, professor, Department of Familly Medicine, McMaster University, Hamilton, Ontario

The trust we place in licensed medicines is a strong reason for insisting on full data transparency and reporting, even in a pandemic. Few would disagree with the importance of transparency, but even during normal times it remains a challenge—so, why demand it during a pandemic? The reason that data transparency bulks the foundation for information we can trust. Data secrecy, by contrast, create risks too large to contrast, reaser sisks too large to contrast, reaser sisks too large to contrast, reaser sisks too large to sisks too large to sisk to

The first citical risk is that of an exaggerated estimate of a product's benefits when relying on scientific publications alone, not the underlying data. When the underlying data. When the underlying dista. When the underlying distance when the proports for oseltamivir were finally made public they revealed that the data collection on lower respiratory tract complications relied on patients' self-reporting, which makes sense for some outcome measures, such as pain, but not pneumonia. The result was a complete loss of confidence in the quality of data collected for the key performance assumption underrolning elobal stockolling. 3.

The second critical risk is underestimating a product's side effects. A year after novel vaccines were manufactured and rolled out on expedited timelines to tackle the threat of 1009 H1N1 swine flu, post-marketing reports of narcolepsy emerged in some Pandemits vaccine recipients. But it would take a further seven years—and a lawsuit—to unearth internal pharmacovigilance reports by the manufacture, which had suggested that problems with the vaccine's safety had been produced in real time during the pandemic. <sup>13</sup>

Copious evidence already shows that adverse event data collected in trials are under-reported in journal publications. § Moreover, serious adverse events may disappear it classified under rubrics such as "intercurrent litness" or "new medical histories," which do not require serious adverse event reports—as has happened in vaccine and treatment trials. § 339

Only publicly available full datasets will allow for a thorough assessment of side effects. But the benefits of transparency go beyond a truer understanding of product safety and efficacy: earning public trust, for a start. Jobbing doctors and patients alike reasonably expect any licensed covid-19 treatment or vaccine to work as arkvertised. This is about a châni of trust only open data can allow other researchers with the ability to analyse it do do so, generating the trust that stems from knowing that judgments have been scrutinised and challenged.

Data transparency also creates the optimal environment for products—there will be many covid-19 products, to be sure—to compete on the strength of their evidence base, not on the strength of promotion and buzz.

#### No legitimate barriers

Finally, it must be recognised that there are no legitimate burniers to data transparency during the covid-19 pandemic. Companies can have little bases for claiming commercial confidentiality, as most products with any prospect of market entry have already been guaranteed massive profits through advance government purchases. There should also be no concern about patient privary, guarantees to patients and trial participants regarding the privacy of their data should be honered, and such patient level data can and should be duly de identified.

Nor should data release cost us valuable time. While it does take time to prepare data for sharing, the core work involves de-identification, and the trial specific methods can be determined in advance while trials are ongoing, for easy release when data collection is complete.

Before any treatment or vaccine is made widely available, study protocols should be in the public domain, along with statistical analysis plans, clinical study reports, patient level data, and copies of the correspondence with resultators and other key stakeholders.

Data transparency's not a "nice to have." Calairs made without access to the data—whether appearing in peer reviewed publications or in peepints without peer review—are not scientific claims. Products can be marketed without access to the data, but doctors and professional societies should publicly state that, without complete data transparency, they will refuse to endorse covid-19 products as being based on science. Clethes as MB 2026/270:m2369

148

19 September 2020 | the basj

Lot: EW2005A1-A Expiry Date: 06/2024 90284604 GILEAD

the bud | 19 September 2020

GILEAD

unisantė

BMJ 19.9.2020

- Les étapes sont brûlées!
- Etudes d'Unisanté: communiqué de presse avant publication!
  - Epicovid: 7% de vaudois-ses avec sérologie +
  - Radico tests rapides: sensibilité de 85% à 95%
  - Delphi: consensus entre experts
- Incertitude: Importance de la recherche du consensus



### Trouver le consensus

- Importance de démarche
- Méthodes
  - Conférence de consensus
  - Méthode Delphi
- Mais il y a…
  - …la médiatisation des voix divergentes



# Covid-19 : du rejet des masques à la remise en cause de la deuxième vague, comment le discours des médecins « rassuristes » a émergé

Portées par les médias et par les réseaux sociaux, de nouvelles figures scientifiques plus ou moins légitimes ont émergé en tenant un discours à rebours de celui des autorités sanitaires.



De gauche à droite : Christian Perronne, Laurent Toubiana, Eve Engerer et Jean-François Toussaint.

Le Monde, 12.10.2020



### Et les complotistes!





Comment favoriser l'adhésion des citoyen-nes?



# Exemple de «réussite»

- Souvenez-vous:
- « Jamais les fumeurs n'accepteront de ne pas fumer dans les restos et les bars! Et je ne vous parle pas des jeunes dans leurs discos : cela ne marchera jamais! ».
- Et pourtant cela a marché!
- Pourquoi?
- Consensus entre experts!
- Implication des acteurs



### Coronavirus: patient and public involvement

Absent in the early stages of the pandemic, it must now move centre stage

he covid-19 pandemic saw statutory policy commitments to patient and public involvement and shared decision making in health systems abandoned, the "nothing about us without us" mantra left hanging in the breeze.

Decisions had to be made fast, but policy makers' choice of expert advisers excluded those with expertise rooted in lived experience patients, families, and frontline health and social care professionals. This was regrettable.

Patient and civil society advocacy groups may have lacked seats on expert committees but took the lead in providing information, advice, and support for their communities. 

They have lobbied for a voice in policy making, 

for a focus on inequalities, 
and for policies to take account of the reality of people's lives. 
They have also accumulated a wealth



Experienced advocates should be appointed to advance shared decision making at strategic levels networks are primed to inform joint learning from the pandemic and help shape post-covid services and research agendas. <sup>12-14</sup> New collaborations are under way, <sup>15-16</sup> but more are needed. Regrettably, the explosion of research into covid-19 has been associated with a drop in public and patient involvement, <sup>17</sup> but a joint initiative to agree core outcomes has been launched (www. covid-19-cos.org/).

successful existing models (www. parkinsonnet.com/).20

### Mutual respect

Mutual understanding and respect is essential in any partnership, and patient leadership must be taken seriously by both health professionals and patients. Experienced advocates should be appointed to advance shared decision making at strategic levels in the health sector. More and better training programmes in patient leadership are required for managers, clinicians, 21 patients, and carers,22 along with wider uptake up of joint care models in which patients and carers are integrated into multidisciplinary teams in both primary and secondary care.2324

Collectively, these steps will help change healthcare culture and counter what Montori describes as a "corruption in the mission" of health systems.<sup>25</sup>



- Importance d'une stratégie de communication
- Task Force nationale:
  - Quelle place aux citoyen-nes?
  - quelle importance accordée à l'expertise en communication?







News Mandat Organisation Thèmes & Groupe d'experts



Les dix groupes d'experts présentés ci-après se concentrent sur les questions les plus critiques et urgentes du moment. De nouveaux groupes d'experts pourront être créés en fonction des besoins qui se présenteront.

- > Groupe d'experts Soins cliniques
- > Groupe d'experts Données et modélisations
- > Groupe d'experts Diagnostics et tests
- > Groupe d'experts Épidémiologie numérique
- > Groupes d'experts Économie
- > Groupe d'experts Éthique, droit et social
- > Groupe d'experts Plateforme d'échanges
- > Groupe d'experts Immunologie
- > Groupe d'experts Prévention et contrôle des infections
- > Groupe d'experts Santé publique



- Le corpus de connaissance s'étoffe
- Les enjeux du processus décisionnel se complexifient
- Un quizz
- Un hommage



# Que représente cette carte des USA?





### Et celle-ci?





# Biden - démocrates vs Trump - républicains





# Covod-19: taux d'hospitalisations «records» (25)





- Le corpus de connaissance s'étoffe
- Les enjeux du processus décisionnel se complexifient
- Un quizz
- Un hommage







BMJ 12.9.2020





## THE BIG PICTURE

### Remembering the UK doctors who have died from covid-19









backgrounds, including many migrant workers on whom the NHS depends.

Fiona Godlee, The BMI's editor in chief, said, "The web page honours doctors who have lost their lives working for the good of others under the most difficult of circumstances in this covid-19 pandemic, Each name represents an irreplaceable gap in a family and a workplace.

"No one should have to risk their lives or health because of their work. and we honour those who have paid this ultimate sacrifice. In doing so we commit to all efforts that will bring this pandemic to an end and that will ensure the safety and wellbeing of everyone working on the front line of healthcare.'

Chaand Nagpaul, chair of the BMA council, said, "The death of a fellow doctor is always tragic, but to lose so many at the hands of the virus is devastating.

"We offer our profound sorrow and heartfelt condolences to the families, friends, and colleagues of these committed clinicians who cared Mohamed Sami Mahmood Shousha for patients in the most challenging of times, battling against this highly infectious and deadly virus.

"They are the GPs and hospital doctors who treat us when we are sick, and they are our friends and colleagues, who dedicated their lives to the pursuit of helping people get better. "We owe them our gratitude, our

respect, and a pledge that we will remember them." uliet Dobson, editor, bmi.com





345







Centre universitaire de médecine générale et santé publique Lausanne

## Merci de votre attention