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The 2021/22 Antarctic season

Background

After what national Antarctic programs’ called “a challenging but successful 2020/21 Antarctic summer season”, programs had hoped that the 2021/22 season would be less challenging, that the global number of cases of COVID-19 would be trending downward, that international travel restrictions would have eased, and that the global pandemic would soon be at its end. This was not the case, and as the 2020/21 season was coming to a close, planning began for the 2021/22 season under challenging circumstances once again.

This paper follows on from COMNAP IP 82 (2021) “National Antarctic Programs’ operations during an unprecedented Antarctic Season” and presents information on the work of COMNAP and COMNAP Member national Antarctic programs’ to keep expeditioners safe, continue to support research in the Antarctic Treaty area, and to evolve and implement protocols in order to sustain the collective goal for the 2021/22 Antarctic season to keep Antarctica COVID-19 free. With the global pandemic not yet over, this paper provides information and serves to document a few of the many continuing, extraordinary, challenges, and responses for Antarctic season 2021/22.

Sustained Efforts Continued

Carrying out Antarctic activity since the start of the global pandemic has required sustained effort by the national Antarctic programs during a time when individuals are also under pressure due to changes in work situations and personal constraints.

For another year, through COMNAP, national Antarctic programs worked proactively to identify and address additional risk imposed on operations during the global pandemic. Due to good planning, open and regular communications, and by adapting to lessons learned from the 2020/21 season, for the 2021/22 season there was a return to near pre-pandemic science facilitation levels for many programs, though not all. Several programs managed to increase science capacity from planned levels to ensure support was given to researchers with postponed projects from the 2020/21 Antarctic season. Many programs had resource and capacity to start large operational projects that had been delayed from planned start dates during the 2020/21 Antarctic season. Winter-over activities, including winter-over research, were carried out at “usual” levels.

In Support of the Common Goal

For the 2021/22 Antarctic season, the common goal continued to focus COMNAP and COMNAP Member national Antarctic programs. That goal was: “Keep the coronavirus off the Antarctic continent, thereby keeping national Antarctic program expeditioners healthy and safe”. This took individual and collective effort and all stakeholders should be acknowledged for their commitment to making Antarctic season 2021/22 successful.

In support of the common goal:

* COMNAP continued to convene the COVID-19 *ad hoc* Subcommittee.
* COMNAP continued to review and adapt the “COVID-19 Outbreak Prevention and Management Guidelines” to collectively strengthen national efforts.
* There were regular updates and sharing of information amongst program medical practitioners, especially through the Joint Expert Group on Human Biology & Medicine (JEGHBM).
* All COMNAP Member national Antarctic programs implemented COVID-19 protocols pre-deployment of their expeditioners, reviewed their on-station medical capabilities and supplies, and their medevac plans.
* Regional groups adopted and committed to protocols for their inter-continental and intra-continental movements and collaborative activities. Intra-Antarctic transit facilities developed and implemented robust protocols.
* Through the Secretariats, COMNAP and IAATO remained in regular and open conversation throughout the season. COMNAP guidance continued to recommend no interactions between tourists and Antarctic-based program personnel, including a COMNAP recommendation that tourists should be prevented from entering national Antarctic program facilities and from any interaction with national Antarctic program personnel. IAATO supported this recommendation.
* COMNAP carried out core business and supported Members and Observers through a range of virtual meetings, forums and workshops.
* The COMNAP Secretariat increased its use of social media, especially YouTube and Twitter, as additional informal outlets to share information, news and events.
* The COMNAP Secretariat also issued eight formal status communiques to Members and Observers, and one public statement in response to incorrect media reports in early January 2022.

Unprecedented, AGAIN

There are many successes to report including that the 2020/21 winter-over period began with full complement of winter-over expeditioners on the continent at year-round stations with all national Antarctic programs having implemented protocols to ensure those winter-over personnel began their seasons SARS-CoV-2 virus free. The early availability of vaccines in some countries coupled with later starts for some programs winter-over periods meant that some national Antarctic programs were able to distribute vaccines to their Antarctic expeditioners at the close of the summer season, before winter-over periods began. Planning then began for the opening of stations and the start of Antarctic season 2021/22.

Staying connected by virtual means

COMNAP convened four Townhall Meetings on 7, 8, 13 and 14 April 2021 each led by an EXCOM officer and each focused on regional considerations. Participation in these sessions was high with delegates from all Member programs, from three of the seven Observer programs and with representatives from IAATO. The focus was on sharing common themes, concerns, opportunities and actions in the context of the continuing pandemic. Even during these early April 2021 meetings, there was a feeling that the 2021/22 season “could be more challenging and complicated than the 2020/21 Antarctic summer season.”

The “Townhall Meetings” were followed by online Expert Group Forums in June 2021 on the topics of:

* Air Operations (the Aviation Workshop also took place in March 2022)
* Advancing Critical Technologies
* Safety
* Education, Outreach & Training
* Marine Platforms
* Environmental Protection (an additional session also took place in February 2022)
* Medical (a mid-season review meeting also took place in February 2022)

The Executive Committee held online business meetings and meetings under urgency on 17 March 2021, 11 May 2021, 30 June 2021, 18 August 2021, 22 & 23 September 2021, 9 December 2021, 4 January 2022 and 3 March 2022. The SCAR President, the COMNAP Chair & the COMNAP Executive Secretary held a discussion together on 14 October 2021.

The online Regional Break-out Group sessions proved critical to exchange pre-season information once again and to advance plan based on the global situation as at mid-July 2021. The regional groups were: Peninsula, Ross Sea, East Antarctica, Larsemann Hills Management Group, High Plateau, and Dronning Maud Land. These pre-season meetings were updated during the 4 November 2021 Antarctic “Gateways” Situation Update Session.

For 2020 and 2021, the planned in-person COMNAP Annual General Meetings (AGM) were cancelled and contingency plans were implemented to move to a virtual platform. The COMNAP AGM XXXIII (2021) included an online plenary business session on 14 July 2021. In total, 289 people registered to participate in at least one of the online AGM sessions-that was almost double the total from the online COMNAP AGM XXXII (2020). The COMNAP Antarctic Aviation Workshop 2022 was held from 15 February through 15 March 2022 by way of YouTube on demand sessions and a Zoom plenary session. Ninety-fine people registered for the workshop.

While there is a strong preference for in-person meetings when possible, there was also a recognition that virtual platforms are vital to our collaborative, sustainable work.

Developing and Sharing Guidance & Information

The first version of the “COMNAP COVID-19 Outbreak Prevention & Management Response Guidelines” (non-mandatory) were developed and distributed to Member and Observer national Antarctic programs on 29 June 2020 in response to the global pandemic declared on 11 March 2020. During the 2020/21 Antarctic season they were revised and updated five times. With version 6 (13 January 2021) being the final version for the 2020/21 Antarctic season.

In anticipation of the 2021/22 Antarctic season, COMNAP prepared version 7 (15 June 2021) “COMNAP COVID-19 Outbreak Prevention & Management Guidelines for the 2021/22 Antarctic season” with an update on 15 July 2021. These were regularly reviewed through-out the Antarctic season in light of the evolving situation globally and the situation at each pre-deployment point to Antarctica.

In addition, the JEGHBM produced a “COVID-19 Vaccination: Current and Predicted Challenges; Important considerations for National Antarctic Programmes” advisory paper (V5.1, March 2021).

Regular communiques were issued from the COMNAP Secretariat to all national Antarctic programs and to the IAATO Secretariat to update the number of reported cases in Antarctica and to confirm outcomes of the reported cases.[[1]](#footnote-1) COMNAP issued eight communiques in total. Programs not only reported positive cases in the Antarctic Treaty area but shared information in regards to pre-deployment situations, cases identified while expeditioners were in isolation awaiting deployment, and cases identified as expeditioners were travelling north from Antarctica.

Isolation and regular testing, coupled with a “pause” in some intra-continental movements stopped the spread of the virus as per the protocols’ intention. There was one medical evacuation related to an unwell expeditioner-who subsequently recovered, and one evacuation of all persons at a station who tested positive, including all those who were asymptomatic. All information was freely shared.

Providing operations, logistics and other critical support

Armed with learning from the 2020/21 Antarctic season and committed to delivering their Governments’ Antarctic strategies and programmes for the 2021/22 Antarctic season, national Antarctic programs in consultation with the authorities at each country the program would transit through, navigated the evolving situation to return, in the case of many of the programs, to near pre-pandemic levels of activity.

The continuing global supply chain crisis worked against planning for the season with the onset of the Omicron variant in late 2021 taking hold globally and impacting the workforce at ports, in manufacturing, and in cargo and fuel supply chains. Globally, port infrastructure could not keep pace with arrival of container vessels. This continues to create global chaotic ripple effects around the world.[[2]](#footnote-2) Experts are predicting that global supply chain operations may not get back to normal until mid-2024. In addition, rising inflation and insufficient supply across a range of goods including fuel and food meant cargo costs have increased significantly. The cost of moving a 40ft container was 170% higher in December 2021 than it was in December 2020.[[3]](#footnote-3) This significantly affects national Antarctic program planning/ability to deliver required cargo and supplies to Antarctica and adversely impacts programs’ budgets. There were other significant programs’ budgets impacts, especially due to the costs associated with a high number of person-days in quarantine.

Other critical support included that provided to expeditioners, many of whom consider working in the Antarctic, an opportunity of a lifetime. For the past two Antarctic seasons, expeditioners were subject to additional mental stresses that traveling during a global pandemic presented. They left family and friends behind during a time of global uncertainty, were asked to subject themselves to additional pre-deployment medical screening processes, long isolation and quarantine periods, and were asked to comply with non-pharmaceutical practices (such as facemask wearing) and protocols (including extended isolation/quarantine periods) especially during transit but also, in some cases, when required in the Antarctic. National Antarctic programs were already aware of the challenges deploying to, living and working in, the isolated and austere Antarctic environment presented to expeditioners and so were able to respond to additional mental health and well-being considerations. This, however, took additional resource and additional consultation with experts in the fields of mental health and well-being in extreme environments. It required heightened training and raised awareness from station managers and others with oversite of expeditioners’ health and safety.

Continuing to deliver and facilitate Antarctic research

The core business of national Antarctic programs is to support, deliver and facilitate their countries’ Antarctic strategy. There were changes to plans as the season unfolded, however, by-and-large, the programs all worked as planned to deliver their seasons successfully. A few highlights of the season as provided by national Antarctic programs:

* Capturing of data from a rare warm weather event, Concordia Station, 18 March 2022.
* The International Thwaites Glacier collaboration and a team of 32 international scientists carried out research utilizing underwater robotic technology to understand present and past conditions close to and underneath the Thwaites ice shelf and neighbouring Dotson Glacier, early January 2022.
* The “Beyond EPICA Oldest Ice” ten nation team successfully completed the first ice core drilling campaign, finished the field camp installation, set up the drilling area reaching a depth of 130 metres, completed the temporary storage cave, and installed the complex drilling system, which is necessary to continue this unprecedented challenge during the next few seasons, from late November 2021 through end of January 2022.
* A traverse team completed a 1,200 kms ice shelf journey to set up camp for a team of climate change scientists, November/December 2021.
* The IceCube Collaboration of approximately 300 physicists from 53 institutions in 12 countries continued to collect and investigate data related to observations of the cosmos.
* The Australian icebreaker *Nuyina* made its first journey to Antarctica and successfully trialled a krill “wet well” enabling capture of krill and plankton live and in perfect condition for research purposes, December 2021/January 2022.
* The British icebreaker *Sir David Attenborough* made its first journey to Antarctica and completed ice trials while a team of researchers at Rothera Station completed the first phase of a multi-year programme to understand sources of aerosols and their impact on cloud properties in Antarctica, with a view to ultimately reducing uncertainties in climate sensitivity due to clouds. Infrastructure and specialist instruments were installed and are currently making year-round observations.
* At Princess Elisabeth Station, the Belgian Antarctic Research Expedition (BELARE), coordinated the installation of a string of automatic weather stations (AWS) in conjunction with the WSL (Zurich), the University of Colorado at Boulder (CIRES) and the Royal Meteorological Institute of Belgium, creating a transect from the ocean to the Antarctic plateau over a distance of over 300 kms. It is envisioned that the data from this transect will greatly enhance weather and climate models. Also, at the station, there was a successful test of a snow rover electric vehicle for operations in the area while reducing environmental impacts.

Conclusion

COMNAP IP 82 (2021) closed by saying that “It appears that the 2021/22 season will also be especially challenging due to the SARS-CoV-2 virus”, and that statement proved to be correct. At the start of Antarctic season 2021/22 there were vaccines in our toolbox to combat the virus but there was inequality in distribution, availability and up-take. There were very different situations at the various pre-departure points to Antarctica and international travel restrictions remained in place and were subject to frequent change and cancellations. COVID-19 fatigue was identified as a real issue, with everyone dealing with the stress resulting from being eighteen months into a global pandemic.

Delivering personnel to and from Antarctica remained challenging and several national Antarctic programs continued to implement their contingency plans based on lessons learned from the 2020/21 Antarctic deployments.

Presently, the global pandemic continues even as countries lift all restrictions related to socialising and travel. There are 227 countries reporting over 472,000,000 cases[[4]](#footnote-4) to date and over 6 million deaths.[[5]](#footnote-5) After a consistent decrease in the number of new COVID-19 cases reported globally on a weekly basis since the end of January 2022, during the week of 7 through 13 March 2022, the number of new weekly cases has increased by 8% as compared to the previous week.[[6]](#footnote-6) So the pandemic remains far from over. However, current data from WHO indicates that the situation continues to improve in regards to reduced morbidity and mortality in those without additional risk factors from the current dominant variant of the virus.

If the trends continue along this path, this likely points to a lowering of risk related to Antarctic activity. COMNAP and national Antarctic programs are making plans in advance of the 2022/23 Antarctic season with a view to all the continuing challenges, and to addressing and mitigating risk, all while continuing to deliver and support their Antarctic activity in the spirit of the Antarctic Treaty.

1. All reports indicated that infected individuals had made full recoveries. [↑](#footnote-ref-1)
2. *The Guardian* International Edition “Global supply chain crisis could last another two years, warn experts”, Martin Farrer, 18 December 2021. [↑](#footnote-ref-2)
3. See <https://www.drewry.co.uk/supply-chain-advisors/supply-chain-expertise/world-container-index-assessed-by-drewry>, accessed 28 March 2022. [↑](#footnote-ref-3)
4. Four times the number of cases reported in our COMNAP IP 82 (2021). [↑](#footnote-ref-4)
5. Double the number of deaths reported in our COMNAP IP 82 (2021). [↑](#footnote-ref-5)
6. WHO Weekly Epidemiological Update, edition 83, published 15 March 2022. [↑](#footnote-ref-6)