

Adventure travel and the COVID-19 pandemic – recommendation of the Medical Commission of the Union Internationale des Associations d'Alpinisme (UIAA)

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Abstract

Lots of information is available by news, internet, social media, press and medical papers. However there is a lack of specific information on how to manage the COVID risk while mountaineering. The paper should assist mountaineers and agencies to fulfill safety procedures en route.

History of this recommendation paper

This paper was approved by the commission by written consent in lieu of a meeting in May 2021.

Members of UIAA MedCom (in alphabetical order)

Agazzi, G. (Italy), Alemdar, E. (Turkey), Andjelkovic, M. (Serbia), Angelini, C. (Italy), Basnyat, B. (Nepal), Behpour, A.R. (Iran), Bouzat, P. (France), Brugger, H. (Italy), Dhillon, S. (UK), Dikic, N. (Serbia), Gurtoo, A. (India), Hefti, U. (Switzerland), Hillebrandt, D. (UK), Hilty, M. (Switzerland), Holmgren, J. (Sweden), Horakova, L. (Czech Republic), Jean, D. (France), Kamikomaki, N. (Japan), Kanazawa, H. (Japan), Koukoutsi, A. (Greece), Kuepper, T. (Germany), Masuyama, S. (Japan), Mateikaite, K. (Lithuania), McCall, J. (Canada), Meijer, H. (Netherlands), Morrison, A. (UK), Nogueira Garrigos Vinhaes, E. (Brazil), Paal, P. (Austria), Peters, P. (Luxembourg), Reis E. Silva, M. (Portugal), Rodway, G. (USA), Roi, G. S. (Italy), Rosier, A. (USA), Rotman, I. (Czech Republic), Schoeffl, V. (Germany), Shahbazi, J. (Iran), Sherpa, N. N. (Nepal), Sherpa, S. Z. (Nepal), Trevena, D. (Australia), van der Spek, R. (Netherlands), van Vessem, M. (Netherlands), von Delft, E. (South Africa), Wichardt, E. L. (Norway).

Keywords

- COVID-19
- SARS-CoV-2
- risk
- risk management
- crisis

Contribution

A – the preparation of the research project

B – the assembly of data for the research undertaken

C – the conducting of statistical analysis

D – interpretation of results

E – manuscript preparation

F – literature review

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Conflict of interest

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"In the modern world local and international travel was taken for granted and this has enabled the adventure travel industry to thrive. This concept is now threatened by the COVID-19 pandemic. Many individual mountaineers and those in the industry see the pandemic in simplistic terms and do not appreciate the many additional risks that have to be taken into account when planning a trip. Our medical knowledge of the SARS-CoV-2 virus is constantly evolving so this advice paper has applied the general principles of travel and expedition medicine to give insight into the many varied medical and political risk factors to be considered when planning any venture [1]."

Introduction: UIAA MedCom

The Medical Commission of the Union Internationale des Associations d'Alpinisme (UIAA, International Climbing and Mountaineering Federation) is the world umbrella organization which works on topics concerning medical prevention in mountain medicine in the broadest sense. It consists of delegates from the member countries. These delegates should be specialists in mountain and high-altitude medicine. Actually the 43 delegates represent 25 countries. The recommendations of the commission aim to harmonise medical advice for mountaineers worldwide. Details may be found at www.theuiaa.org/medical_advice.html.

Introduction: Adventure travel and COVID-19

The COVID-19 or SARS-CoV-2 pandemic is an evolving phenomenon. It is uneven in its distribution and severity with various regions across the globe being affected to a different degree. The pathogen responsible for the pandemic is constantly mutating and may become either more or less aggressive. As such management of problems associated with adventure and expedition travel remains a moving target. Any advice is only valid for the time it is given and for the locality. This paper provides a simple planning tool to facilitate the assessment of adventure travel and aiding risk assessment. It is as universal as it is non-specific. It is hoped that it helps those planning an adventure to identify and remedy any vulnerabilities in their plan.

Structure of the recommendation

We have divided considerations according to intended distance to be travelled and the issues to be tackled. This is illustrated in Tab. 1 and Tab. 2 along with the questions a reader may wish to pursue in more detail. The text itself is not intended as a comprehensive review, as this would be impossible given the constantly changing nature of international and local travel but it encourages reflection on the risk and the feasibility of the intended expedition or adventure. It opens up a discussion with potential patients, partners or clients who need to make informed choices.

Impediments

Crossing international borders has traditionally been problematic. Having a valid passport, the correct visa, permits and sometimes evidence of sufficient funds has been required for many years at certain borders. Letters of recommendation or introduction are also valuable, as is cash to cover personal "tips". The current COVID-19 pandemic has created its own set of impediments associated with travel and border crossings. Public health requirements vary across the globe. Some borders remain closed whilst others may let selected individuals through subject to subsequent quarantine. As international traffic picks up temperature checks, viral swabs for RT-PCR or rapid point of care antigen lateral flow testing (LFT) may suddenly be introduced [2]. In some areas the latter rapid tests are being used at the usual check-in at the airport or within days of arrival after a period of quarantine. They may be slightly less sensitive than a PCR based test however being very specific they minimise the risk resulting from a false positive result. These LFTs are now available as self-test kits but with up to 42 per cent false negatives for viral carriage they have major limitations and can create a false sense of security [3]. Certificates of vaccination or immunity based on antibody test results may become standard entry requirements. Travel plans will have to be made acknowledging the possibility of becoming pyrexial, testing positive at the border or having the wrong sort of certificate or other documentation. Some states may require you to pre-register for testing and declare your itinerary or hotel accommodation prior to entry or use local track and trace technology. Pre-entry requirements are usually available online, but equally can be exploited

Table 1. Considerations with regards to feasibility of adventure travel under pandemic conditions

Category	Specific aspects demanding analysis	Examples
Impediments to travel	<ul style="list-style-type: none"> • Government advice • Government regulations • Quarantine needs • Availability of Insurance • Access to Health Care • Efficacy of Health Care • Resource Access other than Health Care 	<ul style="list-style-type: none"> • Availability and changeability of information concerning access, required documentation, quarantine needs etc. • Restrictions of access based on government regulations, need for testing, quarantine needs, etc. • Impact on the composition of the group ie number of participants (private or organised) vis-a-vis travel arrangements, accommodation in view of government regulations (re: social distancing) • Vaccination requirements at destination / transit locations • Ability to engage or hire local operators (transport, guides, porters etc)
Risks of travel	<ul style="list-style-type: none"> • Pre-travel risks • Travel risks • Transit risks • Arrival risks • Accommodation risks • Adventure risks (including feasibility of evac) • Return risks 	<ul style="list-style-type: none"> • Risks inherent to the activity and destination. Those may include trauma, tropical disease, altitude problems or other ailments. • Risks posed by the pandemic. Those risks are direct (infection with the pandemic agent) and indirect (e.g., access to care or medication that may be restricted by the pandemic) • Inability to travel if infected with the pandemic virus
Risk mitigation	<ul style="list-style-type: none"> • Non-specific • Individual-specific • Location-specific • Travel/Transit-specific • Arrival-specific • Accommodation-specific • Evacuation-specific 	<ul style="list-style-type: none"> • Non-specific risk mitigation (e.g. adherence to public health advice e.g. "hands, face, space") • Specific risk mitigation relates to different aspects of risks. Pre-travel risk mitigation may involve for example self quarantine, vaccination should this become available. Travel risk mitigation may involve a choice of mode of transport (e.g. private vehicle in preference to public transport), choice of direct flight over transit. Arrival risk management (having extra time in case of regulation change and need for quarantine, with perhaps additional objectives if quarantine is not needed); Accommodation risks e.g. minimising time in hotels or big cities where risk of transmission is high). • Pre-adventure planning should identify vulnerabilities of any travel plan (hold ups, need to alter itinerary, need for quarantine, need to access healthcare) and build resilience into the project (extra time, local operators with access to resources etc, alternative objectives)

Table 2. Considerations with regards to crisis management and ethics of adventure travel under pandemic conditions

Category	Specific considerations	Examples
Crisis management	<ul style="list-style-type: none"> • Death • Illness • Mental health considerations • Violence and civil unrest • Evacuation 	<ul style="list-style-type: none"> • A health crisis on a background of pandemic is potentially difficult to manage on account of already stretched local resources, altered triage, ineffectual insurance and a host of other problems • Crisis management may be hampered by advice again non-essential travel that invalidates insurance, limited scope for evacuation precipitated by public health concerns etc. • Resource limitation (e.g drug or oxygen shortage) may hamper effective care at the adventure destination • In face of overwhelming pandemic communication and effective policing may be impaired reducing access to consular assistance and increasing risks of violent assault
Ethical considerations	<ul style="list-style-type: none"> • Will adventure travel bring about benefit or harm to people at the destination? 	<ul style="list-style-type: none"> • Will proposed travel result in benefit to the participants as well as the support personnel in the host country? Does this benefit outweigh the risks? • Will risk mitigation strategies be offered to participants at a host country (e.g. offer of vaccination or treatment in the event of being affected by the pandemic)? • Is the fulfilment to personal ambitions leading to non-essential travel sufficient motivation to travel during the pandemic? • Does proposed travel impact negatively on resources available to combat pandemic in the destination country?

in a clandestine fashion in states without strong legal oversight. Many conditions other than the pandemic virus may lead to raised body temperature, with hormonal cycle being the most benign. It is possible to test positive in the aftermath of previous infection with no viable virus on board [4]. Some countries, for example Israel, are considering making vaccination against COVID-19 mandatory and relevant legislation to permit this already exists [5]. Others may follow. Mandatory testing at the border has been imposed on some people entering the European Union and other countries at an additional cost to the travelers. The regulations vary between countries and are subject to change at short notice. This may play havoc with planned itineraries or proposed transit destinations. This can even occur whilst in transit, as happened with a flight from Nice to Oslo, when 153 passengers ended up being quarantined as Norway declared France a “red zone” effective from midnight. The flight landed at one minute past midnight [6].

Choice and availability of accommodation may also be impacted. In the UK the “Rule of Six” meant that no more than 6 individuals could check into rented accommodation such as mountain huts. Lockdown has shut down hotels and similar restrictions may be encountered across the world. What are they at the planned destination? If the pandemic is active at the destination enforcing restrictions of movement (e.g., restriction against non-essential travel or banning all flights) and shutting down the infrastructure (e.g., no access to shops, government offices or trekking agents) what would be the impact on the planned journey? While one can take personal precautions to avoid infection, the above circumstances could make the project impossible due to lack of time, resources, accommodation or excessive cost and bureaucracy.

Risks

While a discussion on the issue of social distancing in remote mountain areas may precipitate derision there are not mountain ranges close to everybody's homes. It is “getting to the hills” rather than “staying in the hills” that may be the main problem. Whether by plane, train or a bus there is a chance for cross infection owing to the close proximity of other passengers. In September JAMA published patient advice on risk of COVID-19 during air travel concluding the overall risk of transmission on the aircraft is low [7]. This advice was based on the assumption that modern aircraft, although recirculating air, maintain air quality through use of high efficiency particulate absorbing (HEPA)

filters. Nevertheless, literature suggests that in-aircraft transmission is possible. Outbreak of SARS on board a Boeing 777-300 from Hong Kong to Beijing in 2003 [8] serves as an example. The aircraft carried 120 passengers and the flight time was 180 minutes. One of the passengers had SARS. Twenty-two passengers contracted infection. Other documented clusters of infection spread on board of aircraft include Influenza A/Texas strain outbreak on aboard a commercial carrier in 1979. This resulted in 72% of all passengers aboard the airline contracting influenza within 72 hours. The high transmission rate in this case was believed to be attributable to passengers being kept aboard the aircraft for three hours with an inoperative ventilation system while repair work was being undertaken [9]. In 2020 Khanh NC et al explored a cluster of COVID-19 cases among passengers arriving on the same ten-hour flight from London, UK, to Hanoi, Vietnam, on March 2 (Vietnam Airlines flight 54 [VN54]). Affected persons were passengers, crew, and their close contacts. Among the 16 persons in whom SARS-CoV-2 infection was detected, 12 (75%) were passengers seated in business class along with the only symptomatic person (attack rate 62%) [10]. In this respect one can view any flight as risky compared to private land transfer but land travel may not be possible for distant destinations and may involve more border crossings.

The next potential for infection is accommodation at the destination. The hospitality industry is inevitably linked to the travel and adventure industry. Quality and type of accommodation varies hugely across the world from simple mountain shelters or huts, with bunk beds being the norm to five-star hotels where interaction is likely in the lobbies, lifts or the dining areas. A prime example of infectivity occurring over a short period of contact is served by the Skagit County, Washington, Choir Practice Incident. This occurred in March 2020. Of 61 persons attending the two-hour choir practice one carried the virus. Fifty-three cases subsequently developed symptoms (86.7%), Three were hospitalised and 2 of those died [11]. Conceptually this is no different to attending a banquet at a hotel or another social event in a restaurant where the babble of conversation is not unlike the choir performance in terms of respiratory disease dissemination. The hotel environment is also not unlike that of a Cruise Ship and examples of transmission are served by the corona virus outbreaks aboard Diamond Princess in Japan and Grand Princess off the coast of California [12].

Apart from direct impact on health, morbidity and mortality through COVID-19 infection this pandemic has had an indirect impact evidenced through excess deaths [13,14]. This may be because of fear or inability

to access health care or because of limitation in available resources such as operating lists or ICU beds. Access to specialist or generalist's advice for non-covid pathology is likely to be restricted. Outside hospitals rescue services may be impaired by the need for personal protective equipment and the need to change and clean equipment between rescues [15]. On a global scale there are suggestions of changes in disease patterns with the example of faltering efforts in TB control being reported. Access to travel clinics for specialist advice may be reduced or non-existent with resources being deployed elsewhere. In many regions of the world the threat of unemployment and consequent economic pressures leads to an inevitable increase in poverty and associated political instability with a potential rise in crime and violence. These are the very regions preferred by adventure tourists and are the areas that rely on tourism for their income.

Accessing help in the event of being victim of accident, illness or civil unrest may not be easy in our pandemic world [16]. It is an old maxim in the travel medicine community that people should not travel to a country if they are not willing for any initial treatment to be undertaken in a local health facility. Currently such facilities may be overwhelmed by infection and onward repatriation may be further delayed by formal travel restrictions. Travel insurance will become more complex, may have more exclusions and will become much more expensive. For UK residents the British Foreign Office may suddenly advise against all travel to a specific region rendering many insurance policies invalid.

Mitigation

Adventure travel carries inherent risks. Ed Douglas once said "So far, we're still free to go into the hills on our own terms. Risk is still a fundamental part of climbing ethos" [17]. This however does not mean travelers should compound these risks by pursuing a reckless course that increases the likelihood of an adverse outcome for the patient, their companions or the local population. The consequences of injury or illness not only effect the victim, but also their companions and family, who by attempting to secure the best outcome may be exposed to personal risks amplified by the pandemic. The unique set of circumstances offered by this pandemic means that risk management has become ever more important for both the independent traveler and commercial companies offering adventure and expeditions services. Travel risk management is an established field with professional advice available. For

those not seeking corporate level advice, risk management strategies can be sourced from governmental or independent advisory sources such as the UK National Travel and Health Network and Centre (NaTHNaC), the USA Centre for Disease Control (CDC), the German Federal Ministry of Health or Swiss Department for Foreign Affairs (FDFA) or whatever seems most appropriate for the country of origin of the trip, transit countries and the destination. It should be remembered that websites have a considerable lag with regards to being updated so intelligence gathering remains a continuous process until the departure date and may involve comparing the information from all available resources.

One way of bypassing individual data acquisition is to delegate risk management to a reputable expedition company [18]. A company is bound by duty of care and remains focused on maintaining staff and client safety. This can only be achieved by thorough research and a risk management strategy. Data acquisition and analysis, risk assessment and response planning along with communication strategies and crisis management plans should already be established and when possible or required adjusted for the circumstances. Engagement with stakeholders at the destination such as local agents, reliable local hotels, local clinics, transport or rescue services should already be in place. Those planning independent travel may wish to access available checklists such as the travel advice provided by the UK Foreign Office.

In general mitigation strategies can be based on the stage of travel or preparations. Pre-departure strategies include prophylactic vaccination, acquisition of suitable insurance (beware government advice against all non-essential travel which may invalidate some policies) and crisis planning for those with existing health problems. Many pre-existing medical conditions such as hypertension and diabetes predispose to the COVID-19 infection. Plans for the journey itself include pre-trip testing, choice of carrier (avoiding transit stops), social distancing, hand hygiene and face coverings. Limiting in flight purchases and using contactless technologies may also help. Large reputable carriers will have executed risk studies which have passenger and crew safety as a priority.

Availability of vaccines may ultimately reduce the risks but long-term data is only just becoming available. Although vaccination may offer reassurance to many it is not a perfect solution. While it may attenuate the severity of the disease its long-term effects on transmissibility are unknown [19]. It is not yet confirmed that all current vaccines are able to induce sterilising immunity in the upper airway although data is emerging for BNT12b2 vaccine (BioNTech, Fosun Pharma,

Pfizer) [20]. Duration of protection also requires ongoing study but, again, data is becoming available as time progresses. It appears that the MRNA-1273 vaccine (Moderna) may offer protection for the six months that have been studied so far [21]. Ongoing transmission in absence of symptoms may be possible, as well as reinfection once immunity wanes. It is possible that it could render an individual asymptomatic, but still infectious. Certificate of vaccination would therefore not reliably preclude onward transmission.

As vaccines become available the ethics of immunized expedition members travelling to COVID-19 risk areas and using non-immunized local staff and porters may become a further discussion point. Expeditions do have a duty of care to their employed staff and the fine balance of providing income to local staff against increasing risk takes on another dimension under pandemic circumstances. This pre monsoon 2021 Everest season has already seen the first cases of COVID-19 infection at Everest base camp and more are expected with the associated difficulties as the differential diagnosis is complicated by the likelihood of high-altitude pulmonary oedema [22-24]. Spread to local staff seems inevitable.

At the destination focus should remain on social distancing (which may be difficult at some destinations), hand hygiene and face covering. This may be interpreted through choice of onward travel (private hire rather than public transport), avoidance of social contact in hotel lobbies and restaurants and ultimately prompt escape from high density urban environment to the relative safety and solitude of one's tent. The same principles should apply to the return journey.

Crisis

Humans, by nature, struggle with probabilistic thinking. Likelihood of low frequency events tends to be underestimated. A crisis often comes as a surprise even though by the very nature of adventure travel it should have been anticipated. Potential adverse circumstances should be anticipated for example: admission to hospital, the need for repatriation or even death and the response should be pre-planned. This includes consideration of the resources required such as internal and international communications, which hospitals can be used, the associated cost and insurance cover for repatriation. An unexpected death will inevitably involve consular services and local police procedures. A crisis management plan should be in place pre-departure with the hope of never needing it. Knowledge of local resources may need to be reappraised for availability under pandemic conditions.

Any communication strategy needs to be planned with redundancy built in. Failure of local telephone network or civil unrest precipitating communication shut down need to be considered given the current circumstances. An extra layer of safety may demand access to satellite communications. Ultimately the traveler must accept that the ongoing pandemic may hamper any rescue regardless of the nominally available resources.

Finally, crisis, in the context of adventure travel, has traditionally been viewed as the occurrence of an accident, injury, severe illness or death. The physical nature of these incidents permitted protocols and standard operating procedures backed by insurance and repatriation arrangements. Our current pandemic has resulted in an unprecedented level of psychological distress accentuated by the related uncertainties. Not surprisingly psychiatric pathology is on the rise in relation to COVID-19 with rising incidence of a first psychiatric diagnosis [25]. In the United States the prevalence of serious psychological distress has risen from 3.9% in the pre-pandemic times (2018) to 13.6% in April 2020 [26]. This appears to predominant in the younger adults (aged 18-29) and remains constant throughout the pandemic [27]. The demographics of the people who first return to adventure travel cannot yet be determined. Until the current pandemic people aged 28-45 were the predominant trekkers in both the Annapurna and Khumbu regions of Nepal [28] but with older members of the population of potential travelers being immunised first we may see an initial swing to an older age group. It is equally possible that the many younger travelers and gap year students, who tend to see themselves at lower risk, may return to backpacking, sometimes at altitude. This is the same group more prone to psychological problems. The pursuit of adventure travel may be a result in stress but for some the adventure may be therapeutic. The stress of adverse circumstances both in relation to pandemic and in relation to a novel environment may be enough to lead to a psychiatric crisis with a psychotic episode, suicide attempt, anxiety attack or simply reckless behaviour. The effects on the remainder of the travelling party and on the logistics of pursuing a chosen itinerary may be disastrous. Previous psychiatric diagnosis, young age and possibly COVID-19 infection may increase this risk. Equally one could speculate that previous expedition experience may attenuate psychological risks.

Conclusions

Inevitably pursuit of adventure travel in the time of pandemic is likely to be subject of very polarised views. This paper does not aim to make specific

recommendations. It simply attempts to help to facilitate an assessment for those considering travel. It applies in this time of pandemic, but many messages contained within can be generalised to the time beyond the pandemic. From scientific perspective a few issues of known unknowns are highlighted that may not be appreciated by the non-specialist audience, for example those regarding vaccination or testing. At every step of the planning for adventure uncertainties should be highlighted and acknowledged (or made transparent to the participants). Finally, anyone wishing to pursue travel in difficult times such as these, ought to reflect on the ethics of such action and ensure that the travel brings positive values (in the broadest sense) to the participants as well as their hosts at a chosen destination. A balanced equation should always point towards benefit for all with minimal risk of collateral damage. If the journey feels like a right thing to do, after assessment of risks and feasibility, then it should be undertaken but only then it will inspire and bring enjoyment.

Resources

- <https://www.cdc.gov/>
- <https://www.theuiaa.org/home/covid19november2020/>
- <https://www.gov.uk/foreign-travel-advice>
- <https://travelhealthpro.org.uk/>
- <https://www.fitfortravel.nhs.uk/home>
- <https://www.bundesgesundheitsministerium.de/coronavirus/current-information-for-travellers.html>
- <https://www.eda.admin.ch/eda/en/fdfa.html>

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