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Special Article: Risk Communication During COVID-19

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Abbreviations:
American Academy of Allergy, Asthma and Immunology (AAAAI); Case fatality rate (CFR);
Centers for Disease Control (CDC); Coronavirus disease 2019 (COVID-19); Institute for Health
Metrics and Evaluation (IHME); Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2);
World Health Organization (WHO)

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Abstract: During the unprecedented times caused by the novel coronavirus COVID-19, there is rapidly evolving information and guidance. However, a focus must also be on proper and effective risk communication. This is especially the case during pandemics that have high rates of infection, significant morbidity, lack of therapeutic measures, and rapid increases in cases, all of which apply to the current COVID-19 pandemic. A consequence of poor risk communication and heightened risk perception is hoarding behavior, which can lead to lack of medications and personal protective equipment. One potential way to ensure appropriate risk communication is utilizing social media channels, and ensuring an ongoing consistent media presence. Another important step is to include all stakeholders including members of the allergy community in broader public health messaging. As we continue to face unprecedented times in the allergy community, an understanding and appreciation of risk communication will be essential as we communicate with, and inform, our patients, and our colleagues, moving forward.
The novel coronavirus COVID-19, caused by the pathogen SARS-CoV-2, originated in Wuhan, China and has now spread to 6 continents and 66 countries with over 650,000 individuals affected and over 30,000 deaths internationally. (1,2) Within the United States, the Institute for Health Metrics and Evaluation (IHME) has predicted this pandemic to far exceed current healthcare capacity with a total of 81,114 deaths (95%UI 38,242 to 162,106) over the next four months. (3) COVID-19 has led to unprecedented international public health measures, including mandatory social distancing, and prolonged school closures. Healthcare resource reallocation at this time includes restricting access to all but the most essential ambulatory visits by shifting this to virtual visits for most ongoing primary and specialty care. (4–6) Multiple guidelines have emerged from international societies on the management of care during COVID-19, including a North American guideline on contingency planning for allergy and immunology clinics during a pandemic and a Canadian Pediatric Society statement on asthma management during COVID-19. (7,8)

In such unequalled and unstable times, circumstances are changing and information rapidly evolving. A focus must not be just on the transmission of reliable and up to date information but also on the role of proper and effective risk communication.

Risk communication, as defined by the World Health Organization (WHO), is “the exchange of real-time information, advice and opinions between experts and people facing threats to their health, economic or social well-being.” (9) There are two broad risk models that are commonly used. The first is the realist approach, whereby risk is seen to be objective and independent of social context. The second is the social constructionist approach whereby risk is seen to be interrelated with sociocultural context. (10) It is increasingly recognized that society, communities, and our patients view risk from a social constructionist approach. (10)

The importance of risk management and effective risk communication cannot be overstated. At the 20th anniversary of the Chernobyl nuclear accident, the United Nations released a 600-page report incorporating the works of hundreds of health experts, finding that the mental health impact of Chernobyl was “the largest public health problem created by the accident,” attributing that profound impact to the “lack of accurate information,” or improper
risk communication. As a reporter poignantly stated in response to the Fukushima nuclear crisis, “risk management in a crisis has to include not just the threat itself but also how people perceive and respond to the threat...The risk from how people perceive risk, is as real as the physical danger itself...Far too little respect has been paid to the risk caused by the way people perceive and respond to risk”.

There are aspects to pandemics that can heighten risk perception, so-called “dread factors” which largely apply to the current SARS-CoV-2 pandemic. These include high rates of infection, significant morbidity and mortality, lack of protective or therapeutic measures, and rapid increases in cases or case fatality rates (CFR). These factors can be drivers of serious, and often unmeasurable, consequences resulting from heightened risk perception. In our specialty, a salient and poignant example is the recent shortage of metered dose inhaler (MDI) asthma quick-relief medications (e.g., albuterol/salbutamol) all over the world including Canada, the United States, and Australia, given the high risk of nebulized versions of these medications increasing the risk of viral aerosolization and infection transmission.

Multiple countries have been required to place restrictions on prescription medications such as bronchodilators (as well as anti-malarial and certain antibiotics) due to “hoarding” and in an attempt “to control stockpiling by customers.” An Australian news article from March 25, 2020 highlights the concern of asthmatics in Australia who have run out of their albuterol supply, noting this to be “endangering the lives of people with chronic illnesses” such as our allergic patients.

Another example is insufficient personal protective equipment (PPE) to protect physicians from infection risk, including allergists and immunologists, at this time. The World Health Organization has noted that PPE shortages “are leaving doctors, nurses...dangerously ill-equipped to care for...patients, due to limited access to supplies” largely as a result of “panic buying, hoarding and misuse.” This global lack of PPE is attributed, at least in part, to high public consumer fear and demand. Lack of access to PPE has far-reaching consequences. PPE is recommended in the care of anyone with suspected COVID-19 by multiple health organizations including the WHO and the Centers for Disease Control (CDC), forcing physicians to choose between protecting themselves and caring for their patients.
a recent poignant editorial in *The Lancet* the global shortage of PPE was described, noting that medical staff are seeing infected, or possibly infected, patients without proper protective equipment.(21) Data out of China suggests more than 3300 healthcare workers have been infected by COVID-19 as of early March, with at least 22 fatalities, though this number has exceeded 50 in Italy by late March.(21,22) North American healthcare worker fatality numbers remain unclear at present.

It must also be appreciated that there is a ‘trickle up’ effect of risk perception, as the public informs policy makers, who to some degree must adhere to the requests and perceptions of their constituents. As a result, the public’s perception of risk informs policymakers, who are inherently subject to a broader sociocultural context when communicating and responding to information.(10)

Lessons in risk communication are usually retroactive, and therefore cannot be informed by the current COVID-19 pandemic. However, the SARS 2003 epidemic in Canada provides our specialty lessons that are useful in how to communicate risk effectively in these times, that we could integrate both with our patients directly and more broadly within policy and public health realms.

One potential way to ensure appropriate risk communication is through use of social media, as the public largely relies on media and social relationships to inform their level of risk perception.(23–26) A significant mitigator of the SARS epidemic was the degree of fear and uncertainty of families in Canada, heightened as healthcare was “unable to provide them with much information.”(27) The CDC states that utilization of social media for public health messaging accomplishes several goals of successful risk communication including reaching diverse audiences, establishing interactive and ongoing community engagement, facilitating public control and empowerment, and increasing the likely impact/broadening the transmission of urgent public health communications.(28,29) Recommendations include that allergy societies should have their websites contain as up-to-date information as possible, and serve as educational platforms both for physicians and for our patients. Using multiple forms of social media including Facebook, Twitter, and YouTube videos allows the message to be dispersed more widely within the general public.(30,31)
A second important lesson learned from SARS is to ensure an ongoing, consistent relationships with the media, as with SARS “daily headlines generated widespread fear and panic.”(27) It is recommended that “efforts to decrease sensationalism, to portray an honest picture, and to elicit the help and understanding of the public” are lessons that can be applied to any epidemic or pandemic.(27) As noted by the WHO, a significant part of effective risk communication involves the “identification and management of rumours, and misinformation.”(9) Assigning one team from each allergy society to be a media resource and presence, with ongoing communication between these groups, helps ensure a consistent message is conveyed through the media for our patients who are most concerned about the effects of this virus with their underlying conditions, in particular our immunocompromised and asthmatic patients.(32,33) A COVID-19 taskforce was recently appointed by the AAAAI, to handle these issues.(34) Another important step moving forward is involving all stakeholders, including members of the allergy community, in the broader public health messaging. The goal of risk communication is its bi-directional nature which is meant to be inherently collaborative and not a didactic message from physician to public. (35) Finally, it is important to remember with all public health messaging through our specialty that risk is composed of actual hazard, and the public perception of hazard. As noted in a recent book on risk communication, “We have these two very different activities, both called risk communication: alerting people and reassuring them.”(36) Clear and pertinent guidance is emerging from allergy societies about the management of allergic conditions during COVID-19 (Table 1). As we continue to face unprecedented times in the allergy community, an understanding and appreciation of risk communication will be essential as we communicate with, and inform, our patients, and our colleagues, moving forward.
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| Table 1: Messaging and Management of Allergic Conditions During COVID-19 (7,8) |
|---------------------------------------------------------------|
| **Food Allergy**                                             | **Asthma**                                                                                     |
|                                                               | There is no evidence that asthma predisposes to COVID-19 but it is                             |
|                                                               | a theoretical risk factor for morbidity                                                      |
|                                                               | Remain on current asthma medications                                                         |
|                                                               | Avoid nebulization as it can increase viral transmission                                     |
|                                                               | Oral corticosteroids can be used if required for asthma exacerbations                       |
|                                                               | **Allergic rhinitis**                                                                         |
|                                                               | Allergic rhinitis can be differentiated from COVID-19 due to                                 |
|                                                               | absence of fever and myalgias                                                                |
|                                                               | Service reduction in rhinitis management is strongly recommended                            |
|                                                               | Immunotherapy should not be initiated during COVID-19 with rare exceptions                  |
|                                                               | **Food allergy**                                                                              |
|                                                               | Follow current food allergy management plan                                                  |
|                                                               | Emergency care after using epinephrine autoinjectors should be                              |
|                                                               | avoided unless symptoms do not improve                                                       |
|                                                               | Immunotherapy initiation and up-dosing should be deferred                                   |
|                                                               | With rare exceptions oral challenges should be deferred                                     |
|                                                               | With rare exceptions follow up visits should be deferred or held                            |
|                                                               | virtually                                                                                    |