

What's it like for medical assistants in Antarctica – people with no previous medical training? Penguin researcher and PhD student, Megan Tierney, went to Antarctica in 2002–03 to collect biological samples from Adélie penguins for dietary analysis, and to study the effects of krill fluctuations on Adélies and other krill-dependent predators. She also volunteered to become Mawson Station's anaesthetic assistant, under the supervision of Dr John Smith.

I first became interested in Antarctica when I was about 10 years old. It amazed me that anything could survive there and I wanted to know how those penguins and seals did it and how those early explorers managed. After completing my honours year at the Institute of Antarctic and Southern Ocean Studies, at the University of Tasmania, I was selected to run the field component of the Royal Penguin Breeding Success and Foraging Behaviour Monitoring Programme on Macquarie Island. Following that I started working with the AAD on the Adélie Penguin Programme, where I have been fortunate to spend four summers and a winter at Mawson.

Everyone on station takes on extra duties in addition to their normal role, so that the station runs smoothly. Volunteering for medical duties appealed to me because it was a chance to learn something new and acquire skills that could be handy back in the real world. Being a biologist by trade I also liked the idea of seeing how the human

body works. Each expeditioner registered their interest in the extra station duties and these were then divided up among them. Obviously anyone with prior medical training would be encouraged to volunteer for the medical team.

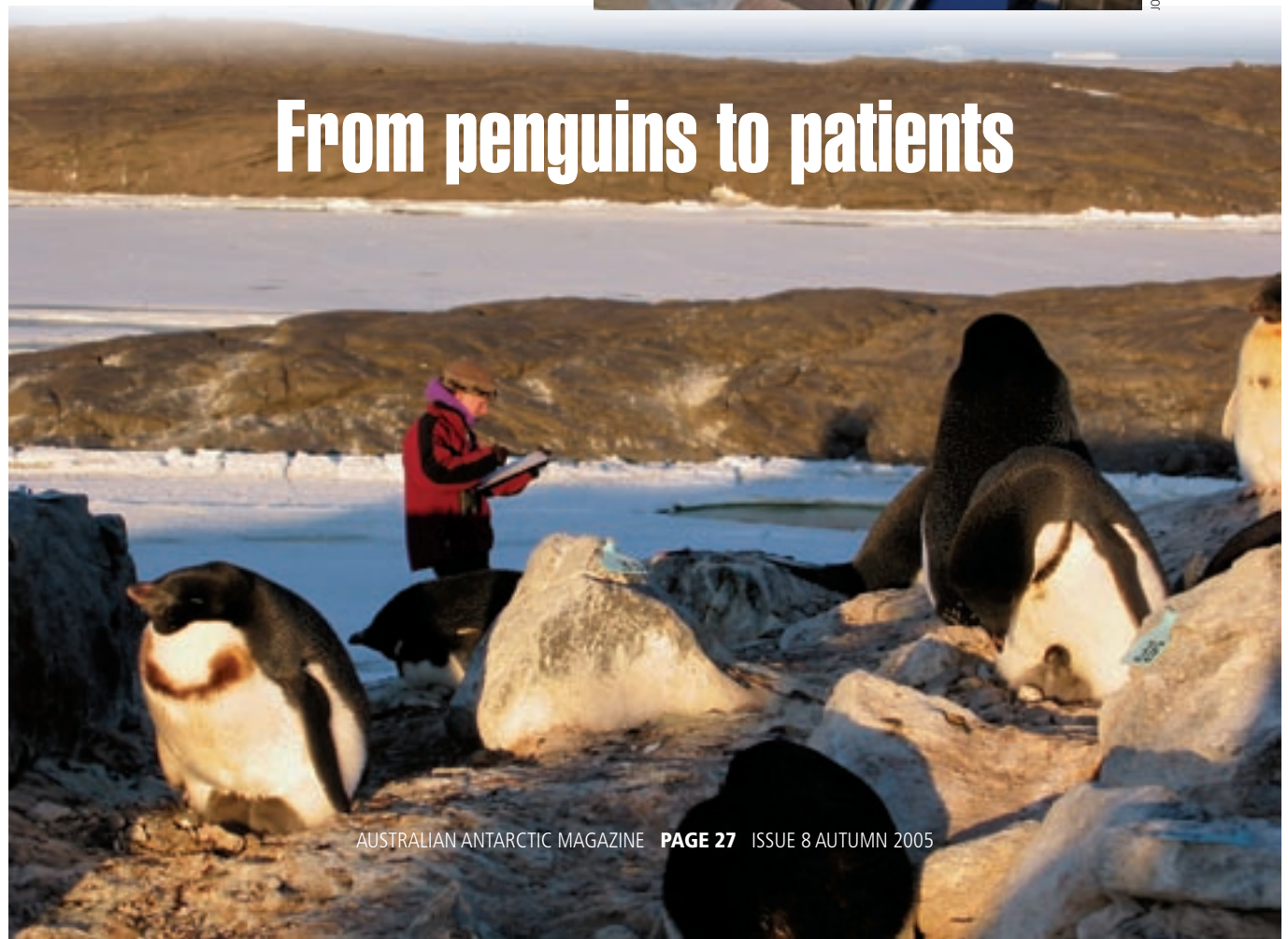
The medical training I had was a little different to the rest of the assistant medical team. Usually volunteers undergo several weeks training at the Royal Hobart Hospital, which is a highlight of the pre-departure training and critical to our



Assistant anaesthetist Megan Tierney monitors anaesthesia equipment during a training session at Mawson Station.

JOHN SMITH

Megan conducts an Adélie nest census at the field site on Béchervaise Island.



CHRISTICKNER

From penguins to patients

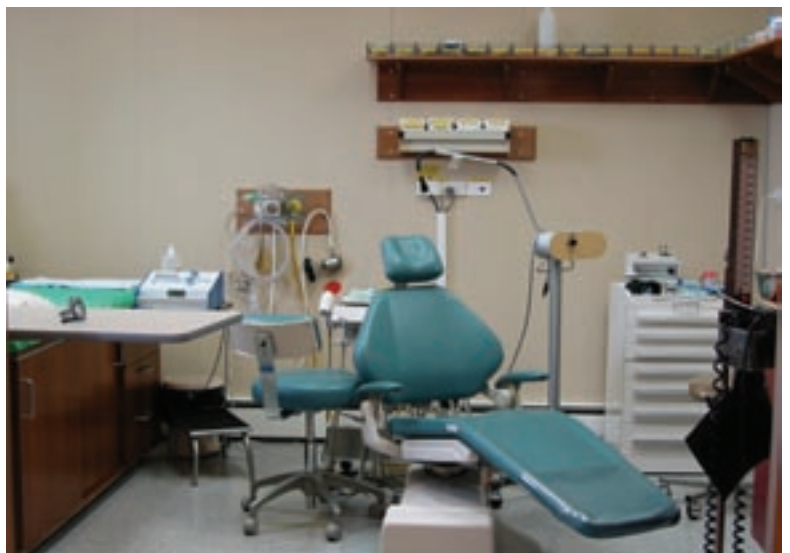
Megan's usual work involves collecting faecal, blood, feather and preen-gland oil samples from Adélie penguins and analysing them for clues to the birds' diets. If these samples prove useful in identifying dietary components, they may provide an alternative or additional means of analysing seabird diets. The current practise of stomach flushing has a number of biases and ethical issues associated with it.

Megan is also involved in the Béchervaise Island Penguin Monitoring Programme. This environmental monitoring programme is using Adélie penguins to gauge the effect of changes in krill density in the Southern Ocean, on krill-dependent predators. Krill is the primary food of Adélies and many other Southern Ocean animals, but there is also the potential to harvest krill for human use. By understanding the natural patterns in krill fluctuations and the resulting impact on Adélie penguin breeding success and population size, the programme hopes to help establish sustainable catch limits on krill if a fishery was to re-open in the Mawson region.



JUDY CLARKE

Australia's Antarctic stations are comprehensively equipped to stabilise and manage most medical, surgical and dental emergencies as these pictures of Mawson Station's emergency bay (left) and dental suite (right) demonstrate.



JOHN SMITH

medical support. But when Mawson's assistant anaesthetist had to return to Australia unexpectedly, I put my hand up to take on the role. As a result, all my training was undertaken on site in the Mawson surgery, where I was put through my paces with our doctor, John Smith. 'Doc' (as he invariably became known around station) was a great instructor – very calm, down-to-earth and thorough – and he always emphasised that if we weren't sure of anything all we had to do was ask.

There were two assistant anaesthetists on our medical team, plumber Greg Liddle and I. Between the two of us we would prepare the anaesthetic machinery and get the various bits like drugs, needles and endo-trachea tubes ready to put a patient under anaesthetic. Prior to any operation or surgical procedure we would assist in preparing the patient (by putting drips in or monitoring vital signs, for example). During the procedure we would assist in putting them under anaesthesia and then we would monitor them throughout, under the supervision of the doctor, ensuring they were sufficiently sedated, safe and in no pain.

To have the opportunity to do something so left field of my normal work life and the daily routine was great. I think we might have all been a bit nervous if a serious situation had arisen, because we would have known the patient well. However, I know that with the training and direction we were given by Doc, our team would have been more than capable of making any operation as successful as possible.

The opportunity to see how an operating theatre works, from patient preparation, through to post-operative care and clean-up, was fantastic. Even now it amazes me that I know the principles of putting someone under anaesthetic (under guidance and supervision, of course!), and it still shocks my family and friends that everyday people like plumbers, diesel mechanics, chefs, meteorology observers, scientists, electricians and carpenters, are the doctor's assistants in Antarctica. 'Where are the trained nurses?' they ask. But in Antarctica you have no choice. I would have trusted any of our medical team to look after me and if I get the opportunity to do another winter I'd love to be part of it again.

—MEGAN TIERNEY

Southern Ocean Ecosystems Programme, AAD