Affordable Portable Insulin Cooler

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ABSTRACT

The goal of this project is to make an accessible, portable insulin cooler accessible to everybody.

PROBLEM DEFINITION

Insulin coolers on the market today are non-portable and/or very cost prohibitive. Most of them are passive, and not much more than a glorified thermos.

USERS

The users are diabetic people, or anyone who requires insulin to be accessible outside the home, of all financial statuses.

OUTCOMES

Ideally, this project will result in a design that will allow insulin coolers to be accessible to everyone.

FEATURES

-Locating feature, allows user to find the cooler if it’s lost

-Cooling for long periods of time, outperforming passive coolers

-Low cost, affordable to everyone

-Keeps insulin at an appropriate temperature for storage

-Data logging and display available to the user

RISKS

Finding a good compromise between batteries, device longevity, and portability is a major risk, or design challenge. This can be accomplished with more thorough research.

Another risk is the cooling method. Current solutions may not allow efficient cooling. This can be accomplished with running systems at lower duty cycles and/or building a better thermal insulation layer, to achieve higher efficiency.

RESPONSIBILITIES

The device must keep the insulin at an appropriate temperature and must notify the user if the temperature ranges are exceeded. This is critical for the health of the user.

One of the goals of the device is to be low cost. This plays into ethics and making it accessible to everyone.