

ARE ANTI-VAXXERS THREATENING PHYSICIANS?

A Belgian perspective

The COVID-19 pandemic showed how anti-government, anti-science and anti-vaxxer rhetoric collide in an international movement against vaccination and lockdown measures. We assessed if Belgian physicians were threatened by anti-vaxxers using an online survey. We assessed what the impact was on their clinical activities and how they coped with anti-vaxxer rhetoric. N=283 physicians completed the survey. Since the COVID-19 pandemic started 11% of the respondents received threats from anti-vaxxers. Threats were distributed via social media (55%), personal email (35%), personal letter (16%), and a posted flyer (39%). Physicians that got media attention were four times more likely to be threatened. We conclude that a substantial proportion of physicians were threatened by anti-vaxxers. The impact of anti-vaxxer rhetoric on clinical practice is various: some physicians feel angry, others are tired, while some even are scared. Another group of physicians is still combative in convincing anti-vaxxers.

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Introduction

Coronavirus disease 2019 (COVID-19) affects the world since December 2019. On March 11, 2020, the World Health Organization officially named it a pandemic.¹ In pandemics with new, not well-known viruses, health care workers are (working in) on the frontline. With the surge of COVID-19, many applaud their contribution and work, jeopardizing their own health and safety.² Vaccinations are believed to be one of the major strategies in containing infectious diseases: (as has been proven in the past for other pathogens such as tetanus, pertussis, polio,...) this way mortality/morbidity by tetanus, polio, pertussis, diphtheria, flu,... was reduced

¹ WHO, Coronavirus disease 2019 pandemic. (2020) <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>. (Accessed June 26 2020).

² The Conversation, Healthcare workers are still coming under attack during the coronavirus pandemic. <https://theconversation.com/healthcare-workers-are-still-coming-under-attack-during-the-coronavirus-pandemic-136573>. (Accessed May 2 2021).

significantly.^{3,4} Before vaccines became available, public health response was limited to containment of the pandemic by quarantine and lockdown measures as exit strategy.⁵

History teaches that when the plague disrupted Italy in the 16th century, "cities like Palermo, Milan, Padua and Venice recognized the difficulties that quarantine and blockade imposed on commerce and the employment of artisans and laborers."⁶

In the first wave of the current COVID-pandemic governments immediately decided to command a lockdown, very similar to middle age management of the contagion. By the end of 2021 many countries have been challenged by five waves thusfar, the latter being due the Omicron variant. During the different waves, governments were and still are struggling to find ways to deal with this pandemic while minimally affecting the economy and civil rights negatively. The uncertain scenario of the Omicron variant was causing governments in some countries to decide to install a lockdown again, despite collateral damage, after initially ignoring scientist's recommendations.⁷

Since pandemics hit the world, anti-government and anti-minorities-rhetoric has been reported.⁶

Fear of losing jobs, fear of contracting the disease and ultimately fear of the unknown, all lead to anti-government, anti-science, anti-vaccination, and anti-health care worker sentiment in the general population.⁸ Religious considerations are another reason why some people are against vaccination. Ultra-conservative Amish in Ohio, US, express a higher vaccine hesitancy. While the Catholic church cancelled its services, services in the conservative Bible Belt region in The Netherlands continued. Communal religious habits remained largely unchanged in orthodox Jewish communities.^{9,10,11,12}

Another phenomenon is the deliberate spread of subjective information by Russian cyber propaganda factions who praise the health care response of Russian government and Russian vaccines, while misinformation is spread about outcome figures in other countries.¹³

Finally, the right wing extremist narrative mixes racist motives, apocalyptic thinking and conspiracy theories (e.g. they believe that the government wants to control the people with the global rollout of the 5G network and to track people by inserting microchips via vaccinations).^{13,14}

3 Shiri Tinevimo, "Vaccinating Adolescents and Children Significantly Reduces COVID-19 Morbidity and Mortality across All Ages: A Population-Based Modeling Study Using the UK as an Example," *Vaccines* (Basel) 9 no. 10 (2021): 1180.

4 Sarah Mbaeyi, et al. "The Advisory Committee on Immunization Practices' Interim Recommendations for Additional Primary and Booster Doses of COVID-19 Vaccines - United States, 2021," *MMWR Morb Mortal Wkly Rep.* 70, no. 44 (2021): 1545.

5 Pietro Coletti, "A data-driven metapopulation model for the Belgian COVID-19 epidemic: assessing the impact of lockdown and exit strategies," *BMC Infect Dis.* 21 no.1 (2021): 503.

6 Samuel Cohn, "Pandemics: waves of disease, waves of hate from the Plague of Athens to A.I.D.S.," *Hist J.* 85 no. 230 (2012): 535.

7 Gareth Iacobucci, "Covid-19: Government ignores scientists' advice to tighten restrictions to combat omicron," *BMJ* 375 (2021): n3131.

8 Ian Freckelton Qc, "COVID-19: Fear, quackery, false representations and the law," *Int J Law Psychiatry* 72 (2020): 101611.

9 Katie Corcoran, Cristopher Scheitle, Bernard DiGregorio, "Christian nationalism and COVID-19 vaccine hesitancy and uptake," *Vaccine* 39 no. 45 (2021): 6614.

10 Ethan Scott, et al. "Vaccination patterns of the northeast Ohio Amish revisited," *Vaccine* 39 no. 7 (2021): 1058.

11 Lieke Michaela Hoekman, Marlou Smits, Xander Koolmann "The Dutch COVID-19 approach: Regional differences in a small country," *Health Policy Technol.* 9 no. 4 (2020): 613.

12 Ami Schattner, Abraham Klepfish, "Orthodox Judaism as a Risk Factor of Covid-19 in Israel," *Am J Med Sci.* 360 no.3 (2020): 304.

13 VSSE, *The hidden danger behind COVID-19*, <https://www.vsse.be/nl/het-verborgen-gevaar-achter-covid-19>. (Accessed November 10, 2020).

14 Harald De Cauwer, Francis Somville, "Health Care Organizations: Soft Target during COVID-19 Pandemic," *Prehosp Disaster Med.* 36 no. 3 (2021): 345.

In 2020 this was fuelled by the QAnon movement and the former US President who publically called Anthony Fauci, the key figure in the US response to COVID-19, an idiot. As a result of these populist remarks of the former US president on a political rally, Dr Fauci received death threats accusing him of contradicting the president and politicizing the response.^{15,16,17}

Fear, religious considerations, populist political narrative, fake news, and conspiracy theories inspire so-called lone wolves and lead to social unrest. As the pandemic is evolving, protests become more violent turning against health care workers and resulting in deliberate attacks against testing or vaccination centers or hospitals.

May 2021, in Belgium a manhunt was started after a soldier with far right extremist ideas issued threats to the armed forces, the government, a mosque and virologists in a goodbye letter to his wife. After a couple of weeks his body was found, no one was attacked by him, but still scientists and health care workers were alarmed by his threats.¹⁸

We assessed if Belgian physicians were or felt threatened by anti-vaxxers using an online survey.

Methods

In order to evaluate the impact of the anti-vaxxers on Belgian physicians, a questionnaire (see addendum) was drawn up using the SurveyMonkey[®] (San Mateo, US) tool. It consisted of demographic questions, and questions if and to what extent respondents were confronted or even threatened by anti-vaxxers. Furthermore, we assessed the response of the physicians towards the anti-vaxxers, if they informed peers, the Belgian medical association, police or justice department, or the national security agency (VSSE). We also evaluated the emotional impact on physicians using a set of questions on their feeling about anti-vaxxer rhetoric.

In October/November 2021, the survey was distributed via a Flemish Facebook group of COVID physicians (both general practitioners and specialists who share COVID-knowledge), "Huisarts Nu" (Flemish journal for general practitioners) and BeSEDiM (Belgian Society of Emergency and Disaster Medicine). To increase the rate of responders, a user-friendly tool was utilized, the survey was limited to essential questions.

The data were processed using SPSS V26.0 (IBM Corp. Released 2017. IBM SPSS Statistics for Windows, Version 26.0. Armonk, NY: IBM Corp.).

This study was approved by the ethics committee of the Dimpna General Hospital, September 21th 2021.

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- 15 Caitlin Williams, Jocelyn Getgen Kestenbaum, Benjamin Mason Meier, "Populist Nationalism Threatens Health and Human Rights in the COVID-19 Response," *Am J Public Health* 110 no. 12 (2020): 1767.
 - 16 Janice Hopkins Tanne, "Covid-19: Fauci awarded for "unprecedented public service" while Trump fires more insults," *BMJ* 371 (2020): m4064
 - 17 Quint Forgey, ""Everyone is lying": Trump undercuts public health officials in fresh attacks," Politico. Published July 13, 2020. (Accessed July 13, 2020)
 - 18 VRTnews, <https://www.vrt.be/vrtnws/en/2021/05/22/juergen-conings-goodbye-letter-suggests-he-is-well-prepared/>. (Accessed May 30, 2021).

Results

- A total of 283 physicians (169 M/114 F) completed the survey.
- Age of the participants per decade: 21-30y: 38 ; 31-40y: 60 ; 41-50y: 53 ; 51-60y: 45 ; 61-70y: 22 ; older than 70: 1.
- 79 were general practitioners (or trainees) of which 38 males and 41 females, 201 were specialists (or trainees) of which 131 males and 70 females. Only 3 colleagues, all females, worked in a student guidance center. In the specialist group, ED / ICU physicians were the largest subgroup (n= 51). Only 1 virologist was enrolled in the survey.
- 43 (19%) (had) worked in a vaccination center.
- 32 respondents received media attention because of their function as an expert, because of their work in a vaccination center, or after writing an article on COVID pandemic and vaccination, ...
- Since the COVID-19 pandemic started 11% of the respondents had received threats from anti-vaxxers (figure 1). Threats or hate messages were distributed via social media (55%), personal email (35%), personal letter (16%), and a posted flyer/pamphlet (39%) (figure 2). There was no significant difference in threats between general practitioners and specialists (figure 3). Physicians that got attention from the media were four times more likely to be threatened (Mann Whitney U test, $p < 0.001$) (figure 4). Working in a vaccination center was not correlated with receiving more threats (Mann Whitney U test, $p = 0.404$) (figure 5). No one working in a vaccination center was photographed against his will by anti-vaxxers. Despite hate mails and threats n=31 respondents did not react because they believe everyone can have his own opinion. Others informed the council for harassment of the Belgian medical association (n= 5), the police/ justice department (n=5), or the national security agency (n=3), some informed several of these. No one contacted doctors4doctors, a peer support group for doctors with mental health concerns. Eight reported they conceived the threats as potentially dangerous for their own person, nine feared the safety of their family members was equally at stake.

Figure 1: amount of physicians being threatened by anti-vaxxers as reported by the participants of the survey.

Physicians who received threats

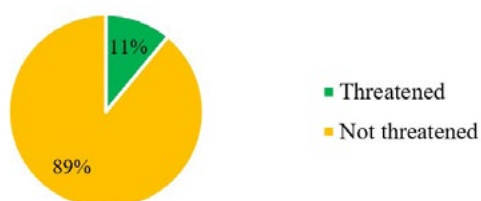


Figure 2: the ways participants of this survey were threatened by anti-vaxxers

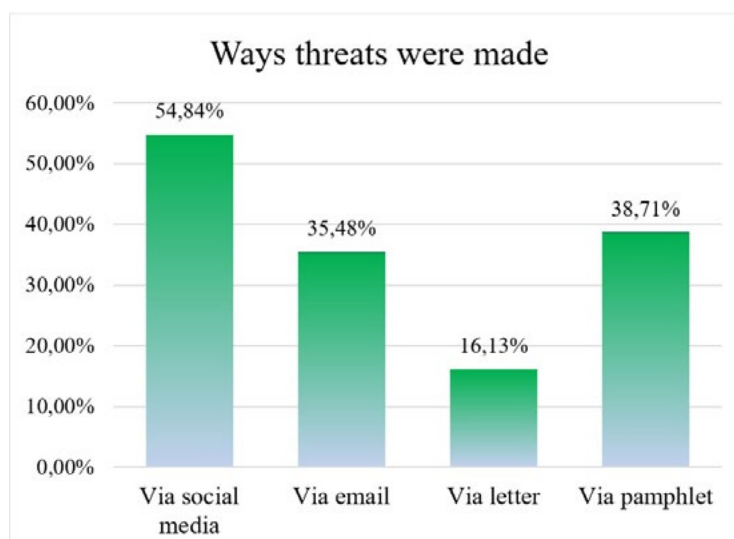


Figure 3: Amount of physicians being threatened by anti-vaxxers: general practitioners versus specialists: no statistical significance

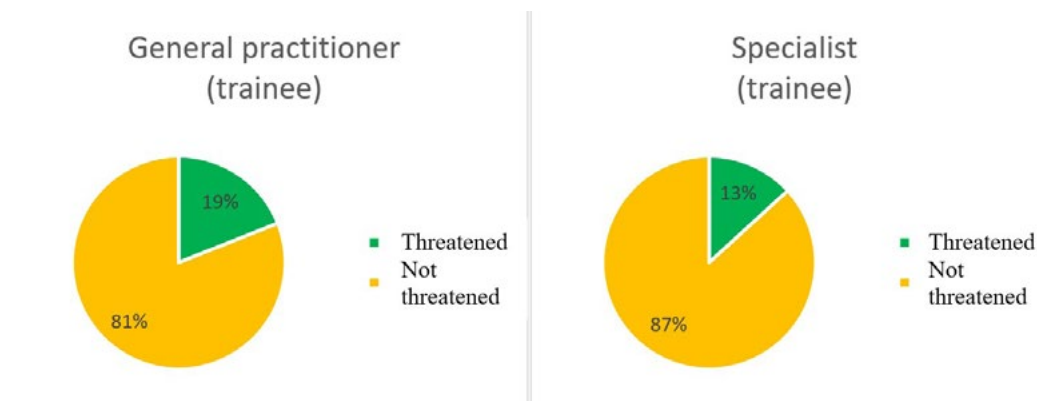


Figure 4: Amount of physicians being threatened in relation to attention they received in the media

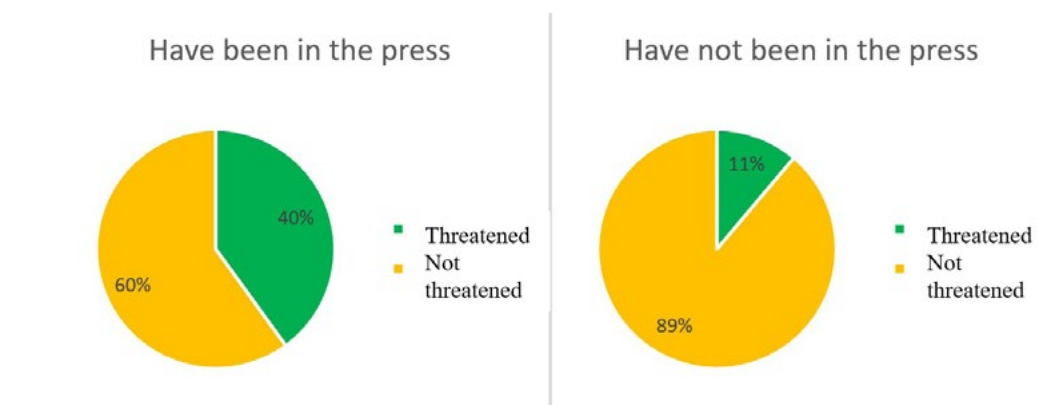


Figure 5: Amount of physicians being threatened by anti-vaxxers: participants working or have been working in a vaccination versus not being active in such a center: no statistical significance.

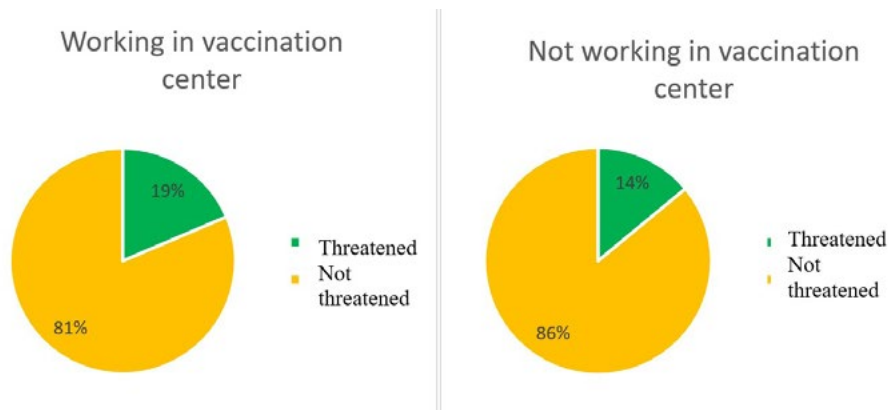


Table 1 : responses about the sentiment and feelings of the participants, assessed by a symmetric and balanced four level Likert scale (1 completely disagree , 2 rather do not agree , 3 rather agree , 4 completely agree). SD: standard deviation.

Items	Mean (SD)
Anti-vaxxer sentiment is only a minimally present problem	2,11 (0,686)
Anti-vaxxers are best to be ignored	2,19 (0,776)
Anti-vaxxer sentiment is possibly a dangerous evolution	3,21 (0,732)
Fake news has no influence on my work	2,39 (1,004)
Influence of anti-vaxxers on my patients makes work more difficult	2,67 (0,857)
The positive evolution of ICU patients and COVID related deaths proves anti-vaxxers wrong	3,48 (0,704)
New variants for which vaccinations do not work prove anti-vaxxers right	1,59 (0,684)
New variants for which vaccinations do not work give anti-vaxxers more arguments for distributing fake news	2,89 (0,786)
Fake news distribution <u>has to</u> be opposed by deleting social media accounts	2,81 (0,928)
Fake news distribution <u>has to</u> be opposed by distributing validated scientific research to the public	3,77 (0,514)
Anti-vaxxers should be opposed by the police	2,03 (0,856)
Anti-vaxxers have always been present and are a negligible minority	2,53 (0,768)

Table 2: organizations / websites which give a forum for anti-vaccination-rhetoric.

Belgian anti-vaxxer groups/websites
Artsen voor vrijheid
Viruswaanzin
vaccinatieschademelden.be
frontnieuws.com
Samen Voor Vrijheid
Europeans United
Restart-life
Bewuste Burgers
docs4opendebate
vzw Lagardère

Finally, the responses about the sentiment and feelings of the participants, assessed by a symmetric and balanced four level Likert scale (1 completely disagree , 2 rather do not agree , 3 rather agree , 4 completely agree), are shown in table 1.

The participants agreed the most to the following questions:

Anti-vaxxer sentiment is possibly a dangerous evolution.

The positive evolution of ICU patients and COVID related deaths proves anti-vaxxers wrong.

Fake news distribution has to be opposed by distributing validated scientific research to the public.

The participants disagreed the most to the following questions:

New variants for which vaccinations do not work prove anti-vaxxers right.

Limitations of the study:

A limitation of this work was the fact that participants self-selected into the study rather than being recruited via probability-based sampling. We recognize the sample is regionally limited. The survey was launched at a moment when physicians in the first line (general practitioners) were very busy as in Belgium the fourth wave was emerging and the health system was once again challenged. The results were analysed during the fifth wave (Omicron variant). In the same period other online surveys tried to reach the same group in order to assess pandemic fatigue, vaccination and COVID-testing strategies,... Survey tiredness and lack of time because of the health care system being overwhelmed a fourth time, can also explain the rather small response rate.

Discussion

Vaccine hesitancy was reported in some populations, e.g. some religious groups.^{19,20,21,22}

Debus and Tosun found that when differentiating between people who consider themselves as far left or far right wing, that both groups of people were more likely to think vaccines often produce negative side effects and were more likely to think that vaccines are not rigorously tested before authorization. They conclude that ideological extremism on both ends of the spectrum explains skepticism of vaccination.²³ Some researchers estimate that the anti-vaxxer movement is (at least partially) directed by a well organized international network of anti-vaccine activists. The link between autism and vaccination was propagated by Andrew Wakefield in a study published in the *Lancet* in 1998, that was retracted afterwards by the editors.²⁴

However this false rhetoric is still ongoing in anti-vaxxer groups like European Forum for Vaccine Vigilance and Children's Health Defense Europe.^{25,26} Since the COVID-pandemic several Belgian groups and websites have been distributing fake news about vaccination risks and side-effects or gave a forum for anti-vaccination activists (table 2) and organized demonstrations, some ending in riots with police forces.

This was not only the case in Belgium. The COVID-19 pandemic showed anti-government, anti-science and anti-vaxxer rhetoric collide in an international movement against vaccination and lockdown measures.²⁷

The storming of the Reichstag, Germany (2020) and the Capitol, US (2021) and the curfew riots, The Netherlands (2021) are examples of astonishing right wing extremism inspired attacks of democracy. There is a great fear that these events will inspire others and copycat scenario's have been assessed by security agencies in their threat analysis.²⁸

Scientists and physicians are also being targeted by anti-vaxxers as a recent study of *Nature* and this current study showed.²⁹

The results of this survey are in accordance with an international survey by *Nature's* survey published in October 2021. *Nature's* study revealed that about 15% of scientists who had spoken to the media about COVID, had received death threats, and 22% had received threats of physical or sexual violence.

19 Katie Corcoran, Christopher Scheitle, Bernard DiGregorio, "Christian nationalism and COVID-19 vaccine hesitancy and uptake," 6614.

20 Ethan Scott, "Vaccination patterns of the northeast Ohio Amish revisited," 1058.

21 Lieke Hoekman, Marlou Smits, Xander Koolman, "The Dutch COVID-19 approach: Regional differences in a small country," 613

22 Ami Schattner, Abraham Klepfish, "Orthodox Judaism as a Risk Factor of Covid-19 in Israel," 304

23 Marc Debus, Jale Tosun, "Political ideology and vaccination willingness: implications for policy design," *Policy Sci* 54 (2021): 477.

24 Fiona Godlee, Jane Smith, Harvey Marcovitch, "Wakefield's article linking MMR vaccine and autism was fraudulent," *BMJ* 2011; 342 (2011): c7452.

25 VRT, *Deze mensen spreken op coronabetoging: van klassiek antivax tot complottheorieën uit kring van Bobby Kennedy Jr.* <https://www.vrt.be/vrtnws/nl/2022/01/20/de-sprekers-op-de-coronabetoging-doorge-licht-van-klassieke-anti/> (accessed January 25, 2022).

26 Philip Cawkwell, Davis Oshinsky, "Childhood vaccination requirements: Lessons from history, Mississippi, and a path forward," *Vaccine* 33 no. 43 (2015): 5884.

27 VSSE, *The hidden danger behind COVID-19.* <https://www.vsse.be/nl/het-verborgen-gevaar-achter-covid-19>. (Accessed November 10, 2020).

28 Beatrice de Graaf, "How Contagious Were the Capitol Riots in Europe – In Praxis and in Perception?" *Terrorism and Political Violence* 33 no. 5 (2021): 922.

29 "COVID scientists in the public eye need protection from threats," *Nature* 598 no. 7880 (2021): 236.

Nature's study only surveyed scientists who had spoken to the media, whereas our study surveyed physicians, with or without media attention.

In our survey 11% of the respondents had received threats from anti-vaxxers. Physicians that got attention from the media were four times more likely to be threatened (Mann Whitney U test, $p < 0.001$). An active campaign of anti-vaxxers in harassing and intimidating scientist and physicians is a global strategy, although in some countries like the Netherlands and Belgium they might be more influential than elsewhere.

This has consequences for the scientists and physicians. Scientists expressed their concerns on their safety and said that it had affected their willingness to speak to the media in the future.²⁹ In our survey only a minority reported they conceived the threats as potentially dangerous for their own person, or that they feared the safety of their family members was equally at stake. On the contrary, using a Likert scale to assess feelings and sentiment on the role of anti-vaxxers, the question the participants most agreed on was: *Fake news distribution has to be opposed by distributing validated scientific research to the public.*

Whereas Nature's editorial board expressed the fear that the intimidation of scientists would result in discouraging researchers from contributing to public discussion, our results show Belgian physicians remain combative.

Health care workers are potential soft targets for anti-vaxxers and extremists mixing far left or far right ideology, doom thinking and conspiracy theories.³⁰ Hospitals and vaccinators have been the target of terrorist attacks, and during the COVID-pandemic this is ongoing and risks might even be higher.^{31,32}

Part of contra-terrorism medicine is the mitigation of these risks. Governments have to make efforts to improve pandemic preparedness and response for the next pandemic and have to invest in risk communication and community engagement strategies.³³

The International Committee of the National Red Cross head of health Dr Esperanza Martinez sums the most important preventative strategies in his 2020 news release: "To protect health care staff, medical facilities and patients from violence, it is of paramount importance to disseminate accurate information regarding the origin and modes of transmission and prevention of COVID-19. Health care workers, patients or specific groups must not to be stigmatized or blamed for the presence or spread of the virus."³⁴

These resulted in a checklist for the risk stratification and implementation of measures recommended by the ICRC.³⁵ Similarly, the World Health Organization presents a shorter list of ten lessons learned from the Ebola pandemic management, that can also be applied to address the COVID-19 pandemic (table 3).³⁶

30 Harald De Cauwer, Francis Somville, "Health Care Organizations: Soft Target during COVID-19 Pandemic," 345.

31 Gregory Jasani, Reem Alfalasi, Garret Cavaliere, et al. "Terrorist Attacks Against Vaccinators: A Review," *Health Secur.* 19 no. 5 (2021): 541.

32 Nitzan Ulmer, Dennis Barten, Harald De Cauwer, et al.. "Terrorist Attacks against Hospitals: World-Wide Trends and Attack Types," *Prehosp Disaster Med.* 37 no. 1 (2022): 25.

33 "COVID-19 National Preparedness Collaborators. Pandemic preparedness and COVID-19: an exploratory analysis of infection and fatality rates, and contextual factors associated with preparedness in 177 countries, from Jan 1, 2020, to Sept 30, 2021," *Lancet* (2022): S0140-6736(22)00172-6.

34 ICRC, 600 violent incidents recorded against health care providers, patients due to covid-19. International Committee of the National Red Cross, Published Aug 18, 2020. <https://www.icrc.org/en/document/icrc-600-violent-incidents-recorded-against-healthcare-providers-patients-due-covid-19>. (Accessed May 30, 2021).

35 ICRC, Covid-19 and violence against health care. Safer Covid-19 response: checklist for health-care services, 2021. https://healthcareindanger.org/wp-content/uploads/2020/05/4469_002_Safer_COVID-19_Response-Checklist_for_Health-care_Services-Lr_1.pdf. (Accessed May 30, 2021)

36 Julienne Ngoundoung Anoko, Boureima Rodrigue Barry, Hamadou Boiro, et al. "Community engagement for successful COVID-19 pandemic response: 10 lessons from Ebola outbreak responses in Africa," *BMJ Glob Health.* 4(Suppl 7) (2020): e003121.

Conclusion

Physicians are a peculiar soft target in this pandemic, especially those who stand up and fight openly against the contagion and support vaccination, isolation and quarantine-measures. Counter-terrorism medicine should assess strategies in mitigating this particular threat.

Most importantly, governments, justice departments, universities, and medical/scientific associations should protect and defend scientists/physicians, and condemn any form of intimidation or threat.

Unfortunately, scientist's and medical expert's opinions are not only contested by anti-vaccination/anti-government factions. As the COVID-pandemic is evolving, and people and governments are getting enough of containment measures, governments are ignoring expert's opinions and proposals. This way scientists and physicians and other health care workers remain the only canaries in the COVID-coalmine. ●

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