

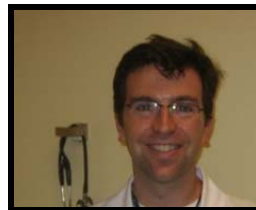
Robert Riviello, MD

Young Clinician Award 2009

Investigator Profile

Education

- MD, U. of California, San Diego
- MPH (Population and Health), Harvard School of Public Health
- AB (Biology) Cum laude, Harvard College



Clinical/Professional Appointment

- Instructor of Surgery, Harvard Medical School
- Associate Surgeon, BWH
- Attending Physician, BWH

Recent Honors and Awards

- Fulbright International Exchange Scholar, African Division, US Department of State
- MAP - Reader's Digest International Medical Fellowship, MAP International
- Yale - Johnson & Johnson Physician Scholar in International Health, Yale U School of Medicine

Impact on Care

- The global health arena has the potential to be a rich source of surgical innovation and will reap great rewards to a much broader world of patients currently without access to life-saving surgical services.
- Low-income countries (LICs) have limited access to wound care solutions while having a high burden of need. Consequently, non-healing, chronic wounds are a significant source of cost and morbidity.
- Wounds seem to be the final common pathway of so many diseases and conditions that preferentially impact the poor. So inroads into faster and better wound care would have enormous repercussion for the health of the world's poorest billion.
- The surgical ward in Rwinkwavu Hospital has 10-20 patients at a given time receiving wound care.

Abstract

This project offers a new device for managing wound therapy in low income countries by providing a low cost robust solution thus increasing access.

An initial prototype of a simplified negative pressure wound therapy device (sNPWT) was developed with engineering students as part of MIT 2.75 Course. The sNPWT pump generates a vacuum, while simultaneously collecting wound effluent - thus providing the same negative pressure and drainage benefits of electrical NPWT.

The sNPWT device design has been thoroughly tested on intact skin, on healthy subjects demonstrating no harm and effective maintenance of negative pressure. The next phase of testing will be done in conjunction with Dr. Robert Sheridan (Shriners/MGH) to test the sNPWT device for non-inferiority for both effectiveness and safety.

Further device development will be done to address potential issues occurring during in-vivo wound healing applications. A 150-bed rural district hospital in Rwinkwavu Rwanda will serve as the field site for an efficacy study.



Novel simplified negative pressure wound therapy (sNPWT) prototype device