

The coldest job on earth

An Antarctic and expedition medicine doctor



Alexander Kumar

Graduated from Guy's, King's and St Thomas' Medical School in London in 2008. He also holds a first class honours degree in International Public Health. He has lived, worked, and travelled in more than 60 countries. He is studying for a further degree in Remote Healthcare, and holds a special interest in snakebite. When not being an expedition medic, he works as a trainee anaesthetics doctor on the Acute Care Common Stem pathway within the Oxford School of Anaesthesia at John Radcliffe Hospital. In 2012, he was offered the opportunity to conduct research for the European Space Agency in Antarctica. See AlexanderKumar.com

Where are you located?

Alongside 12 European crew members, I live at Concordia Station, which is an isolated French-Italian inland research station, high up at 3800 metres equivalent altitude on the Antarctic Plateau—the world's coldest environment.

What attracted you to Antarctica?

Antarctica for me was a new frontier. I grew up dreaming about the polar regions—the wildlife, the history of exploration—life at its most extreme. The advert for my job reminded me of Ernest Shackleton's in the *Times* for his own expedition 100 years ago: "men wanted . . . safe return doubtful." To be in Antarctica 100 years on from Robert Falcon Scott, who passed away in his tent on 29 March 1912, has been the best experience of my life.

What does your role at the station involve?

I tend to see two to three crew members per week for minor ailments, including complications of altitude, isolation, and the cold. There's been nothing serious, although we have had a few evacuations in the summer. It's unpredictable and, with it being the most extreme environment in the world, there is a risk that anything can happen.

Everyone has been health screened but accidents happen. Jerri Nielsen, the doctor at the South Pole in 1999, developed breast cancer but couldn't get an evacuation and so had to have chemotherapy there for a period of months. I've heard about various other stories—an eye being removed—but nothing beats the Russia's Mirny Antarctic station where in 1961 Dr Rogozov, aged 27, took out his own appendix.

What do you have to bear in mind when practising medicine in the Polar regions?

Living isolated in Antarctica I have realised that prevention is everything. The same principle is true for expedition medicine—a thorough health screening for each individual is crucial. I have been on too many expeditions where patients or their general practitioners or doctors have signed them off as being "fit," and not declared that they were on a particular drug or that they had a chronic condition.

What skills learnt at medical school can be used in expedition medicine?

You have to be able to remain calm under pressure so clinical experience in any of the acute medical specialities helps. The variety of cases and conditions means you have to be familiar with most specialities. For example, you might wish you had learnt more about dermatology and

Leishmaniasis when presented with an unusual rash and lesion on an expedition in the Amazon.

Pain management and basic surgical and suturing skills are also important. Knowledge and experience of common and unusual conditions help a lot. If you want a holiday, expedition medicine is not for you. It involves a great deal of preparation, patience, and communication. But if you decide it is for you; don't forget to pack your imagination.

You are involved in researching space medicine—has your training in anaesthetics helped?

Space medicine is relatively new to me but specialising in anaesthetics has helped greatly in my research. Anaesthetics and intensive care are all about fundamentals of physiology—breathing and living—and these are important to space medicine research.

In space, there are isolation, weightlessness, and changes in physiology—these are governed by the same processes you see at play in an intensive care unit. For example, imagine a patient is bed bound with a disabling illness for six months—in anaesthetics—you're watching for associated haemodynamic changes in relation to injuries and drugs over this time. In space, you're observing similar changes.

What advice would you give medical students who are interested in pursuing a similar career to yours?

Get off the path. The career path is too heavily trodden and aspects of training sometimes upset your mind and direction. Stick with your training and make opportunities where they don't exist. A year off here or there might be the best thing you could do.

I've always taken every opportunity or made an opportunity if it didn't exist. Setting up a wilderness medicine and exploration society at King's College London, undertaking a placement in general practice in the Shetland Islands, obstetrics and gynaecology in India, alongside numerous expeditions from the Amazon jungle to the Arctic. Making the most out of every opportunity is the best thing I could recommend.

I leave you with the wise words of Bear Grylls, "Do not go where the path may lead, go instead where there is no path and leave a trail," especially if you have a poor sense of direction.

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