

Fake News in the Time of COVID-19
Prof. Didier Pittet and Alexandra Peters, University of Geneva Hospitals, Switzerland
A Webber Training Teleclass



Webber Training
20TH Anniversary

FAKE NEWS in the time of COVID-19

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Director, Infection Control Programme
Lead Adviser, World Health Organization,
WHO Save Lives: Clean Your Hands
Chair, Clean Hospitals

Alexandra Peters
Lead, research and educational program
development for Clean Hospitals,
Infection Control Programme
University of Geneva Hospitals, Switzerland

Hosted by Paul Webber
paul@webbertraining.com

www.webbertraining.com January 14, 2021

Outline

- Background in fake news and misinformation
- Case study: Measles
- The democratization of misinformation and scientific publishing
- How can we make sense of all this?
- Approaches to addressing misinformation
- The SARS CoV-2 vaccine

2

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3

Getting the terms right

Bad buzz: misrepresentation of the nature or conclusions
in otherwise sound information or studies

Misinformation: possibly accidental

Disinformation: aims to deceive

Fake News: deliberate misinformation or manipulation
of data

4

Fake News spreads faster than real news, and definitely motivates people to act or engage!



An infodemic

Home / The American Journal of Tropical Medicine and Hygiene / Volume 103, Issue 4 / Article

ISSN: 0002-9637
E-ISSN: 1476-1645

COVID-19-Related Infodemic and Its Impact on Public Health: A Global Social Media Analysis

Md Saiful Islam^{1,2}, Tonmoy Sarkar¹, Sazzad Hossain Khan¹, Abu-Hena Mostofa Kamal³, S. M. Murshid Hasan⁴, Alamgir Kabir^{2,5}, Dalia Yeasmin¹, Mohammad Ariful Islam¹, Kamal Ibne Amin Chowdhury¹, Kazi Selim Anwar⁶, Abrar Ahmad Chughtai², Holly Seale²

View Affiliations

Publisher: The American Society of Tropical Medicine and Hygiene²

Source: The American Journal of Tropical Medicine and Hygiene, Volume 103, Issue 4, 7 Oct 2020, p. 1621 - 1629

DOI: <https://doi.org/10.4269/ajtmh.20-0812>

« Previous Article | Table of Contents | Next Article »

Abstract Full-Text Figures & Tables References (56) Cited By (2) Supplements Metrics Related Content

INTRODUCTION

The term infodemic, defined as “an overabundance of information—some accurate and some not—that makes it hard for people to find trustworthy sources and reliable guidance when they need it,” was coined to categorize some of the common features of rumors, stigma, and conspiracy theories during public health emergencies.¹ During the Ebola outbreak in the Democratic Republic of Congo in 2019, misinformation was linked to violence, mistrust, social disturbances, and targeted attacks on healthcare providers.² During the SARS outbreak in China in 2002–2003, fear and anxiety about contracting the disease caused social stigma against Asian people.³ Stigmatized persons may delay seeking medical care, potentially remaining undetected, but contributing to the expansion of the epidemic via community transmission.^{4,5} The UN secretary-general identified COVID-19-related rumors as a global enemy.⁶ Globally, there have been reports of rumors, stigma, and

<http://www.ajtmh.org/content/journals/10.4269/ajtmh.20-0812;jsessionid=ETrfB53Hw7IHnlp2Bb5u4i.ip-10-241-1-122>

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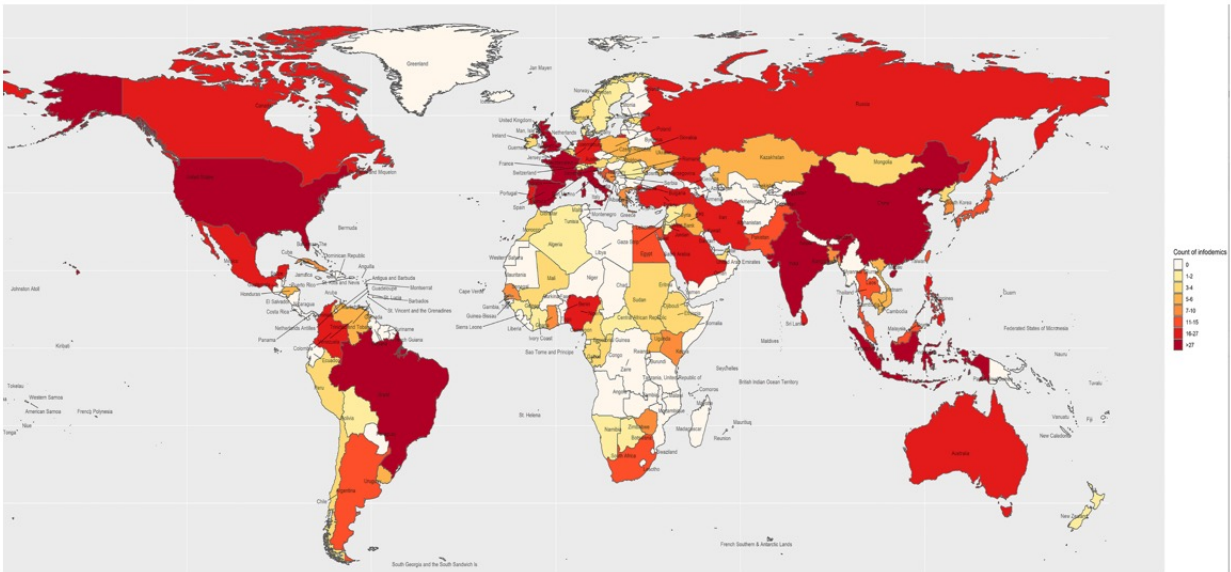


Tools

- ♥ Add to my favourites
- 🔔 Create Publication Alert
- 🔔 Create Citation Alert
- 🔔 Create Correction Alert
- 📄 Export citation ▾
- 📚 Recommend to library
- 🔗 Reprints & Permissions

Access Key

Infodemic map (as of October):

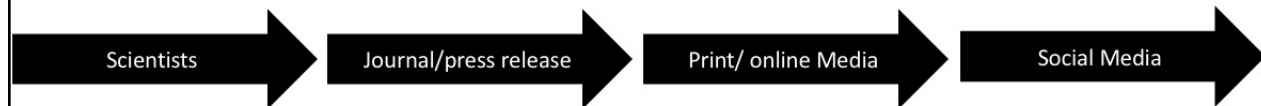


<http://www.ajtmh.org/content/journals/10.4269/ajtmh.20-0812;jsessionid=-ETrfB53Hw7IIHnlp2BbSu4i.ip-10-241-1-122>

7

How did we get here?

Misinformation can take place at various levels:



- Misleading statements
- Ecological fallacy
- Inferences without sufficient evidence
- Abstract misleading compared to paper
- Sensationalist / alarmist titles
- Echo chambers




8

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Diagram illustrating the flow of information from Scientists to Social Media:

Scientists → Journal/press release → Print/ online Media → Social Media

- Misleading statements
- Ecological fallacy
- Inferences without sufficient evidence
- Good way of analyzing if hypotheses are supported is Koch / Bradford Hill Postualtes




9

Diagram illustrating the flow of information from Scientists to Social Media:

Scientists → Journal/press release → Print/ online Media → Social Media

- Abstract misleading compared to paper
- Sensationalist titles
- Misleading soundbites from scientist commentary



10


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- Lay press
- Specialized medical news sites
- Often sensationalized



11



- In interest groups
- Trending on Facebook or twitter
- Often a substrate for misinformation to spread rapidly

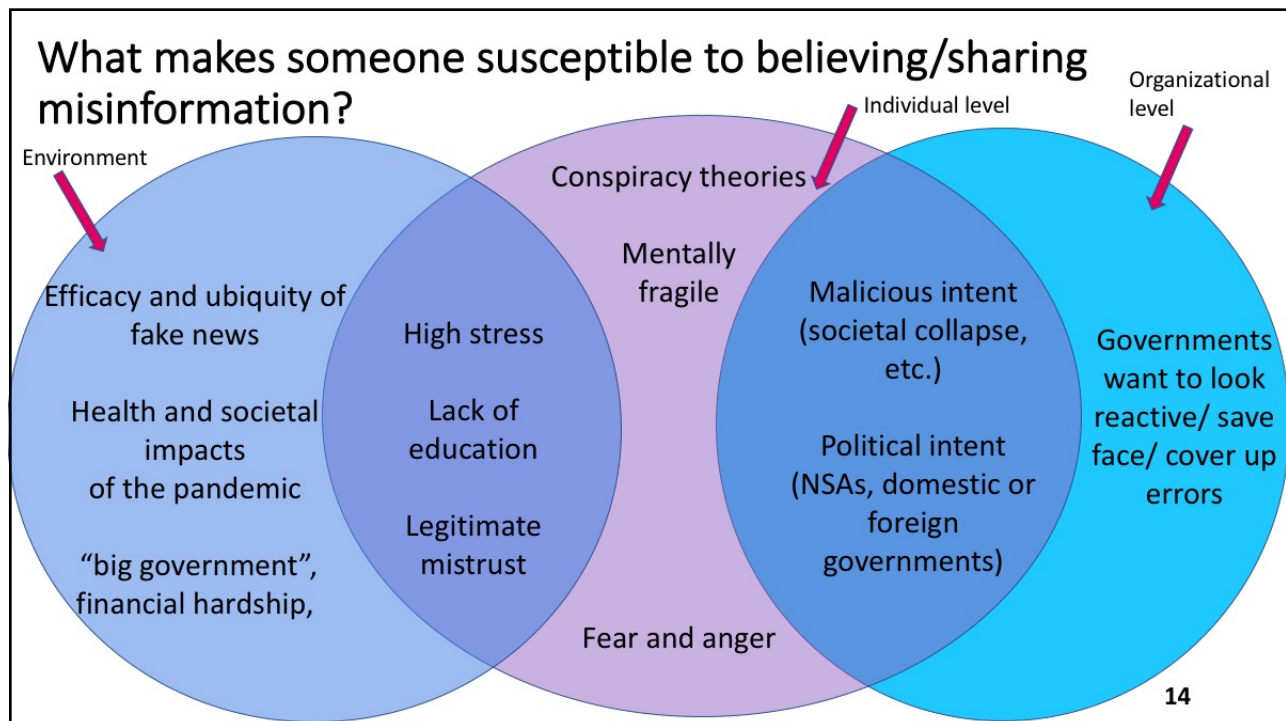


12

Where does Misinformation come from?

Infodemic + **Competing agendas of interest groups** + **Fear**
= Misinformation & Fake News

13



14

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15

The most famous case study in infection prevention: Measles and ecological fallacy



16

The emergence of hesitancy

1998: Wakefield et al. published in *The Lancet* about a possible link between MMR vaccine and autism

Retracted in 2010

Reasons for retraction:

- uncontrolled study design
- small sample size
- speculation in the conclusions
- blatant conflicts of interest
- allegations of misconduct & ethical violations



Effects:

- Lack of “buy-in”
- Anti vaxx movement
(Dr. Wakefield is a vocal supporter)
- Social media as a source of public health misinformation



Study of anti-vaccine sites in google search across different languages:
12-24% of websites were anti-vaxx depending on the region*

*Arif. Et al. Fake News or Weak Science? Visibility and Characterization of Antivaccine Webpages Returned by Google in Different Languages and Countries. *Front Immunol.* 2018

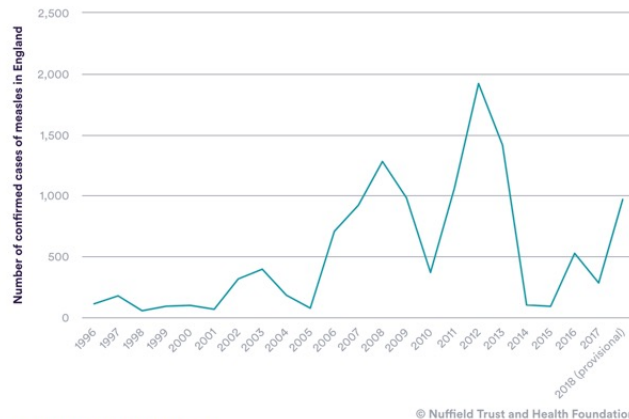
In the UK...

- MMR vaccine coverage dropped from 91% in 1998 to 80% in 2003
- It has gone back up since, thankfully, but remains stagnant at around 90%

How has the number of confirmed cases of measles in England changed over time?

26/02/2020

Chart - QualityWatch



© Nuffield Trust and Health Foundation

- <https://www.nuffieldtrust.org.uk/resource/vaccination-coverage-for-children-and-youth>
- Flaherty, D. K. The Vaccine-Autism Connection: A Public Health Crisis Caused by Unethical Medical Practices and Fraudulent Science, OECD Data Available at: <http://data.oecd.org/pop/population.htm>.

19

...and around the world

- Extremely low vaccination rates in certain areas
 - affluent California schools up to 70% of students exempt for non-medical reasons
 - Worse vaccination rate than South Sudan
- 2014: measles in the US spiked with 23 outbreaks and 667 cases
- 2016: 25% of French parents surveyed had an unfavorable perception of the measles vaccine risk–benefit balance
- In 2017, a study showed that healthcare professionals in Italy had even become the vector of transmission in the recent measles resurgence

20

Scare Tactics

Context

Correlation/causation

Risk without context

.... A culture of fear and misinformation

Vaccine Ingredients

- Formaldehyde
- Aluminum
- Thimerosal (influenza vaccines)
- Polysorbate 80
- Monosodium Glutamate
- Antibiotics: streptomycin, neomycin, gentamicin, polymyxin B
- Allergens: soy, gelatin, egg, yeast
- Human diploid cells or residual proteins from aborted fetal tissue
- Animal by products: chick embryonic fluid, fetal bovine serum, guinea pig embryo cells, monkey kidney cells

2010

Do you know what's in a vaccine?

Aluminum
Implicated as a cause of brain damage; suspected factor in ALZHEIMER'S DISEASE, dementia, seizures and comas. Allergic can occur on the skin.¹

Ammonium Sulfate [salt]
Suspected gastrointestinal, liver, nerve and respiratory system POISON.

Beta-Propiolactone
Known to cause CANCER. Suspected gastrointestinal, liver, nerve and respiratory, skin and sense organ POISON.

Gelatin
Produced from selected pieces of calf and cattle skins, de-mineralized cattle bones and pork skin. ALLERGIC reactions have been reported.¹

Gentamicin Sulfate and Polymyxin B [antibiotics]
ALLERGIC reactions can range from mild to life threatening.¹

Genetically Modified Yeast, Animal, Bacterial and Viral DNA
Can be incorporated into the recipient's DNA and cause unknown GENETIC MUTATIONS.

Glutaraldehyde
Poisonous if ingested. Causes BIRTH DEFECTS in experimental animals.

Formaldehyde [formalin]
Major constituent of embalming fluid; poisonous if ingested. Probable carcinogen; suspected gastrointestinal, liver, respiratory, immune, nerve and reproductive system POISON.

Human and Animal Cells
Human cells from aborted FETAL TISSUE and human albumin. Pig blood, horse blood, rabbit brain, guinea pig, dog kidney, cow heart, monkey kidney, chick embryo, chicken egg, duck egg, calf serum, sheep blood and others.

Latex Rubber
Can cause life-threatening allergic reaction

Mercury [thimerosal]
One of the most poisonous substances known. Has an affinity for the brain, gut, liver, bone marrow and kidneys. Minute amounts can cause nerve damage. Symptoms of mercury toxicity are similar to those of AUTISM.

Micro-Organisms
Dead and alive VIRI AND BACTERIA or their toxins. The polio vaccine was contaminated with a monkey virus, now turning up in human bone, lung-lining (mesothelioma), brain tumors and lymphomas

Monosodium Glutamate [MSG | glutamate | glutamate acid]
A NEUROTOXIN that's being studied for mutagenic, teratogenic (development and neurostrosities) and reproductive effects. Allergic reactions can range from mild to severe.¹

Neomycin Sulfate [antibiotic]
Interferes with vitamin B6 absorption. A error in the uptake of B6 can cause a form of epilepsy and mental retardation. ALLERGIC REACTIONS can range from mild to life threatening.¹

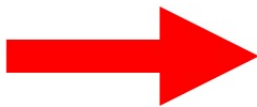
Phenol | Phenoxyethanol [2-P]
Used as an antiseptic. TOXIC to all cells capable of disabling the immune system primary response mechanism.

Polysorbate 80
Know to cause CANCER in animals.

Tri (n) Butylphosphate
Suspected kidney and nerve POISON.

¹ When babies 21 hours or days old it, impossible to know if they have an allergy

Lack of personal experience in the developed world



No context- very limited experience with communicable disease

Polio



Tetanus



Mumps




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Where is he now?

Vocal anti vaxx advocate
(often at Trump rallies)

20 years later, the paper is cited over 2800 times, including 1090 times since 2012

The Wakefield article was published and circulated in the media; people around the developed world began to increasingly fear vaccines



We will come back to the issue of vaccines...

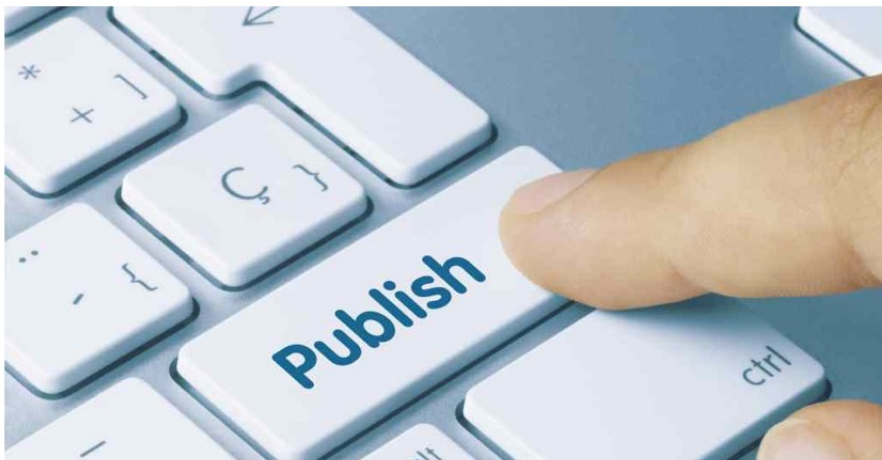


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25

Understanding the context for why this can happen in the first place



26

The Traditional Model of Publishing



27

Scientific Publishing is Big Business



- Recently, three publishers account for more than 47% of all papers published
- 2010: Elsevier's scientific publishing arm made hundreds of millions of dollars of profit with higher margins than Google or Apple



Reed-Elsevier 24.1%, Springer 11.9%, and Wiley-Blackwell 11.3% (2013)

28

Open platforms and non-peer reviewed literature

- Scientific articles and science are presented to the outside world
- Many of the increasing number of open-access platforms allow for the publication of “academic” articles without any peer review
- Part of a normal process of democratization of information in the internet age



Issues concerning traditional journals

- Access to information is difficult and expensive
 - Especially in the developing world
 - For anyone without institutional affiliation
- World Bank has also been working on this:
<https://www.theguardian.com/global-development/2012/sep/03/developing-world-open-access-research-hurdles>
- Scientists review for free, and paying for their time falls on other institutions
 - Leads to conflicts of interest in journals themselves

30

Issues concerning open access journals

- Still expensive for some
- Motivation of journals to publish as many authors as possible
- Rise of predatory journals (over 1100 counted)
- Issues with lack of peer review and bad quality



31

thebmj Research ▾ Education ▾ News & Views ▾ Campaigns ▾ Archive For authors

Research

The association between exaggeration in health related science news and academic press releases: retrospective observational study

BMJ 2014 ; 349 doi: <https://doi.org/10.1136/bmj.g7015> (Published 10 December 2014)
Cite this as: BMJ 2014;349:g7015

Article Related content Metrics Responses Peer review

This article has a correction. Please see:
[Errata - December 12, 2014](#)

Petroc Sumner, professor^{1,2}, Solvejga Vivian-Griffiths, research assistant^{1,2}, Jacky Boivin, professor², Andy Williams, lecturer³, Christos A Venetis, senior lecturer⁴, Aimée Davies, research assistant², Jack Ogden, research assistant², Leanne Whelan, research assistant², Bethan Hughes, research assistant², Bethan Dalton, research assistant², Fred Boy, senior lecturer⁵, Christopher D Chambers, professor^{1,2}

Author affiliations ▾

Correspondence to: P Sumner or C D Chambers sumnerp@cardiff.ac.uk or chambersc1@cardiff.ac.uk

Accepted 5 November 2014

<https://www.bmj.com/content/349/bmj.g7015>

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32

Outline of the presentation

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33

Categories of the most common COVID- related fake news according to WHO (there are many more)

5G Mobile networks, Alcohol, Antibiotics, Bleach, Cold weather (snow), Dexamethasone, Drugs, Garlic, Hand dryers, Holding your breath, Hot and humid climates, Hot baths, Hot peppers, Houseflies, Hydroxychloroquine, CO2 intoxication (masks), Exercise (masks), Medicines, Methanol and ethanol, Misinformation, Mosquitoes, Older people and younger people, Pneumonia vaccines, Recovery, Reduce risk of infection, Saline, Shoes, Sunny and hot weather, Supplements, Swimming, Thermal scanners, Ultra-violet (UV) lamps, Viruses, bacteria, antibiotics

[who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public/myth-busters](https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public/myth-busters)

34

How can we organize this into types of misinformation?

One way is by actor:

- Individuals
- Private entities / non- governmental organizations
- Governments (acting domestically)
- Governments (acting internationally)
- Supranational actors

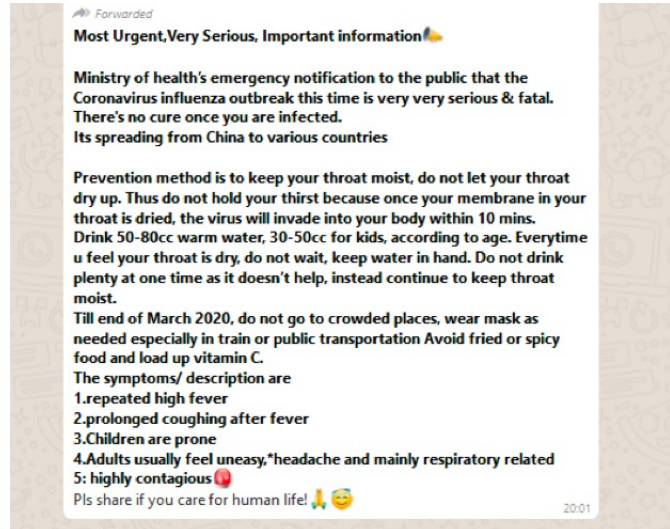
35

Misinformation
in practice:
Individuals



36

Cell/social media message chains



<https://www.aljazeera.com/news/2020/03/misinformation-fake-news-spark-india-coronavirus-fears-200309051731540.html>

37

Misinformation
in practice:
private entities
and social
media



38

The role of social media



39

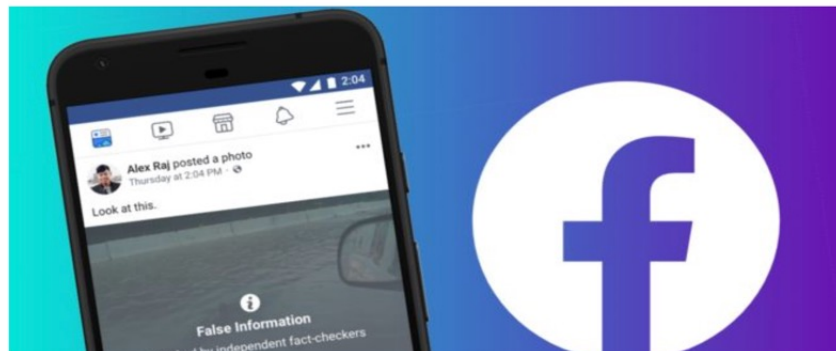
Coronavirus: Facebook alters virus action after damning misinformation report

By Joe Tidy
Cyber-security reporter

16 April 2020

f Share

Coronavirus pandemic



<https://www.bbc.com/news/technology-52309094>

40

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Avaaz researchers analysed a sample of more than 100 pieces of Facebook coronavirus misinformation on the website's English, Spanish, Portuguese, Arabic, Italian and French versions.

The research found that:

- It can take the company up to 22 days to issue warning labels for coronavirus misinformation, with delays even when Facebook partners had flagged the harmful content for the platform.
- 29% of false content in the sample was not labelled at all on the English language version of the website
- It is worse in some other languages, with 68% of Italian-language content, 70% of Spanish-language content, and 50% of Portuguese-language content not labelled as false
- Facebook's Arabic language efforts are more successful, with only 22% of the sample of misleading posts remaining unlabelled.

<https://www.bbc.com/news/technology-52309094>

41

Misinformation in practice: Governments

***Unclear communication to
the population leads to
misinformation !***

- **Confinement**
(why, who, when)
- **Masks**
- **Essential businesses
and schools**

Whole-of-America COVID-19 Response
Locally executed, state managed and federally supported effort to meet the demand for critical supplies

Preservation of medical supplies

Routing PPE, Retooling Ventilators

Healthcare and first responders implement changes to reduce PPE usage, ways to safely decontaminate and use PPE, and use of reusable PPE.

Allocation of supplies to ensure they get to the right place at the right time

Local facilities report gaps to states, who work with federal government to address capacity shortfalls for at-risk population.

National Resource Prioritization Call informs private sector supply distribution network through data-informed recommendations.

Acceleration of industrial manufacturing and distribution

States, tribal and local responses receive critical supplies from Strategic National Stockpile and private sector supported by federal aid bridge.

Expansion of the industry

Private Sector increase production capacity for critical supplies through retooling of assembly lines and partnerships where manufacturing capacity exists.

FEMA

COVID-19

Seen cards that say you don't have to wear a mask because of a disability? They have the Department of Justice (DOJ) seal, but they're not from the federal government. DOJ has said not to rely on the information in the cards.

Learn more: ftc.gov/coronavirus/scams

6 feet

Maintain distance

Rep
Tests,

Donate
Food and
Plasma

42

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US intelligence agencies under pressure to link coronavirus to Chinese labs

Senior Trump administration figures said to be demanding evidence on virus's origins

- [Coronavirus - latest updates](#)
- [See all our coronavirus coverage](#)



Mike Pompeo: 'enormous evidence' coronavirus came from Chinese lab

- Secretary of state does not provide any evidence to back claim
- Trump aide unclear on whether claim is virus was manmade
- [Coronavirus US: latest news](#)
- [Coronavirus outbreak: full coverage](#)



<https://www.theguardian.com/world/2020/apr/30/cia-pushes-back-at-trump-efforts-to-link-coronavirus-to-chinese-laboratories>
<https://www.theguardian.com/world/2020/may/03/mike-pompeo-donald-trump-coronavirus-chinese-laboratory>

43

All over the world:

Disinfection of outdoor areas



44

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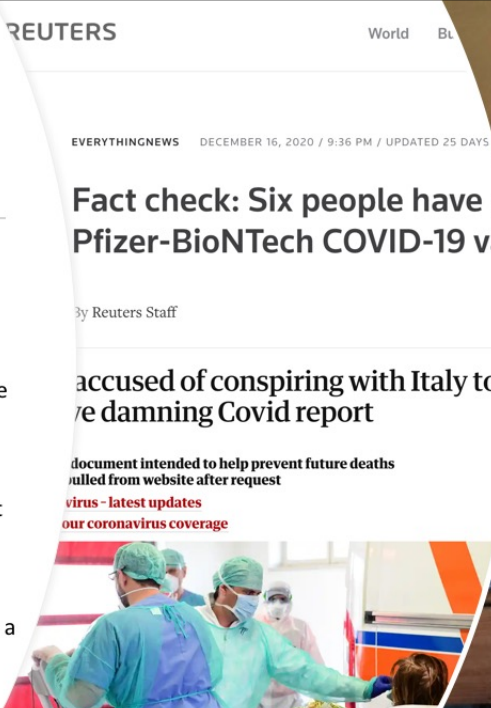
Misinformation in practice: International Level

(international organizations, governments influencing other governments)


Foreign government interference (for ex. Russian state media claiming 6 vaccine deaths)

Problem with Italy's WHO report that disappeared

Herbal cures touted by Madagascar's president became a hit all over Africa (and was disproven)



REUTERS World BU
EVERYTHINGNEWS DECEMBER 16, 2020 / 9:36 PM / UPDATED 25 DAYS
Fact check: Six people have recovered from Pfizer-BioNTech COVID-19 vaccine
By Reuters Staff
accused of conspiring with Italy to write damning Covid report
document intended to help prevent future deaths pulled from website after request
virus - latest updates
our coronavirus coverage



45

Hydroxychloroquine in the US



GlobalResearch
Centre for Research on Globalization
globalresearch.ca / globalresearch.org

A Report on Successful Treatment of Coronavirus

Dr. Vladimir Zelenko
Board Certified Family Practitioner
507 Rt. 206, Monroe, NY 10800
March 23, 2020

To all medical professionals around the world:
My name is Dr. Zden Zelenko and I practice medicine in Monroe, NY. For the last 16 years, I have cared for approximately 70% of the adult population of Monroe, which is a very close knit community of approximately 25,000 people in which the infection spread rapidly and unchecked prior to the imposition of social distancing.

As of today my team has tested approximately 200 people from this community for Covid-19, and 85% of the results have been positive. If extrapolated to the entire community, that means more than 20,000 people are infected at the present time. Of this group, I estimate that there are 1500 patients who are in the high-risk category (i.e. >65, immunocompromised, comorbidities, etc).

Given the urgency of the situation, I developed the following treatment protocol in the pre-hospital setting and have seen only positive results.

1. Any patient with shortness of breath regardless of age is treated.

Paul Craig Roberts
Institute for Political Economy

Home About Interview archive Articles B

Welcome to PaulCraigRoberts.org

46

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Surgisphere: governments and WHO changed Covid-19 policy based on suspect data from tiny US company

Surgisphere, whose employees appear to include a sci-fi writer and adult content model, provided database behind Lancet and New England Journal of Medicine hydroxychloroquine studies

THE LANCET
The NEW ENGLAND JOURNAL of MEDICINE

▲ A tiny US company, Surgisphere, is behind flawed data which led to governments and the world health organisation changing health policy Photograph: Anthony Brown/Alamy Stock Photo

Lancet, NEJM Retract Surgisphere Studies on COVID Patients

All authors other than company founder and CEO Sapan Desai were "unable to undergo an independent audit of the data," *The Lancet* states.

Catherine Offord
Jun 4, 2020



47

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48

Fact Checkers



CORRECTIV
Recherchen für die Gesellschaft

Falschmeldungen zum neuartigen Coronavirus

Derzeit werden viele Falschmeldungen und Gerüchte zum Coronavirus verbreitet. Bitte helft uns, sie zu finden und

<https://www.politico.eu/article/coronavirus-fake-news-fact-checkers-google-facebook-germany-spain-bosnia-brazil-united-states/>
<https://forms.crowdnewsroom.org/corona-fakenews/corona-fakenews/slide0>

49

Social Media

Some platforms have a bias to leaving up content that spreads

Equal access to information should not mean equal access to platform of hundreds of millions of people



National Leadership Award Presented to Sacha Baron Cohen

https://www.youtube.com/watch?v=ymaWq5yZIYM&feature=emb_title

50 LIKE

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Our experience

The screenshot shows the Express website interface. At the top, there are navigation links for LOGIN, REGISTER, and social media icons. Below that is a main menu with categories like HOME, NEWS, SHOWBIZ & TV, SPORT, COMMENT, FINANCE, TRAVEL, ENTERTAINMENT, and LIFE & STYLE. The article title is "Coronavirus warning: Mass use of hand gels could CREATE unstoppable superbugs - expert". The sub-headline reads: "THE mass use of hand gels to fight coronavirus could create unstoppable superbugs, researchers warn." The author is listed as "By LUCY JOHNSTON, EXCLUSIVE" and the publication date is "PUBLISHED: 11:36, Sun, Aug 30, 2020 | UPDATED: 11:47, Sun, Aug 30, 2020". There are social sharing buttons for SHARE, f, TWEET, in, and p. A "Most read in UK" section on the right features a video thumbnail of Boris Johnson with the caption "UK lockdown update: What are the new lockdown rules in England?". Below the main article, there is a smaller section titled "Lockdown: UK must 'live with coronavirus' claims expert" with a video thumbnail. The URL at the bottom is "https://www.express.co.uk/news/uk/1329220/coronavirus-superbug-warning-hand-gels-health-danger-andrew-kemp-covid-19".

https://www.express.co.uk/news/uk/1329220/coronavirus-superbug-warning-hand-gels-health-danger-andrew-kemp-covid-19

51

Our reaction

The screenshot shows a Clean Hospitals press release. At the top, there are navigation tabs for "Clean Hospitals Updates", "COVID-19", and "Fake News - Misinformation". The main title is "Clean Hospitals answers to a widely shared piece of fake news about alcohol-based handrub". The author is "By cleanhospitals" and the date is "9th September 2020". Below the title, there are social sharing buttons for f Share, Tweet, and Pin. A "Press Release" section contains the text: "Geneva, 8 September 2020 - Clean Hospitals would like to bring your attention to a piece of misinformation about hand hygiene written by Lucy Johnston interviewing Dr. Andrew Kemp in the Express.¹". On the right, there is a "Categories" sidebar with "Articles", "Clean Hospitals Updates", "COVID-19", and "Events". A "clean hospitals" logo is visible in the bottom right corner.

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Myth: All products are created equal

Truths:

The need for supplies and products has encouraged substandard products to appear in the market

Methanol scare in some HH products in the US (FDA list), inappropriate face shields and masks

UV light and cleaning chemicals should not be used on or in the body

il List > Int J Environ Res Public Health > v.15(7); 2018 Jul > PMC6069146



Int J Environ Res Public Health. 2018 Jul; 15(7): 1440.
Published online 2018 Jul 9. doi: [10.3390/ijerph15071440](https://doi.org/10.3390/ijerph15071440)

PMCID: P
PM

Methanol as an Unlisted Ingredient in Supposedly Alcohol-Based Rub Can Pose Serious Health Risk

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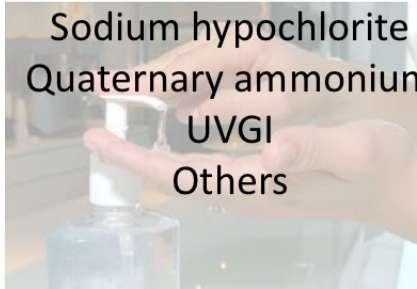
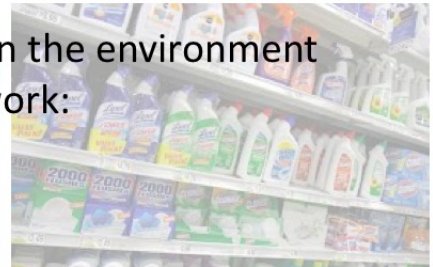
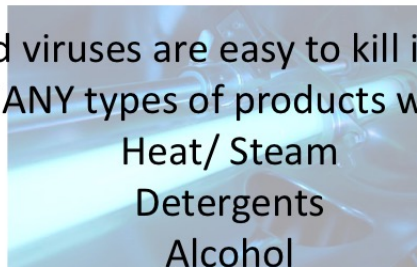


Myth: SARS CoV-2 is difficult to kill in the environment

Truth: Enveloped viruses are easy to kill in the environment
MANY types of products work:

Heat/ Steam
Detergents
Alcohol

Sodium hypochlorite
Quaternary ammonium
UVGI
Others



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The need for solutions and people's fear has caused an explosion of fake cures



Myths: Everyone needs to wear an N95 mask/ A simple scarf will work just as well

Truths:

- People in the community and healthcare workers only need a surgical mask unless they are taking care of someone with COVID. Some cloth masks are of high quality and work well for everyday use
- Inappropriate face shields and masks are everywhere
- Masks need to be worn correctly
- Masks with vents will not protect those around you



56

The aerosolization debate:

R_0 for SARS CoV-2 vs. other airborne viruses

The technical vs. the clinically urgent

The WHO and the CDC perspectives



Education is key:

For the public and in healthcare facilities
IPC measures, specific products and
protocols

As a pandemic progressed there was a lot of information, some evolving and changing, some seemingly contradictory
This is very difficult for people to understand

58

WHO Approach: Mythbusters

Micronutrients, such as vitamins D and C and zinc, are critical for a well-functioning immune system and play a vital role in promoting health and nutritional well-being.
 There is currently no guidance on the use of micronutrient supplements as a treatment of COVID-19. WHO is coordinating efforts to develop and evaluate medicines to treat COVID-19.

FACT: Vitamin and mineral supplements cannot cure COVID-19

No, antibiotics do not work against viruses, only bacteria.
 The new coronavirus (2019-nCoV) is a virus and, therefore, antibiotics should not be used as a means of prevention or treatment. However, if you are hospitalized for the 2019-nCoV, you may receive antibiotics since bacterial co-infection is possible.

Are antibiotics effective in preventing and treating the new coronavirus?

Most people who get COVID-19 have mild or moderate symptoms and can recover thanks to supportive care.
 If you have a cough, fever and difficulty breathing seek medical care early – call your health facility by telephone first.
 If you have fever and live in an area with malaria or dengue seek medical care immediately.

FACT: Most people who get COVID-19 recover from it

The prolonged use of medical masks can be uncomfortable. However, it does not lead to CO2 intoxication nor oxygen deficiency.
 While wearing a medical mask, make sure it fits properly and that it is tight enough to allow you to breathe normally. Do not re-use a disposable mask and always change it as soon as it gets damp.

FACT: The prolonged use of medical masks* when properly worn, DOES NOT cause CO2 intoxication nor oxygen deficiency

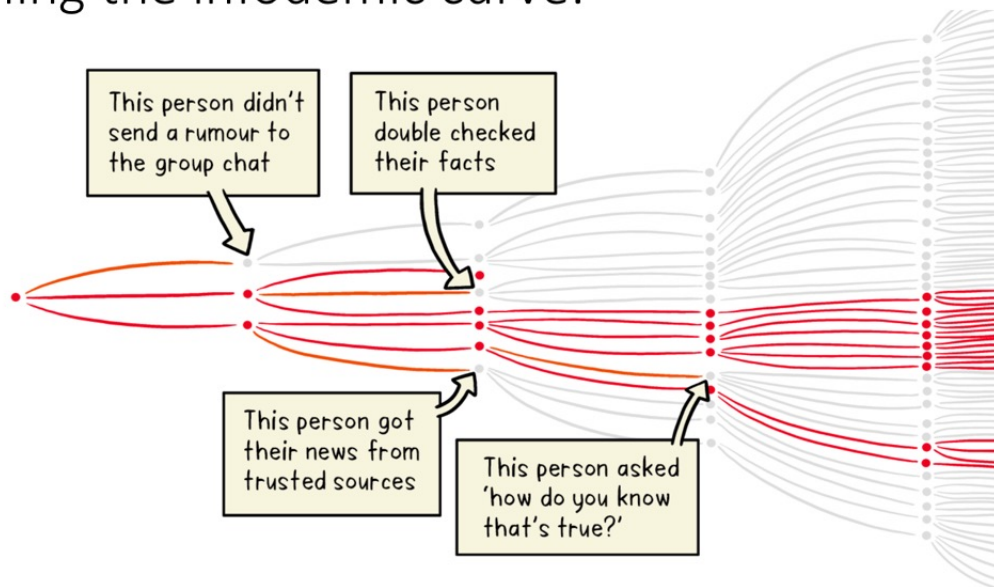
Older people, and people with pre-existing medical conditions (such as asthma, diabetes, heart disease) appear to be more vulnerable to becoming severely ill with the virus.
 WHO advise people of all age to take steps to protect themselves from the virus, for example by following good hand hygiene and good respiratory hygiene.

Does the new coronavirus affect older people, or are younger people also susceptible?

People of all ages can be infected by the new coronavirus (nCoV-2019).

59

Flattening the infodemic curve:



[who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public/myth-busters](https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public/myth-busters)

60

What shapes beliefs & what makes science special?

Humans are mostly not rational

Science is.
(if done well)



61

Outline

- Background in fake news and misinformation
- Case study: Measles
- The democratization of misinformation and scientific publishing
- How can we make sense of all this?
- Approaches to addressing misinformation
- ➔ • **The SARS CoV-2 vaccine**

62

Latest fake news: The COVID vaccines

Rumors & Truths



63

Viral videos about “disappearing needles”

One version of this video had 20k retweets and 500k views

<https://www.bbc.com/news/55364865>

BLEADING

Another video showing y
about the virus!

Rickydean @RDCLandscapes · 5h
Disappearing needles!! There soo desp

0:03 56.7K views

8:13 PM · Dec 16, 2020 · Twitter for Android

64

Fake News in the Time of COVID-19

Prof. Didier Pittet and Alexandra Peters, University of Geneva Hospitals, Switzerland
A Webber Training Teleclass

20h · 159 117 Comments 168 Shares

CONTAINS MISINFORMATION

EGYPT INDEPENDENT
HEALTH & FITNESS
December 9, 2020
2:16 pm

FDA: Six people die during Pfizer/BioNTech's coronavirus vaccine trials

65

<https://www.bbc.com/news/55364865>
<https://egyptindependent.com/fda-six-people-die-during-pfizer-biontechs-coronavirus-vaccine-trials/>

COVID vaccine death reports

Oracle Films
07 Dec 2020

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THE QUESTION ON EVERYONE'S MIND...

00:00 1.00x

Ask The Experts (Covid-19 Vaccine) - Now Banned on YouTube and Facebook

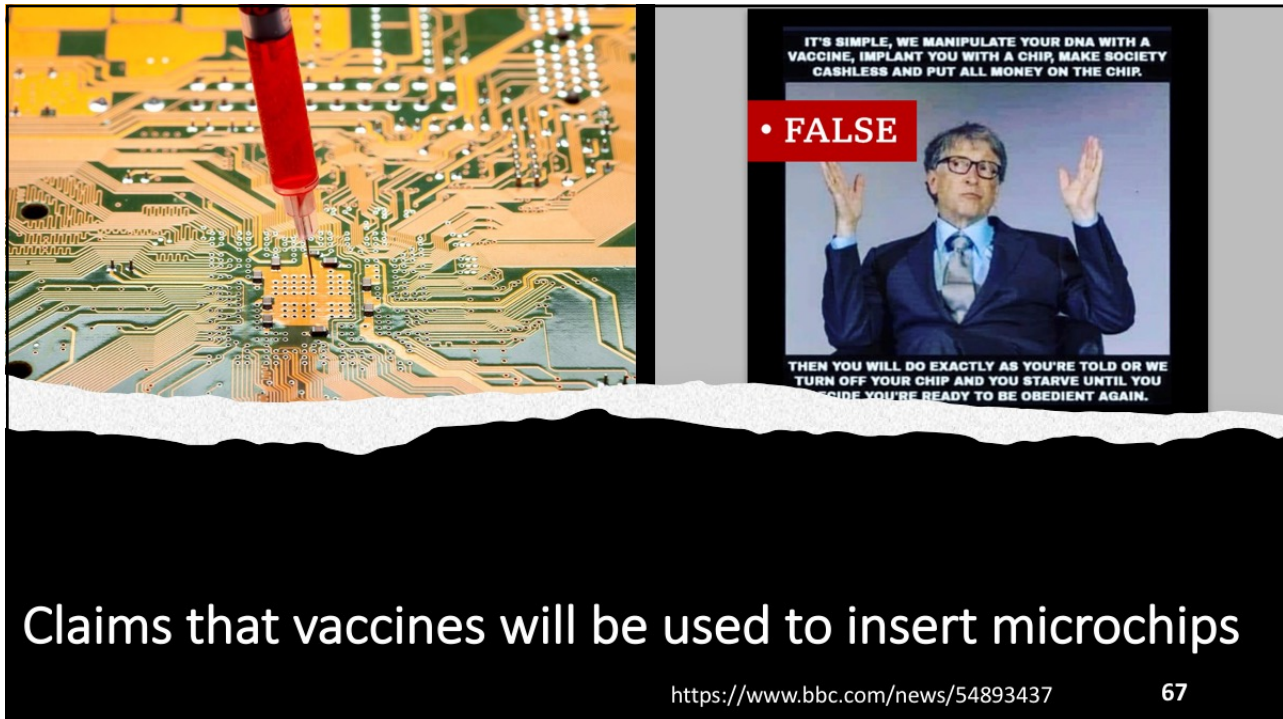
66

Misleading videos using "experts"

Similar approach as Plandemic

<https://www.bbc.com/news/55364865>
<https://www.factcheck.org/2020/10/doctors-in-video-falsely-equate-covid-19-with-a-normal-flu-virus/>

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Claims that vaccines will be used to insert microchips

<https://www.bbc.com/news/54893437> 67

Claims that the vaccine will alter your DNA

mRNA isn't the same as DNA, and it can't combine with our DNA to change our genetic code




<https://www.gavi.org/vaccineswork/will-mrna-vaccine-alter-my-dna> 68

Bogus recovery rate claims

Assertions that a vaccine is unnecessary and dangerous

<https://www.bbc.com/news/54893437>



Chance a virus with a 99.97% recovery rate

Alter my DNA from an experimental vaccine, with NO liability, from a corrupt industry

69

A few facts about SARS CoV-2 vaccines

Categories of vaccines:

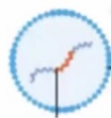
Inactivated + Aluminum



Adenovirus vector



mRNA



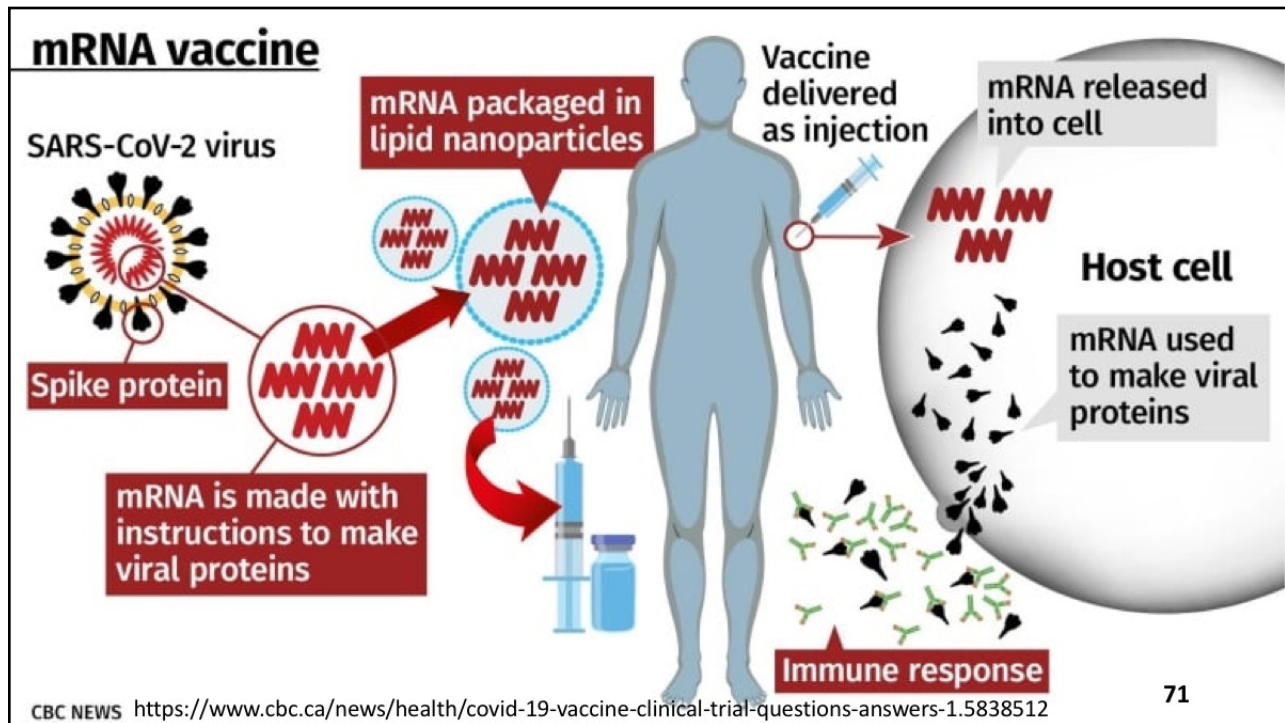
Proteins + adjuvants



Differences in level of protection, T cell activation, antibody stimulation, and tolerance

<https://www.infovac.ch/fr/infovac/actualites/995-vaccins-contre-le-covid-19-quelques-reponses-a-beaucoup-de-questions>

70

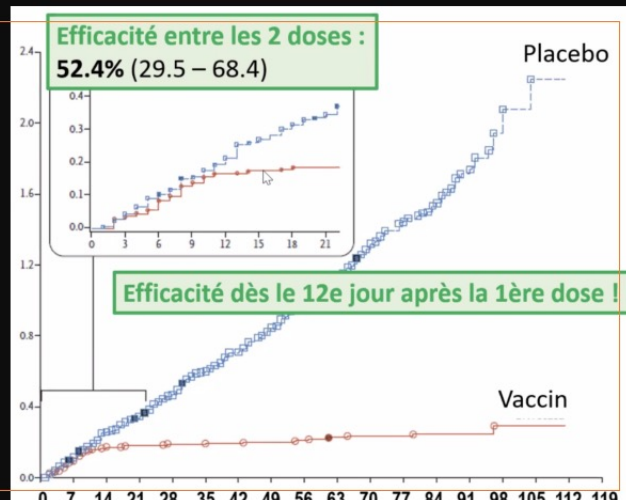


mRNA vaccine efficacy

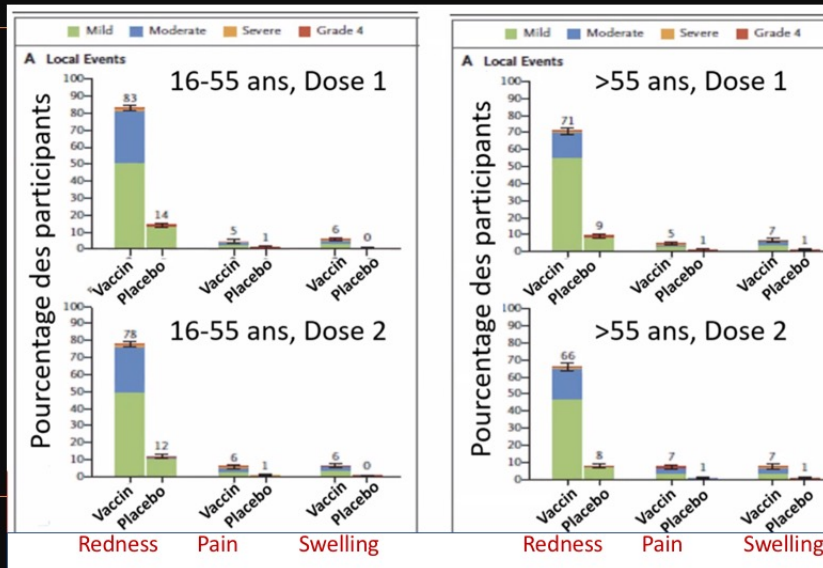
Pfizer / BioNTech Trials:
44,000 people randomized

Moderna Trials: 30,000
people randomized

The results are very similar

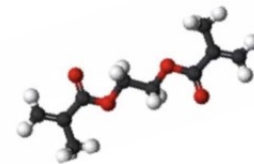


Pfizer mRNA vaccine tolerance



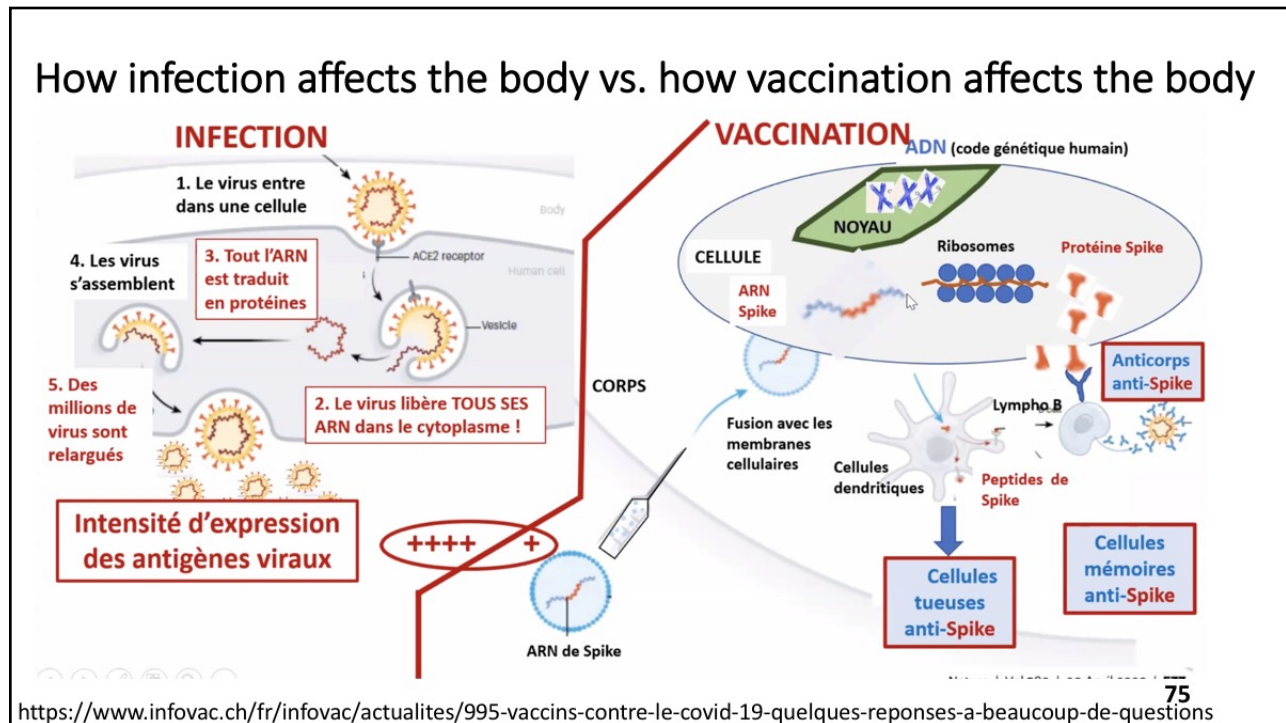
<https://www.infovac.ch/fr/infovac/actualites/995-vaccins-contre-le-covid-19-quelques-reponses-a-beaucoup-de-questions> ⁷³

Risks of allergic reactions:



- Very low
- There are numerous lipids in the vaccines including PEG, which is often used in food and cosmetics, but has rarely been known to cause allergies (degranulation of mastocytes)
- Allergic reactions to the vaccines may be attributed to a PEG allergy
- No severe reactions reported in trials, but a 2/140,000 in the UK as of mid December (and a few since then as well)

<https://www.infovac.ch/fr/infovac/actualites/995-vaccins-contre-le-covid-19-quelques-reponses-a-beaucoup-de-questions> ⁷⁴



Comparisons:

- Very low side effects so far, hundreds of thousands of people already vaccinated
- Need to compare effects and risks of getting COVID to effects and risks of getting the vaccine
- No medical treatment is devoid of risks, but context is crucial

CONTEXT: Vaccines are one of the types of medications with the least amount of side effects-paracetamol overdose is the most common reason for calling poison control centers. In the US alone, over 56,000 ER visits and 450 deaths are attributed directly to paracetamol poisoning. But no one is scared of taking it

Conclusions: we need to...

FAKE NEWS in the time of COVID-19

- Restore understanding of science and trust in science
(Mistrust is not always unreasonable)
- Better national and local level-communication
- Promote transparency
- Provide safety nets for individuals and businesses
- Fight anti-intellectualism
- Put issues into relatable contexts
- Listen to concerns and underlying fears
- Encourage accountability



77

Thank You

78

Fake News in the Time of COVID-19
Prof. Didier Pittet and Alexandra Peters, University of Geneva Hospitals, Switzerland
A Webber Training Teleclass

www.webbertraining.com/schedulep1.php	
January 21, 2021	<p><i>(FREE Teleclass)</i> <u>COVID IN NURSING HOMES</u> Speaker: Prof. Allison McGeer, University of Toronto</p>
January 28, 2021	<p><i>(FREE Teleclass)</i> <u>COVID UPDATE: FOCUS ON VACCINES</u> Speaker: Prof. Robert T. Ball, Medical University of South Carolina</p>
February 4, 2021	<p><u>SUPPORTING THE PSYCHOLOGICAL SAFETY AND WELLBEING OF HEALTHCARE WORKERS THROUGH UNCERTAIN TIMES</u> Speaker: Amy Pack, Canadian Patient Safety Institute</p>
February 9, 2021	<p><i>(European Teleclass)</i> <u>ANTIMICROBIAL STEWARDSHIP IN ASIA PACIFIC - GLOBAL BELLWEATHER?</u> Speaker: Prof. Anucha Apisarntharak, Thammasat University Hospital, Thailand</p>
February 17, 2021	<p><i>(South Pacific Teleclass)</i> <u>THE NEW ZEALAND COVID-19 RESPONSE: LESSONS LEARNED</u></p>

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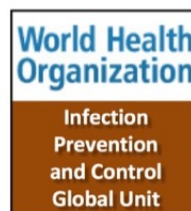
virox.com



gamahealthcare.com



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who.int/infection-prevention/en

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