Vaccine Pack Features at a Glance

- No electrical grid required
- Energy efficiency through efficient insulation
- Stirling cycle refrigeration - no contribution to ozone depletion or global warming
- Maintains 2° - 8° C vaccine storage cabin temperature via continuous temperature control through convection to within + /-1° C
- Has unlimited operating time potential due to multiple recharging capabilities
- Built- in alarm indicating low batteries
- 8 Liter storage capacity that can hold up to 1200 doses
- Hands Free Carrying
- Pack weighs less than 35 lbs fully loaded
- One VacPack unit can serve a population of 50,000 people for preserving vaccines.

- Expected commercialization price between $700 -1200 US (including multi- source power adapters) 50 to 60% cheaper than currently available portable vaccine refrigerators meeting World Health Organization specifications.
- Has the potential to enter the domestic market in remote, off the grid areas of developed, as well as developing countries.
- Potentially high market demand for domestic and small commercial refrigeration applications in regions of developed and developing countries that are off the grid or have unreliable electrical services.
- Can also be of great benefit under emergency circumstances, such as natural disasters or war conditions

The Objective

The Overall objective of the Vaccine Pack Project is to help deliver vaccines to off-grid communities. To achieve this objective, the Vaccine Pack Project Team developed - and plans to make freely available - refrigeration technology that is environmentally sound, technologically reliable, affordable and multi-source powered. In addition to the electrical grid, it can run on solar, wind, biomass, and diesel generation.

The Need to Preserving Vaccines

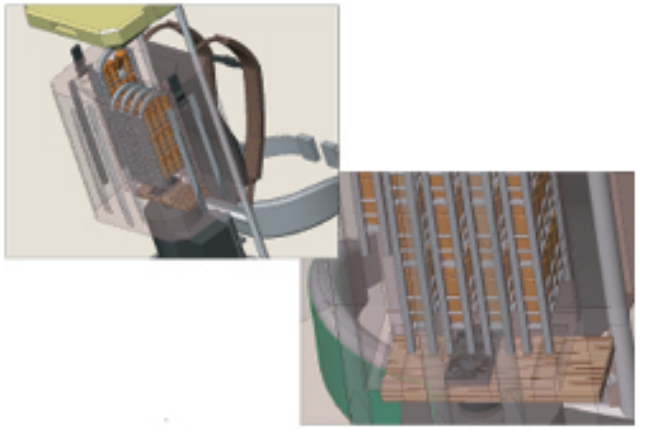
Over 4.3 Million deaths worldwide from vaccine-preventable diseases each year. The availability of vaccine refrigerators in developing countries is vital for maintaining the shelf life of vaccines and of some medicines, such as the liquid forms of antibiotics. Many regions of the world are either off the electrical grid or have an unstable electrical supply. Under such circumstances maintaining the required vaccine cold chain is problematic.

Current Carriers fail to meet the Challenge

- Due to the limited cold- life, current vaccine carriers cannot support extended outreach sessions
- Current Large Vaccine Cold Carriers (minimum capacity of 4 liters) have a maximum of 36 hrs of cold life.
- Current carriers facilitate the reduction of vaccine efficacy due to errors in temperature regulation; some 18% of vaccines are wasted worldwide (Vaccines typically account for 40-60% of programs costs and represent about $300 million worldwide; reducing wastage will reduce costs and contribute to sustainability of immunization programs.)

Vaccine Rack System

- Easy Access
- Vaccines are stored upright
- Convection Cooled for even cooling throughout storage chamber
- Accommodates common vial sizes
- Easily fits phase change material



*Patent Pending