

Team 2020-19 - Design of a Vaccine Refrigeration Unit

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Theme – Refrigeration

Proposal

This proposal is for an active cool box (ACB), which aims to bridge the gap between cool boxes and vaccine refrigerators.

Project summary

The active cool box is a portable refrigeration solution, which aims to reduce issues within the cold chain. It has an appropriate temperature, making it a more reliable solution than the conventional cool box, and the small size means it can be set up at vaccination outreach centres for a number of days allowing it to reach more vulnerable members of the community.

Key design highlights

The key design highlight is the use of thermoelectric cooling technology within the active cool box.

Cost

The cost of the solution including profit is \$450 USD, which can be offset by reduced vaccine wastage after only three uses.

How does your design help to work towards the Sustainable Development Goals (SDGs)?

This design looks to directly affect SGD 3 (Good Health and Wellbeing), SGD 7 (Affordable and Clean Energy) by attempting to harness technology applicable to the nascent PV mini grid market, and SGD 10 (Reduced Inequalities) by ensuring everyone has access to these critical vaccinations.

Social, environmental and economic considerations

Socially, the ACB can help increase access to vaccinations. The ACB allows for an increase in the scope of outreach programmes, thereby reducing the distances that vaccine beneficiaries need to travel. This is particularly important for people with disabilities or women with small children. Increased vaccination rates can help improve the health of whole communities, particularly because a large number of health issues experienced by those in poverty are either preventable or treatable.

[Link to the Full Report](#)

[Video Submission](#)