



engineeringworldhealth

Winter Institute
Nepal 2024
Final Report

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EXECUTIVE SUMMARY

EWH's 2024 Winter Institute with UNSW Sydney was our first Winter Institute in Nepal despite having a long history of successful Summer Institute programs in the country.

During the program, eleven undergraduate students from Australia traveled to Nepal for a nine-week Institute. After one month of intensive hands-on training and language courses, participants worked as volunteer biomedical equipment technicians in small groups around the country.



Sanjana inspecting the tubing on an oxygen concentrator

During their five weeks of hospital work, participants completed an estimated \$272,000 worth of service and repairs. A total of 136 pieces of equipment were returned to service across four partner hospitals.

Outside of their hospital work, the group participated in cultural excursions including a road trip to Pokhara to view the Himalayas. The Institute concluded with a final conference in Kathmandu, during which each team gave a presentation about what they encountered in their placement hospitals, notable repairs, and their overall experience.

My biggest accomplishment during the program was learning a new language to a very basic level and being able to connect with local people through this new skill. I have also become more confident in my engineering skills and ability.

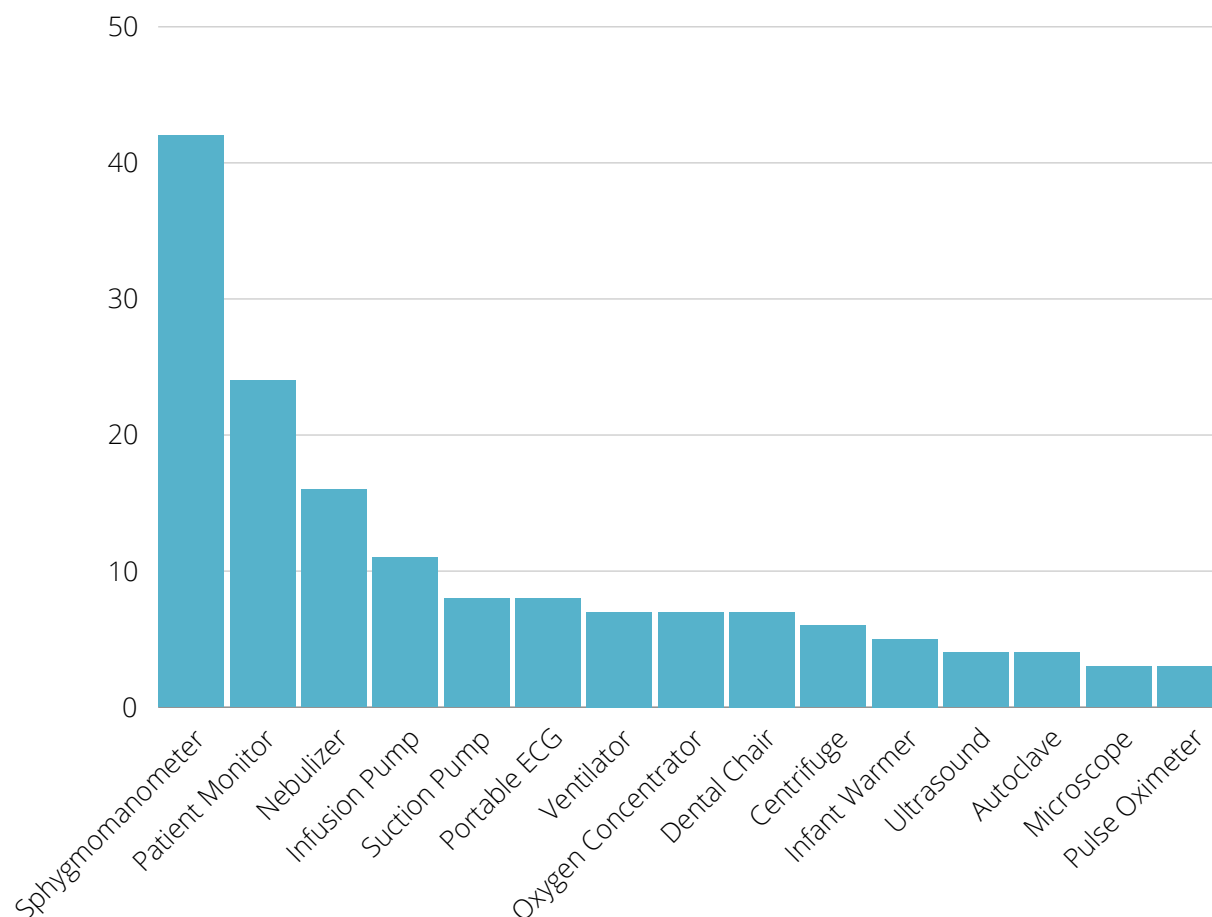
MEDICAL EQUIPMENT REPAIR

Participants were able to repair 136 of the 192 pieces of equipment that they encountered, for a success rate of 70%. Each team completes a Work Summary Form during their time in the hospital to document the pieces of equipment they encounter, the reason the piece of equipment is broken (e.g, power supply issue, blown fuse, etc), and if the repair is successful. The most common barriers to repair are lack of parts and those which require more advanced knowledge. Their work, as documented in the Work Summary Forms, is summarized below.



Tim and Hordur with a hospital administrator

Repairs/Maintenance by Type of Equipment - Top 15



MEDICAL EQUIPMENT REPAIR

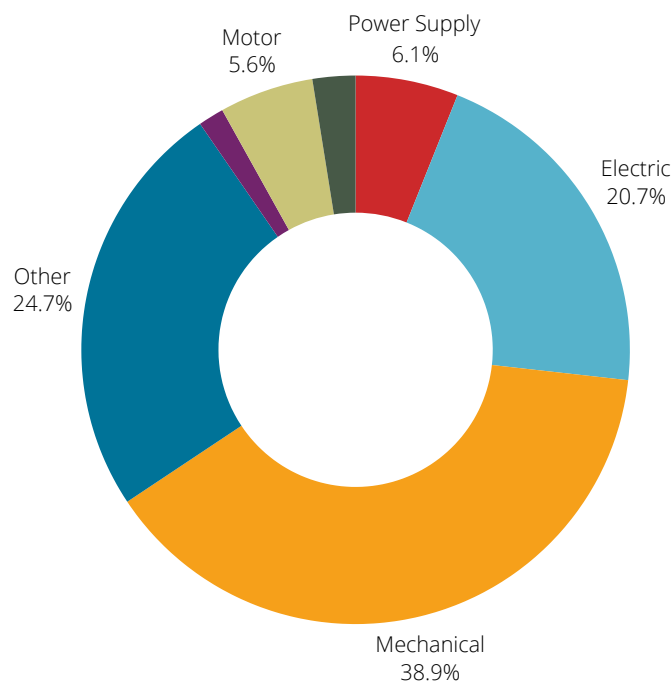
Sphygmomanometers, patient monitors, and nebulizers were among the most common pieces of equipment repaired.

Simple mechanical and electrical problems accounted for the majority of issues encountered.

In many instances participants found that they were able to see the impact of their work in real-time. One said, “[My favorite repair was] fixing a patient monitor in an OR during surgery. The blood pressure module malfunctioned and we were able to help them fix it.”

Students also found that in addition to learning about and repairing so many different medical devices, they had the opportunity to work on valuable soft skills, including communication, teamwork, professionalism, and time management.

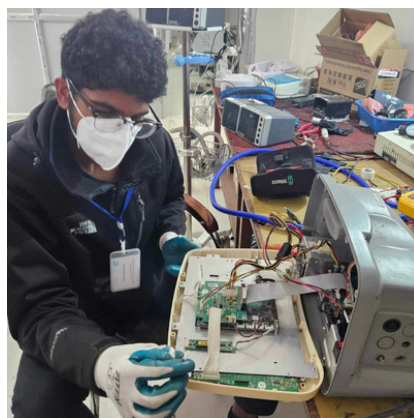
Repairs/Maintenance by Type of Repair



The exposure to numerous machines definitely made the experience challenging but rewarding.



Shreya soldering during a lab



Ramanan inspecting a patient monitor



Tim & Hordur fixing a syringe pump

PARTICIPANT DEBRIEFS AND FEEDBACK

Overall, participants found the 2024 Winter Institute in Nepal challenging but rewarding, and they thoroughly enjoyed immersing themselves in Nepali culture.

They described the program as "fun," "enlightening," and "eye-opening" Many participants pointed to gaining hands-on work experience in a new, challenging setting and forging new connections as being the most valuable aspects of the program.



Students posing with farewell gifts from hospital staff

One student remarked, "Personally the most valuable part of this experience was being able to experience a new country with completely new people around me. It was extremely valuable in learning teamwork, compromise and communication."

Participants particularly enjoyed staying in homestays and getting to know local Nepali families. One said, "My favorite experience was bonding with my homestay family. Even though they couldn't speak a lick of English and my Nepali was rusty at best, we forged a genuine connection. Ba and Aama genuinely cared for all us choris (daughters) and tried their best to keep us happy and healthy. I'll never forget making momo and roti with them and their farewell to us with handmade flower garlands."

Building relationships with other students and hospital staff was also a highlight for participants on this Winter Institute. According to one student, the best part of the program was "working with amazing future engineers and forming friendships, and making a positive difference at the hospital." Another said, **"The program taught me how to find opportunities, work in a team whilst managing our differences."**

EWH would like to thank all of the students, coordinators, instructors, partners, and donors who helped make this program possible!