Statement of the Problem
Health care crisis has plagued our nation for more than two decades. Rising cost has left a huge gap in the service for medically underserved communities. This is due in part to the absence of patient education, inadequate provider training, and lack of access to simple, affordable one-touch information technology.

Hypothesis
Rising costs in health care can be reduced in part if there is an electronic access to patient database and medical information (and tips) that can be accessed both by patients and providers.

Significance
The project will serve as exemplary for training the future doctors and patient population. The unique and paradigmatic FIU College of Medicine NeighborhoodHELP program has the opportunity to bring future doctors to appreciate the needs of underserved communities. Partnering with the NSF Industry-University Cooperative Research Center in IT at FIU and IBM will help to develop hardware and software tools that are needed to bring the electronic health information at the palms of the student and patient population.

Beneficiary Population
It is estimated that ~40,000 families in North Miami-Dade county (a multi-ethnic low-income rectangle) will be beneficiaries by the end of Yr 2: includes home kiosk (computer platform on broadband,) video- and email-access to FIU-COM Hotlines staffed by para-professionals with access to vital signs, and training in use of the platform. Will use the community groups as the forum.

Experimental Group with Close Monitoring
Yr 1: 40 COM Students, 80 families (?) and XX Educators and Community Groups
Yr 2: 80 COM Students, 320 (?) families and XX Educators and Community Groups

Control Groups
Two-tier Control Groups:
Tier 1: Assisted families without close monitoring – the general beneficiary population.
Tier 2: Unassisted families outside of the beneficiary region.

Data Aggregation Technology
Health records of all the willing persons in the entire beneficiary community will be collected from the physicians by facsimile using a simple document-image EHR. All but Tier 2 control group will have access to this. Records of the monitored group will be manually analyzed and augmented with detailed data, vital signs methodically collected, personal data interviewed and recorded, students acting as case managers and data brokers for the monitored families, including case summarization and presentation to treatment providers.

Interface Technology
Provide a compact portable computer ("KioskMD") with built-in camera and vitals signs receiver and software to access health records, get health guidance and exercise and video conferencing with COM student triagers and health professionals, if appropriate. Control levels: Limited patient, student, paraprofessional, expanded for educators, use/abuse managers, depersonalized for research.

In addition, a hand-held data-accessible medical device ("MiniDoc") for students and doctors will be developed to access same data.

Estimated Cost [$40 Million]
Cost to develop and deliver the instrumentation, software, maintaining curated database, monitoring, providing IT-support, staff-support and for outcome analysis.

Impact on Healthcare
The goal is for each family to have home access to health guidance, preventive care and triage, in short “a medical kiosk in every home”. This will have a positive influence on select health outcomes that may include reduced emergency room visits, improved health literacy, effective preventive care, reduced cost and reduced burden on the society at large.

Future
It will be the microcosm of future medicine that serves underserved population. This will provide the platform needed to extend the use to many communities in the state and nation. In addition to direct health and cost-savings benefits, the kiosk platform will facilitate various research studies to be funded by government and industry.
Project Outline

KioskMD

Hardware Software

Indigent Population

Students Doctors Providers

Students Doctors

Data Information Curation, Mining

MiniDoc

IBM

FIU COM NeighborhoodHELP

FIU Information Technology