APPROVED
GVR Board of Directors
Tuesday, February 28, 2017

EXHIBIT

Cardio Spark Project

Arizona Center for Accelerated Biomedical Innovation (ACABI)

Overview

The Arizona Center for Accelerated Biomedical Innovation (ACABI) at the University of Arizona is an overarching Innovation Center for the University of Arizona focusing on addressing unmet biomedical needs and developing novel solutions.

CardioSpark is a fledgling initiative started in Tucson, working closely with ACABI, the U of A College of Engineering, and Eller Business School to develop a technology and process to create a "heart-safe community." "Heart-safe is defined as having an extra layer of reaction and protection to a sudden incapacitating cardiac event needing first responders. **Marvin Slepian, MD** (ACABI Director/Innovator) and **Karl Kern, MD** - recognized leader in CPR, have been the scientific and medical principals to convert concept to reality and to foster testing of the *CardioSpark* approach

For the past few months, GVR CEO Kent J Blumenthal and COO Jim Conroy have been in discussions with ACABI (Drs. Slepian and Kern) to conduct a collaborative study, featuring specific geographically identified communities in Green Valley for the conduct of the study. Green Valley Fire District (GVFD) is involved in discussions about the study and is expected to participate. The goal in the near future is to conduct a specific study in 2-3 designated communities in Green Valley. The Green Valley Council (GVC) has endorsed the collaborative research study.

The **hypothesis being tested** in the study is that ***informed participating community members trained to be on-call first responders will arrive at a home sending out a distress call*** *(a typical 911 call for help for a cardiac patient needing CPR)* ***with time equal to if not better than professional responders*** such as a fire department. The point here is that time is life, where minutes count and the ability to initiate CPR and/or commence defibrillation with an AED may be the difference between life and death. Having the assurance for a GVR community that it has this added level of responsiveness and safety will be a highly valued, unique and advertisable feature that will be publishable and will set GVR apart from other communities around the country.

The specifics of this study will involve nine (9) volunteer homes per community and 16 to 18 volunteers who desire to participate in the study. Of note, this study will involve "dummy calls," with no risk or liability to anyone in the GVR community or to the organization or the board. Completion of the study is expected within two months of launch. There is no cost to GVR as a study collaborator.

Three aims will be tested:
Aim 1: That a volunteer responder will arrive to a call for help with time equal to or better than that of the fire department;
Aim 2: That a volunteer responder will pick up a community-based AED (defibrillator) and then proceed to the home calling for help with time equal to or better than that of the fire department;
Aim 3: That two responders, one going directly to the call, with the other first retrieving the AED and then going to the home, will arrive with time equal to or better than that of the fire department.

By virtue of participating in this study, GVR will receive the benefit of being specifically cited as the test locale, individuals from GVR may serve as study authors, and significant press and publicity will accompany this work as well as having major medical impact.

Recommendation

Endorse the *CardioSpark* research project of The Arizona Center for Accelerated Biomedical Innovation (ACABI) at the University of Arizona in support of establishing 'heart-safe' communities in Green Valley; further, assist ACABI in conducting the study, including recruiting Home Owner Associations (HOAs) and their respective HOA residents as volunteer research study participants.